THE ECONOMIC HISTORY SOCIETY

Annual Conference

Robinson College, Cambridge

1 – 3 April 2016

Programme including

New Researchers’ Papers
&
Abstracts of the other Academic Papers
### NEW RESEARCHERS’ SESSIONS

#### I/A THE MEDIEVAL ECONOMY
- **Nicholas Meinzer** Regional living standards and inequality in fifth – eighth century Alamannia  
- **Nikita Dmitriev** Foligno County (Umbria, Central Italy) in the long twelfth century, 1070s-1200: an outline of the economic transition  
- **Bernadette McCooey** The Icelandic livestock economy: challenging the traditional narrative

#### I/B STANDARDS OF LIVING
- **Vincent Geloso** Wages, income and living standards in French North America, 1688-1760  
- **Matthew Pawelski** Consumption, credit, and the standard of living: The case study of a Derbyshire lead miner, c.1789-91  
- **Daniel Gallardo-Albarrán** A composite perspective on British living standards during the industrial revolution

#### I/C CREDIT AND INSTITUTIONS IN THE EIGHTEENTH CENTURY
- **Christie Swanepoel** Do secure property rights cause debt? Evidence from colonial South Africa  
- **Üzeyir Serdar Serdaroğlu** The British Consular of the Levant Company at Smyrna: Consul George Boddington and the Boddington Company in the Ottoman commercial-business system  
- **Bora Altay** Institutional commitment problems in the Ottoman Empire: the case of the Iltizam system

#### I/D FINANCE AND ECONOMIC DEVELOPMENT
- **Cyril Milhaud** Capital market integration in early modern Spain: A reconsideration  
- **Pamfili Antipa & Christophe Chamley** Monetary and fiscal policy in England during the French Wars  
- **Jason Lennard & Seán Kenny** New money and credit aggregates for Ireland, 1840-1921: construction and implications  
- **Stuart Henderson** Religion and development in post-famine Ireland

#### I/E INDUSTRY AND MANUFACTURING
- **Giacomo Domini** Patents, exhibitions and markets for innovation in the early twentieth century: evidence from Torino’s 1911 International Exhibition  
- **Brian Varian** The revealed comparative advantages of late-Victorian Britain  
- **Kristin Ranestad** The mining sectors in Chile and Norway, c.1870-1940: the development of a knowledge gap  
- **Ewan Gibbs** Confronting deindustrialization: economic change and cultural identities in the Scottish coalfields, c.1940s-1980s

#### I/F BUSINESS STRATEGIES AND REGULATION IN THE NINETEENTH CENTURY
- **Julia Chaplin** ‘A great reversal not so much of business structure as of attitude’? The campaign behind the introduction of general limited liability in England  
- **Jasper Kunstreich** Who had the right to fail? Insolvency regulation in German
**Contents**

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/G</td>
</tr>
<tr>
<td>108</td>
</tr>
<tr>
<td>114</td>
</tr>
<tr>
<td>121</td>
</tr>
<tr>
<td>126</td>
</tr>
<tr>
<td>132</td>
</tr>
<tr>
<td>138</td>
</tr>
<tr>
<td>144</td>
</tr>
<tr>
<td>145</td>
</tr>
<tr>
<td>151</td>
</tr>
<tr>
<td>156</td>
</tr>
<tr>
<td>161</td>
</tr>
<tr>
<td>I/H</td>
</tr>
<tr>
<td>166</td>
</tr>
<tr>
<td>171</td>
</tr>
<tr>
<td>178</td>
</tr>
<tr>
<td>II/A</td>
</tr>
<tr>
<td>184</td>
</tr>
<tr>
<td>190</td>
</tr>
<tr>
<td>195</td>
</tr>
<tr>
<td>II/B</td>
</tr>
<tr>
<td>203</td>
</tr>
<tr>
<td>208</td>
</tr>
<tr>
<td>212</td>
</tr>
<tr>
<td>II/D</td>
</tr>
<tr>
<td>218</td>
</tr>
<tr>
<td>225</td>
</tr>
<tr>
<td>231</td>
</tr>
<tr>
<td>II/E</td>
</tr>
</tbody>
</table>

Leentje Moortgat et al.  Investor protection, taxation and dividend policy: Evidence from Belgium 1838-2012 235
Alexis Wearmouth  A prosopographical study of directorial control and shareholdings in Dundee-owned jute mill companies operating in colonial Calcutta, 1874-1921 241
Amy Edwards  Share-shopping over the counter: Thatcherism and the battle for the private investor, c.1972-88 247

II/F  URBAN SOCIETY AND THE PUBLIC ECONOMY
Sam Manning  Cinema programming, audience preferences and entertainments duty in Belfast, 1948-61 252
Susan Gardiner  Fostering ‘cost consciousness’ in infection control: The Royal Infirmary of Edinburgh, 1948-70 258

II/G  POLITICAL ECONOMY AND FISCAL POLICY
Matthew Fright  What we count counts: The impact of attitude shifts in economic measurement during the 1930s 264
James Hillyer  The fiscal revolution in America: a reinterpretation 269
Leonard Kukić  Socialist growth revisited: insights from Yugoslavia 274

II/H  TRADE AND CONSUMER CREDIT IN THE TWENTIETH CENTURY
Andrea Daniels  Trade liberalization, crises, and historical links: A gravity analysis of Mexico’s historical trade flows, 1962-2011 282
Sergio Castellanos-Gamboa  The economic effects of the Consumer Credit Act 1974 288

New Researcher Posters

Academic Sessions – VA MEDIEVAL ECONOMY OF ENGLAND
Alexandra Sapoznik  Bees in the medieval landscape: economy, technology and environment, 1000-1500 299
Martin Allen  The first Sterling Area 299
Dave Postles  Financial organization in English boroughs 300
Nick Amor  What TNA CP 40 tells us about the medieval woollen cloth industry 301

I/B  CREDIT, RISK AND LAW
Stefania Montemezzo  ‘All that glitters is not gold’: bankruptcies of Venetian firms in the Renaissance 306
Catia Antunes  The Bankruptcy of Cunertorf, Snel, Janssen & Co, 1570-95 306
Magrit Schulte  Risk and law in a colonial and globalizing world: the case of Mathias Giesque and the English bankruptcy law, c.1690-1706 307
Lisbeth Rodrigues  Social capital and litigation: the case of the Misericórdia of Lisbon during the eighteenth century 307

I/C  INSTITUTIONAL CHANGE IN THE LONG EIGHTEENTH CENTURY
Dan Bogart  ‘There can be no partnership with the king’: political instability and the English East India Company 309
Sean Bottomley  Property rights and wardship in England, 1603-60 310
Ling-Fan Li  The secondary market of English government debt in the late seventeenth century 311
Aaron Graham  Credible commitment and the political economy of Jamaican finance, 1769-1839 312

I/D  GROWTH AND INEQUALITY
Christian Stohr  Mountains, clusters, and cities: regional inequality in Switzerland, 1860-2008 314
Max-Stephan Schulze  Empires diverging: A spatial analysis of Habsburg and German...
Contents

& Paul Caruana Galizia
Leandro Prados de la Escosura

I/E CAMERALISM IN PRACTICE
Martin Seppel Cameralism: a success or failure of an economic thought?
Keith Tribe Baltic Cameralism
Göran Rydén Between the divine and the individual: eighteenth-century Swedish iron making and layers of household practices

I/F SOCIAL INFRASTRUCTURE
Nicola Tynan et al. Who should own and control urban water systems? Disease and the municipalization of private waterworks in nineteenth-century England
Bernard Harris & Andrew Hinde Public works loans, social intervention and mortality change in England and Wales, 1850-1914
Lars Fredrik Andersson & Liselotte Eriksson Voluntary or compulsory? Exploring dynamics of mutual cooperative formation in Swedish health insurance at the turn of the twentieth century
John Taylor Surviving the war: the funding of British higher education in the First World War

I/G INDUSTRIAL CHANGE AND DEVELOPMENT IN THE TWENTIETH CENTURY
Zhudyzbek Abylkhozhin & Gani Aldashev The effectiveness of land reforms in traditional societies: Central Asia in the 1920s
Jim Phillips Generation and changing economic order in the Scottish coalfields from the 1920s to the 1980s
Cristiano Andrea Ristuccia Saved by the British Empire: how the U.S. escaped the Great Depression
Fabio Lavista Structural policies, regional development and industrial specialization: the Italian case, 1952-2002

I/H TRADE AND FINANCE
Paolo Di Martino et al. International financial flows, domestic credit intermediation, and industrial growth in the periphery of the gold standard regime: evidence from Italy, 1861-1913
Rui Esteves & Florian Ploeckl Gold and trade: An empirical simulation approach
Jon Moen Reserves and the common pool resource problem
Lucia Coppolaro & Giulio Cainelli Does liberalization promote international trade? An empirical analysis of the Kennedy Round GATT negotiations, 1964-67

II/A TOOLS OF CREDIT
James Davis The use of merchant law in the local courts of medieval England
Chris Briggs Mortgages on a medieval English manor: Alrewas, Staffordshire, 1327-50
Matthew Stevens The evolution of the bond in late medieval England

II/B EXPLORING IDEOLOGY IN ECONOMIC AND SOCIAL HISTORY
Amanda Capern Historians, religion and economic change
Amy Erickson Rethinking the significance of inheritance and marriage to capital
Pat Hudson GDP per capita: an ideological construct

II/C EARLY MODERN EUROPE
Justin Colson Measuring participation in the probate process: Who made wills in early modern England?
Stefano Condorelli The economics of the reconstruction of Catania after the 1693
# Contents

Ali Coşkun Tuncer & Gürer Karagedikli  
*The people next door*: housing and neighbourhood in eighteenth-century Ottoman Edirne  
II/D **BACKWARDNESS AND GROWTH**  
Bob Allen  
Why didn’t the Middle East industrialize in the nineteenth century?  
Ekaterina Khastova  
Real wage rates and economic development in late Imperial Russia, 1850-1917  
Cristián Ducoing & Magnus Lindmark  
Natural assets in the former periphery: Sweden and Chile since 1850  
Jean-Pascal Bassino et al.  
Making the most of scarcity? Japanese natural assets since the 1870s  
II/E **NEO-LIBERALISM AND THE THATCHER REVOLUTION**  
Ben Jackson  
Currents of neo-liberalism: British political ideologies and the new right, c.1955-79  
Aled Davies  
The political economy of British pension funds: Neoliberalism versus Social Democracy, c.1970-86  
Florence Sutcliffe-Braithwaite  
Thatcherism, housing policy and homelessness  
II/F **FERTILITY AND SOCIAL ENGINEERING**  
Nina Boberg-Fazlic et al.  
Disease and fertility: Evidence from the 1918 Spanish flu epidemic in Sweden  
Bastien Chabé-Ferret & Paula Gobbi  
Baby boom or baby bust: the impact of uncertainty on fertility during the Great Depression and the post-WWII growth era  
Mark Harrison  
If you do not change your behaviour: Managing threats to state security in Lithuania under Soviet rule  
II/G **SPECIALIZATION IN INDUSTRIAL ECONOMIES**  
Stana Nenadic  
The value of craftwork in a nineteenth-century industrialized economy: The Scottish case  
Gill Newton  
Employers with multiple occupations in the 1881 Population Census of England and Wales  
Robert Bennett  
II/H **CENTRAL BANKING**  
Nadeem Aftab & Tehreem Husain  
The Great War and evolution of the Central Bank in India  
Luciano Amaral  
The birth of a modern financial system: Portuguese banking during World War II, 1939-45  
Eric Monnet & Damien Puy  
Foreign reserves and international adjustments under the Bretton Woods system: A reappraisal  
III/A **EARLY MODERN FINANCE**  
Oliver Volckart  
Power politics, princely debts and the failure of Germany’s common currency, 1549-55  
Jeroen Puttevils  
The lure of lady luck: Designing lottery markets in the fifteenth-and sixteenth-century Low Countries  
Hiroki Shin  
The radius of the Bank of England Note revisited, 1720s – 1820s  
III/B **NEW APPROACHES TO EARLY MODERN IRELAND**  
Bronagh McShane  
Female agency in early modern Ireland: the case of the 1641 Depositions  
Patrick Walsh  
Quantifying Ireland’s international trade, 1683-1783: A regional perspective  
Suzanne Forbes  
The potwalloping borough of Swords in 1727 and the potential of parliamentary reports for providing insight into Irish voters and
<table>
<thead>
<tr>
<th>Content</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>III/C <em>GLOBAL ECONOMY IN THE LONG EIGHTEENTH CENTURY</em></td>
<td></td>
</tr>
<tr>
<td>Alejandro García-Montón</td>
<td>360</td>
</tr>
<tr>
<td>Exploring buyer power in inter-imperial slave trade circuits:</td>
<td></td>
</tr>
<tr>
<td>Transatlantic evidence from the seventeenth century</td>
<td>361</td>
</tr>
<tr>
<td>Guillaume Daudin et al.</td>
<td></td>
</tr>
<tr>
<td>Comparing early trade statistics: The case of Austrian Netherlands</td>
<td></td>
</tr>
<tr>
<td>and France, 1759-91</td>
<td>361</td>
</tr>
<tr>
<td>Bronwen Everill</td>
<td></td>
</tr>
<tr>
<td>‘For Want of Sugar’: Consumer culture in Atlantic West Africa in the</td>
<td></td>
</tr>
<tr>
<td>Age of Abolition</td>
<td>362</td>
</tr>
<tr>
<td>III/D <em>TWENTIETH-CENTURY BUSINESS</em></td>
<td></td>
</tr>
<tr>
<td>Michael French</td>
<td>364</td>
</tr>
<tr>
<td>Confectionary and corporate imagery: uses of advertising in Britain</td>
<td></td>
</tr>
<tr>
<td>in the 1950s</td>
<td></td>
</tr>
<tr>
<td>Juan Baños &amp; Francisco Javier Fernández-Roca</td>
<td></td>
</tr>
<tr>
<td>Familiar cohesion as explanation for longevity rates in familiar</td>
<td>364</td>
</tr>
<tr>
<td>business: The Persan Case</td>
<td></td>
</tr>
<tr>
<td>Lars Bruno</td>
<td></td>
</tr>
<tr>
<td>Palm oil industry 1970-2010: Do we see a flying geese pattern</td>
<td>365</td>
</tr>
<tr>
<td>emerging?</td>
<td></td>
</tr>
<tr>
<td>III/E <em>POLITICAL ECONOMY AND MARKET PERFORMANCE IN QING CHINA</em></td>
<td></td>
</tr>
<tr>
<td>Markus Eberhardt et al.</td>
<td>367</td>
</tr>
<tr>
<td>Market integration in early modern China: Spatio-temporal analysis</td>
<td></td>
</tr>
<tr>
<td>with cross-sectional dependence</td>
<td></td>
</tr>
<tr>
<td>Mark Koyama &amp; Melanie Meng Xue</td>
<td></td>
</tr>
<tr>
<td>The Literary Inquisition: The persecution of intellectuals and</td>
<td>368</td>
</tr>
<tr>
<td>human capital accumulation in Imperial China</td>
<td></td>
</tr>
<tr>
<td>Debin Ma</td>
<td></td>
</tr>
<tr>
<td>State Capacity and Great Divergence: the case of Qing China, 1644-1911</td>
<td>368</td>
</tr>
<tr>
<td>III/F <em>HEALTH AND HEIGHT</em></td>
<td></td>
</tr>
<tr>
<td>Kris Inwood et al.</td>
<td>370</td>
</tr>
<tr>
<td>‘Tall, active and well made’? Māori stature and health in New Zealand</td>
<td></td>
</tr>
<tr>
<td>John Tang</td>
<td>370</td>
</tr>
<tr>
<td>The engine and the reaper: The impact of industrialization on</td>
<td></td>
</tr>
<tr>
<td>mortality in late nineteenth-century Japan</td>
<td></td>
</tr>
<tr>
<td>Sebastian Otten et al.</td>
<td>371</td>
</tr>
<tr>
<td>Generation war: The long-term effects of World War II on physical and</td>
<td></td>
</tr>
<tr>
<td>mental health</td>
<td></td>
</tr>
<tr>
<td>III/G <em>TECHNOLOGY TRANSFER</em></td>
<td></td>
</tr>
<tr>
<td>Felix Selgert &amp; Alexander Donges</td>
<td>372</td>
</tr>
<tr>
<td>Germany’s early industrialization: regional innovativeness and</td>
<td></td>
</tr>
<tr>
<td>technology transfer, 1843-77</td>
<td></td>
</tr>
<tr>
<td>Zorina Khan</td>
<td></td>
</tr>
<tr>
<td>Of time and space: A spatial analysis of knowledge spillovers</td>
<td>372</td>
</tr>
<tr>
<td>among patented and unpatented innovations</td>
<td></td>
</tr>
<tr>
<td>David Pretel</td>
<td></td>
</tr>
<tr>
<td>Expert knowledge and colonialism: sugar production under American</td>
<td>373</td>
</tr>
<tr>
<td>rule, 1900s-1930s</td>
<td></td>
</tr>
<tr>
<td>III/H <em>FINANCIAL MARKETS</em></td>
<td></td>
</tr>
<tr>
<td>Matthias Morys</td>
<td>374</td>
</tr>
<tr>
<td>Any lessons for today? Exchange-rate stabilization in Greece and</td>
<td></td>
</tr>
<tr>
<td>South-East Europe between economic and political objectives and</td>
<td></td>
</tr>
<tr>
<td>fiscal reality, 1841-1939</td>
<td></td>
</tr>
<tr>
<td>Leonardo Weller &amp; Emerson Marçal</td>
<td>374</td>
</tr>
<tr>
<td>Assessing very imperfect fiscal data: determinants of Brazilian</td>
<td></td>
</tr>
<tr>
<td>sovereign risk, 1880-1928</td>
<td></td>
</tr>
<tr>
<td>David Chambers et al.</td>
<td></td>
</tr>
<tr>
<td>Industries: Their rise and fall since 1900</td>
<td>375</td>
</tr>
<tr>
<td>IV/A <em>WOMEN’S COMMITTEE SESSION: WAYS OF FINANCING ACROSS EUROPE</em></td>
<td></td>
</tr>
<tr>
<td>D’Maris Coffman</td>
<td></td>
</tr>
<tr>
<td>Understanding the financial dealings of the London Company of Brewers</td>
<td>376</td>
</tr>
<tr>
<td>Cinzia Lorandini</td>
<td></td>
</tr>
<tr>
<td>Financing the silk industry: Evidence from eighteenth-century Trentino</td>
<td>376</td>
</tr>
<tr>
<td>Marcella Lorenzini</td>
<td></td>
</tr>
<tr>
<td>Notarial credit in eighteenth-century Trentino: dynamics and trends</td>
<td>377</td>
</tr>
<tr>
<td>Giuseppe De Luca</td>
<td></td>
</tr>
<tr>
<td>Non-institutional credit vs banks in the age of modernization: the</td>
<td></td>
</tr>
<tr>
<td>Contents</td>
<td>Page</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td><strong>IV/B BUSINESS OF EMPIRE</strong></td>
<td></td>
</tr>
<tr>
<td>Karwan Fatah Black</td>
<td>378</td>
</tr>
<tr>
<td>Dismantling chartered companies in the Dutch Atlantic</td>
<td>379</td>
</tr>
<tr>
<td>Susana Münch</td>
<td></td>
</tr>
<tr>
<td>Between Brazil and Asia: the global business of De Bruijn &amp; Cloots</td>
<td>379</td>
</tr>
<tr>
<td>of Lisbon, 1713-37</td>
<td></td>
</tr>
<tr>
<td>Elisabeth Heijmans</td>
<td></td>
</tr>
<tr>
<td>The case of a governor-entrepreneur in Ouidah in the first half of</td>
<td>380</td>
</tr>
<tr>
<td>the eighteenth century</td>
<td></td>
</tr>
<tr>
<td>Silvia Marzagalli</td>
<td></td>
</tr>
<tr>
<td>The Atlantic World between markets and state in eighteenth-century</td>
<td>380</td>
</tr>
<tr>
<td>France: the Sephardim firm Gradis in Bordeaux</td>
<td></td>
</tr>
<tr>
<td><strong>IV/C WORK AND WELFARE</strong></td>
<td></td>
</tr>
<tr>
<td>Jane Humphries &amp; Jacob Weisdorf</td>
<td>382</td>
</tr>
<tr>
<td>Unreal wages? A new empirical foundation for the study of English</td>
<td></td>
</tr>
<tr>
<td>living standards, 1260-1860</td>
<td></td>
</tr>
<tr>
<td>Mark Hailwood &amp; Jane Whittle</td>
<td>384</td>
</tr>
<tr>
<td>Women’s work in rural England, 1500-1700: an approach based on</td>
<td></td>
</tr>
<tr>
<td>incidental evidence in court records</td>
<td></td>
</tr>
<tr>
<td>Brodie Waddell</td>
<td>384</td>
</tr>
<tr>
<td>Measuring the rise of the parish welfare state in England, c.1600-1800</td>
<td></td>
</tr>
<tr>
<td>William Farrell &amp; Tim Reinke-Williams</td>
<td>385</td>
</tr>
<tr>
<td>Apprentice migration to early modern London: A four nations approach</td>
<td></td>
</tr>
<tr>
<td><strong>IV/D HUMAN CAPITAL</strong></td>
<td></td>
</tr>
<tr>
<td>Jeremiah Dittmar &amp; Ralf Meisenzahl</td>
<td>386</td>
</tr>
<tr>
<td>Origins of growth: Health shocks, institutions, and human capital in</td>
<td></td>
</tr>
<tr>
<td>the Protestant Reformation</td>
<td></td>
</tr>
<tr>
<td>Gregory Clark &amp; Neil Cummins</td>
<td>386</td>
</tr>
<tr>
<td>The determinants of inheritance? A genealogical enquiry, England</td>
<td></td>
</tr>
<tr>
<td>1750-2014</td>
<td></td>
</tr>
<tr>
<td>Vincent Bignon &amp; Cecilia García-Peñalosa</td>
<td>387</td>
</tr>
<tr>
<td>Protectionism and the education-fertility trade-off in late</td>
<td></td>
</tr>
<tr>
<td>nineteenth-century France</td>
<td></td>
</tr>
<tr>
<td>Gabrielle Cappelli &amp; Michelangelo Vasta</td>
<td>388</td>
</tr>
<tr>
<td>Does centralization foster human capital accumulation? Quasi-</td>
<td></td>
</tr>
<tr>
<td>experimental evidence from Italy’s Liberal Age</td>
<td></td>
</tr>
<tr>
<td><strong>IV/E INSTITUTIONS, GROWTH AND DEVELOPMENT</strong></td>
<td></td>
</tr>
<tr>
<td>Muhammad Zubair &amp; Abbasi</td>
<td>390</td>
</tr>
<tr>
<td>Law and economic efficiency: English private property law and</td>
<td></td>
</tr>
<tr>
<td>Muslim family endowments (awqāf) in British India</td>
<td></td>
</tr>
<tr>
<td>Nauro Campos et al.</td>
<td>390</td>
</tr>
<tr>
<td>Apocalypse now, apocalypse when? Economic growth and</td>
<td></td>
</tr>
<tr>
<td>structural breaks in Argentina, 1886-2003</td>
<td></td>
</tr>
<tr>
<td>Hanaan Marwah</td>
<td>392</td>
</tr>
<tr>
<td>Beyond ‘corruption’ in Nigeria: Revisiting state and state-owned</td>
<td></td>
</tr>
<tr>
<td>enterprise successes and failures, 1950-85</td>
<td></td>
</tr>
<tr>
<td>Victoria Bateman</td>
<td>392</td>
</tr>
<tr>
<td>Women and economic growth: the European marriage pattern in the</td>
<td></td>
</tr>
<tr>
<td>context of modern day countries</td>
<td></td>
</tr>
<tr>
<td><strong>IV/F MIGRATION</strong></td>
<td></td>
</tr>
<tr>
<td>Blanca Sanchez-Alonso &amp; Leticia</td>
<td>394</td>
</tr>
<tr>
<td>A city of trades: Spanish and Italian immigrants in late nineteenth-</td>
<td></td>
</tr>
<tr>
<td>century Buenos Aires, Argentina</td>
<td></td>
</tr>
<tr>
<td>Arroyo Abad</td>
<td></td>
</tr>
<tr>
<td>Marc di Tommasi</td>
<td>394</td>
</tr>
<tr>
<td>Migrant money: An assessment of migrants’ access to credit in</td>
<td></td>
</tr>
<tr>
<td>Edinburgh before the First World War</td>
<td></td>
</tr>
<tr>
<td>Robert Sweeney</td>
<td>395</td>
</tr>
<tr>
<td>Gender, discrimination and housing in turn of the century Montréal</td>
<td></td>
</tr>
<tr>
<td>Prashant Bharadwaj &amp; Rinchan Ali Mirza</td>
<td>395</td>
</tr>
<tr>
<td>Displacement and development: Partition of India and agricultural</td>
<td></td>
</tr>
<tr>
<td>development</td>
<td></td>
</tr>
<tr>
<td><strong>IV/G HISTORY &amp; POLICY SESSION: ENERGY, TRADE AND EFFICIENCY</strong></td>
<td></td>
</tr>
<tr>
<td>Hana Nielsen</td>
<td>397</td>
</tr>
<tr>
<td>East versus West: Energy transition and energy intensity in coal-</td>
<td></td>
</tr>
<tr>
<td>rich Europe</td>
<td></td>
</tr>
<tr>
<td>Sofia Henriques</td>
<td>397</td>
</tr>
<tr>
<td>Energy efficiency and the productivity race in industry, 1870-1935</td>
<td></td>
</tr>
<tr>
<td>Paul Warde &amp; Astrid Kander</td>
<td>399</td>
</tr>
<tr>
<td>International trade and energy intensity in Europe, 1870-1935</td>
<td></td>
</tr>
<tr>
<td>Dimitrios Theodoridis</td>
<td>The net ecological appropriation of Britain’s trade activities in the nineteenth century: An assessment of the relative importance of natural capital imports and exports</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>IV/H BANKING AND BUSINESS</strong></td>
<td></td>
</tr>
<tr>
<td>Lucy Newton &amp; Victoria Barnes</td>
<td>Financiers, gentlemen or captains of industry? The first bank directors in England and Wales</td>
</tr>
<tr>
<td>Andrew Odlyzko</td>
<td>Financialization of the early Victorian economy and the London Stock Exchange</td>
</tr>
<tr>
<td>Andrew Urquhart &amp; Robert Hudson</td>
<td>The inefficiency of war: Evidence from the U.S. and U.K. during WWII</td>
</tr>
<tr>
<td>Pedro Neves</td>
<td>Business in Portuguese colonies during the twentieth century: the Burnay group, natural resources and foreign capital</td>
</tr>
<tr>
<td>Economic History Society Annual Conference 2017: call for Academic Papers</td>
<td>405</td>
</tr>
<tr>
<td>Economic History Society Annual Conference 2017: call for New Researchers’ Papers</td>
<td>407</td>
</tr>
<tr>
<td>Economic History Society Annual Conference 2017: call for New Researchers’ Posters</td>
<td>408</td>
</tr>
</tbody>
</table>
Welcome to Robinson College, Cambridge

Robinson College is very pleased to host the Economic History Society conference once again (the previous occasion was in 2011). While the University of Cambridge dates its origins to 1209, Robinson is one of the newest colleges, founded in 1979 with an endowment from Sir David Robinson, a local boy who started work at 15 in his father’s cycle shop and made his fortune in radio and television rental. To the west of the city centre, Robinson is situated in the former open-fields of West Cambridge, which were enclosed in 1798 and developed into housing for academics in the later nineteenth century. The College, formally opened in 1981, is centred on the distinctive red brick complex designed by Glasgow architects, Gillespie, Kidd and Coia. The landscaped grounds blend ten pre-existing gardens of the earlier houses in the surrounding block, which are linked while still retaining their distinctive character.

The College buildings include the Edwardian former home of Nicholas Kaldor (1908-86) at 2 Adams Road and the concrete house at 2 Sylvester Road built in 1938 by Eileen Power (1889-1940) and M.M. Postan (1899-1981) after he secured the Cambridge professorship in Economic History. More than a decade earlier, in 1926, Power and R.H. Tawney had founded the Economic History Society. We are very pleased to be celebrating the 90th anniversary of the founding of the Society here in Cambridge. Eileen Power had been Professor of Economic History at LSE since 1931, but with the outbreak of war the LSE was evacuated to Cambridge and she housed students at Sylvester Road. She died suddenly in 1940, and our cover image commemorates her legacy.

The Cambridge Faculty of History is one of the largest in the world with well over 100 people engaged in teaching and research, and around 600 undergraduates and 450 graduate students at any one time. The University has played an important role in economic history since the time of William Cunningham (Trinity) and Ellen McArthur (Girton) in the late nineteenth century and today supports a large and diverse group of economic and social historians across the departments of History, Economics and Geography. (see: http://www.econsoc.hist.cam.ac.uk/index.html) There are three research units dedicated to economic and social history: the Cambridge Group for the History of Population & Social Structure; the Centre for Financial History, and the Centre for History and Economics.

The University has exceptional research facilities. Across the road from Robinson is the University library, which is one of five legal-deposit libraries in the UK, and houses over seven million volumes as well as large manuscript collections. It is probably the largest open-shelf access library in Europe. In addition there are numerous departmental and college libraries, and the archives of many of the colleges have been of great value to generations of economic and social historians. Cambridge University Press, founded in 1584, is the world’s oldest continuously operating publishing house, and a major publisher of economic and social history in Cambridge, including the Society’s textbook series ‘New Approaches to Economic and Social History’.

Cambridge is fortunate in having one of the country’s highest concentrations of internationally important museum collections outside London. Full information on the University’s museums can be found at: >http://www.cam.ac.uk/museums/< Most of these are within easy walking distance of Robinson. The best known is the Fitzwilliam Museum, which has a world-class collection of art and antiquities whilst the most unusual and charming is Kettle’s Yard, a former private home full of twentieth-century art works. Other nearby sites of interest which are particularly recommended include: King’s College Chapel, an outstanding example of perpendicular architecture, Trinity College and St John’s College. Somewhat further afield (but enroute between Robinson and the train station) are the very attractive University Botanic Gardens which occupy a 40-acre site.

Welcome to Robinson College and to Cambridge.

Amy Erickson (Local Organizer) Maureen Galbraith (Administrator, EHS)
Conference Programme

Summary Conference Programme
(See Contents for details of each session)

Friday 1 April

0900-1030 EHS Publications Committee Meeting CWB 1
1030-1330 EHS Council Meeting CWB Plenary Room
1200-1700 Registration Auditorium Foyer
1330-1530 New Researchers’ Session I
   I/A The Medieval Economy Games Room
   I/B Standards of Living Garden Room
   I/C Credit and Institutions in the Eighteenth Century Music Room
   I/D Finance and Economic Development JCR
   I/E Industry and Manufacturing Linnett Room
   I/F Business Strategies and Regulations in the Nineteenth Century Umney Lounge
   I/G Stock Markets and Capital Investment Auditorium Lounge
   I/H Banking CWB 2 & 3
1530-1600 New Researchers’ Poster Session Dining Hall Balcony
1530-1600 Tea Dining Hall/CWB
1600-1730 New Researchers’ Session II
   II/A Medieval Economy and Society Games Room
   II/B Industry, Work and Occupations Garden Room
   II/C Trade and Commercial Policy Music Room
   II/D Fertility and Mortality JCR
   II/E Investment and Shares Linnett Room
   II/F Urban Society and the Public Economy Umney Lounge
   II/G Political Economy and Fiscal Policy Auditorium Lounge
   II/H Trade and Consumer Credit in the Twentieth Century CWB 2 & 3
1730-1830 Open meeting for women in economic history CWB 2 & 3
1815-1900 Council reception for new researchers & 1st time delegates CWB Plenary
1900-2015 Dinner Dining Hall
2030-2130 Plenary Lecture: Professor Gareth Austin Auditorium
   Africa and Global Economic History
2135-2145 Meeting of new researcher prize committee Seminar Room
   Bar available until late

Saturday 2 April

0800-0845 Breakfast Garden Restaurant
0845-1045 Academic Session I
   I/A Medieval Economy of England CWB Plenary
   I/B Credit, Risk and Law Garden Room
   I/C Institutional Change in the Long Eighteenth Century Music Room
   I/D Growth and Inequality JCR
   I/E Cameralism in Practice Linnett Room
   I/F Social Infrastructure Umney Lounge
   I/G Industrial Change and Development in the Twentieth Century Auditorium Lounge
   I/H Trade and Finance CWB 2 & 3
1045-1115 New Researchers’ Poster Session Dining Hall Balcony
1045-1115 Coffee Dining Hall/CWB
### Conference Programme

**1115-1300  ** Academic Session II  

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1115-1300</td>
<td><strong>Tools of Credit</strong></td>
<td>CWB Plenary</td>
</tr>
<tr>
<td>II/A</td>
<td><strong>Exploring Ideology in Economic and Social History</strong></td>
<td>Garden Room</td>
</tr>
<tr>
<td>II/B</td>
<td><strong>Early Modern Europe</strong></td>
<td>Music Room</td>
</tr>
<tr>
<td>II/C</td>
<td><strong>Backwardness and Growth</strong></td>
<td>JCR</td>
</tr>
<tr>
<td>II/D</td>
<td><strong>Neo-Liberalism and the Thatcher Revolution</strong></td>
<td>Linnett Room</td>
</tr>
<tr>
<td>II/E</td>
<td><strong>Fertility and Social Engineering</strong></td>
<td>Umney Lounge</td>
</tr>
<tr>
<td>II/F</td>
<td><strong>Specialization in Industrial Economies</strong></td>
<td>Auditorium Lounge</td>
</tr>
<tr>
<td>II/G</td>
<td><strong>Central Banking</strong></td>
<td>CWB 2 &amp; 3</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Lunch</td>
<td>Garden Restaurant</td>
</tr>
</tbody>
</table>

**1415-1600  ** Academic Session III  

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1415-1600</td>
<td><strong>Early Modern Finance</strong></td>
<td>CWB Plenary</td>
</tr>
<tr>
<td>III/A</td>
<td><strong>New Approaches to Early Modern Ireland</strong></td>
<td>Garden Room</td>
</tr>
<tr>
<td>III/B</td>
<td><strong>Global Economy in the Long Eighteenth Century</strong></td>
<td>Music Room</td>
</tr>
<tr>
<td>III/C</td>
<td><strong>Twentieth-Century Business</strong></td>
<td>JCR</td>
</tr>
<tr>
<td>III/D</td>
<td><strong>Political Economy and Market Performance in Qing China</strong></td>
<td>Linnett Room</td>
</tr>
<tr>
<td>III/E</td>
<td><strong>Health and Height</strong></td>
<td>Umney Lounge</td>
</tr>
<tr>
<td>III/F</td>
<td><strong>Technology Transfer</strong></td>
<td>Auditorium Lounge</td>
</tr>
<tr>
<td>III/G</td>
<td><strong>Financial Markets</strong></td>
<td>CWB 2 &amp; 3</td>
</tr>
<tr>
<td>1600-1615</td>
<td><strong>New Researchers’ Poster Session</strong></td>
<td>Dining Hall Balcony</td>
</tr>
<tr>
<td>1600-1615</td>
<td>Tea</td>
<td>Dining Hall/CWB</td>
</tr>
</tbody>
</table>
| 1615-1730| **The Scope, Nature and Future of Economic & Social History**  
|          | (Plenary session)                            | Auditorium             |
| 1615-1715| **Meeting of Schools & Colleges Committee**   | Seminar Room           |
| 1730-1830| **Annual General Meeting of the Economic History Society** | CWB 2 & 3       |
| 1930-2000| **Conference Reception and Book Launch**      | CWB Plenary            |
| 2000-2200| **Conference Dinner**                         | Dining Hall            |

Bar available until late

**Sunday 3 April**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800-0900</td>
<td>Breakfast</td>
<td>Garden Restaurant</td>
</tr>
</tbody>
</table>
| 0930-1130| **Ways of Financing Across Europe (Women’s Committee Session)**  
|          | (Women’s Committee Session)                  | CWB Plenary            |
| IV/A     | **Business of Empire**                       | Garden Room            |
| IV/B     | **Work and Welfare**                         | Music Room             |
| IV/C     | **Human Capital**                            | JCR                    |
| IV/D     | **Institutions, Growth and Development**     | Linnett Room           |
| IV/E     | **Migration**                                | Umney Lounge           |
| IV/F     | **Energy, Trade and Efficiency (History & Policy Session)** | Auditorium Lounge    |
| IV/G     | **Banking and Business**                     | CWB 2 & 3              |
| 1130-1200| **New Researchers’ Poster Session**          | Dining Hall Balcony    |
| 1130-1200| Coffee                                       | Dining Hall/CWB        |
| 1200-1315| **Tawney Lecture: Professor Avner Offer**    | Auditorium             |
|          | The Market Turn: From Social Democracy to Market Liberalism | Auditorium             |
| 1315-1415| Lunch                                        | Garden Restaurant      |
| 1315-1415| Publishing Your Work (session for new researchers) | CWB Plenary          |
Brief guide to conference arrangements

The conference will take place at Robinson College, University of Cambridge. All residential accommodation, meetings and conference sessions will be located in the College.

Conference accommodation on campus
Ensuite and standard accommodation will be provided in the College.

Check-in for residential delegates
All residential delegates should please check in at the Porters’ Lodge, Robinson College, situated on the corner of Grange Road and Herschel Road, (see map overleaf), where keys will be available from 13:00 onwards; a luggage storage facility is available for those arriving before this time. The Porters’ Lodge is manned 24 hours per day, however, if you plan to arrive after 18:00 you should please advise Maureen Galbraith (ehsocsec@arts.gla.ac.uk).

Registration
Registration will take place between 12:00 and 17:00 in the Auditorium Foyer (a College Plan can be found on page xvii of this booklet). The registration desk will be staffed for the duration of the conference.

Alternative Accommodation
Information on Cambridge hotels can be found by following the links at:

The Economic History Society does not necessarily endorse any of the hotels listed.

Car parking
Robinson College has arranged with the University of Cambridge for the use of the car park at their Wilberforce Road Sports Ground by delegates attending conferences. The Ground is only some 500 yards from the Porters’ Lodge. Spaces are limited, must be pre booked via Maureen Galbraith and will be allocated on a first-come first-served basis; a parking permit will be provided.

Neither the College nor the Sports Ground accept responsibility or liability in respect of loss or damage to any property, including motor cars and items left in motor cars, brought onto the parking area by or on behalf of any persons.

The entrance to the car park is on the corner of Adams Road and Wilberforce Road. Once inside the Sports Ground please follow the signs to the parking area. The main entrance to Robinson College is at the corner of Grange Road and Herschel Road. A location map can be found overleaf.
Book displays
Publishers’ and booksellers’ displays will be in the Dining Hall at Robinson.

Meals and Morning Tea/Afternoon Coffee
Breakfasts and lunches will be served in the Garden Restaurant, dinners in the Dining Hall and teas/coffees in Dining Hall/Crausaz Wordsworth Building (CWB).

Receptions and Bar
All receptions and the bar will be located in the College.

Meeting rooms for New Researchers, Academic Sessions etc
All meeting rooms will be located in the College.

Internet Access
There is wireless internet access in all public areas of the College and wired internet access from bedrooms; delegates should provide their own Ethernet cable. Computers with internet access are located in a café on campus. Instructions and passwords will be provided on site.

Useful Contacts
Robinson College: Tel: +44 (0)1223 332 859 Email: conference@robinson.cam.ac.uk
Maureen Galbraith Tel: +44 (0)141 330 4662 Email: ehsocsec@arts.gla.ac.uk
How to reach Robinson College

Comprehensive information on travel to Robinson College, as well as maps, can be found by following the links at: http://www.robinson.cam.ac.uk/about-robinson

By Road
The College is situated in Grange Road, close to the centre of Cambridge. Grange Road runs between Barton Road and Madingley Road and is parallel to Queens’ Road (the ‘Backs’).

The best way to approach the College by road from the north, south or east is from Junction 12 of the M11.

From Junction 12 of the M11, the A603 towards Cambridge
- Take the A603 (Barton Road) towards Cambridge.
- Pass Wolfson College on the left.
- About 1.5 miles from the M11 you will reach the traffic lights of a pedestrian crossing. Grange Road is the turning on the left, directly after this pedestrian crossing, opposite the Hat and Feathers public house.
- Once in Grange Road you will pass the CU Rugby Club on the left.
- The road narrows slightly immediately before the next turning on the left which is Herschel Road. Robinson College is the new redbrick college 0.5 miles along Grange Road on the left, on the corner of Grange Road and Herschel Road.

From the North (A14)
- From the M6/M1 (Junction 19) interchange join the A14 (signposted to Kettering).
- Follow the A14 past Kettering and Huntingdon towards Cambridge.
- From the A1 at Brampton join the A14 (signposted for Stansted and Cambridge).
- Follow the A14 and signs for Cambridge.
- Get in lane for the M11 once you have passed the exit for Dry Drayton, Oakington and Cottenham. (M11 is outside and middle lanes.)
- Join the M11 following the signs for Stansted.
- Leave the motorway at the next exit, Junction 12.
- Take the A603 in the direction of Cambridge (to the left).
- Follow the directions from the M11, Junction 12, as above.

From the East (A14 from Newmarket)
Avoid the city centre
- From the East (A14 from Newmarket).
- Follow the northern by-pass to join the M11.
- The exit for the M11 is after the junction for the B1049. It is signposted ‘M11 London (A10), North, A1, Midlands’.
- Once you have taken this exit, STAY IN THE LEFT HAND LANE and join the M11.
- Leave the motorway at the next exit, Junction 12.
- Take the A603 in the direction of Cambridge (to the left).
- Follow the directions from the M11, Junction 12, as above.

From the South (A10)
- At the signpost ‘M11 The North, Huntingdon (A14), Bedford (A428), Ely (A10)’ turn left and join the M11.
- Leave the motorway at the next exit, Junction 12 signposted ‘Cambridge, Sandy and the A603’.
- Take the A603 in the direction of Cambridge (to the right).
- Follow the directions from the M11, Junction 12 as above.
How to reach Robinson College, Cambridge

From the West (A428 from Bedford)

- Along the A428 from Bedford and St Neots take the exit for the A1303, signposted for the M11 London.
- Passing the American Cemetery on the left, continue straight on at the traffic lights.
- Pass the turning for the M11 to London on your right.
- At the next traffic lights the Madingley Road ‘Park and Ride’ is on your left, continue straight on.
- Pass High Cross on your right and Madingley Rise (Observatory) on your left.
- There are a set of traffic lights at a pedestrian crossing. Immediately after these get into the right hand lane.
- Turn right into Grange Road at the next set of traffic lights.
- Once in Grange Road pass Clarkson Road on your right and continue for about 0.5 mile.
- Robinson College is the new redbrick college 0.4 miles down Grange Road on the right, situated between Adams Road and Herschel Road.

Directions for Cyclists and Pedestrians

From Market Square in the town centre

- Go past Great St Mary’s, heading towards Senate House.
- Follow Senate House Passage, then turn right onto Trinity Lane.
- Turn left 30 yards later onto Garret Hostel Lane.
- Continue over the footbridge until you reach Queens’ Road.
- Cross Queens’ Road and continue on the footpath running past the University Library.
- Arrive on Grange Road, directly opposite Robinson College.

Route Planner

Here are two links to good route planners:

The AA: http://www.theaa.com/route-planner/index.jsp
Multimap: http://www.bing.com/mapspreview

The postcode at Robinson College is: CB3 9AN.

Bus / Coach Routes

There is a frequent express bus service between London and Cambridge and a coach service several times a day between Heathrow, Gatwick and Stansted airports and Cambridge. Details can be obtained from National Express: http://www.nationalexpress.com/home.aspx

Bus Services in Cambridge: http://www.cambridgeshire.gov.uk/info/20017/buses

From the bus or train stations

Robinson College can be reached by taxi (10 minutes from the train or bus stations) or a 20-minute walk. Head into the city and aim for Market Square. A map for directions to the College can be found at:

http://www.robinson.cam.ac.uk/contact-us/visiting-robinson/directions#route

By Rail

The fastest trains (the Cambridge Cruiser from King’s Cross) take only 48 minutes. Cross country rail services link Cambridge with the Midlands and the North, via Birmingham. Information can be found at:

http://ojp.nationalrail.co.uk/service/planjourney/search
By Air
Cambridge Airport has some domestic services and facilities for charter flights. Stansted Airport is approximately 40 minutes by road from Cambridge; Gatwick and Heathrow Airports are about 1.5 – 2 hours by road from the College. Buses from all these airports run regularly into the City Centre. Trains run directly to Cambridge from Stansted (35 minutes) and via London from Heathrow and Gatwick.

Taxis
Panther +44 (0) 1223 715715
CamCab +44 (0) 1223 704704
NEW RESEARCHER PAPERS
Regional living standards and inequality in Fifth – Eighth Century Alamannia

Nicholas Meinzer, Eberhard Karls Universität Tübingen
(nicholas.meinzer@uni-tuebingen.de)
Supervisor: Professor Joerg Baten

A new dataset, containing long bone measurements and estimated body heights of more than 2,000 adult individuals as well as information on grave goods deposited with them at the time of their burial, provides insights into inequality and regional differences in living standards in Central Europe during the early middle ages. Inequality, measured as the coefficient of variation of estimated body heights, was higher in latter half of the studied period than in the fifth and sixth centuries, when Alamanni society was not as rigidly stratified. Differences in the biological standard of living in pre-industrial times have been linked to agricultural specialization, especially dairy farming. Since data on agricultural production in the early middle ages is unavailable, this study uses proxies for the relative suitability of the regions around the cemeteries, that are constructed from modern environmental data. Furthermore, the regional distribution of the burial communities’ locations and their integration into the Merovingian kingdom are taken into account using distances to urban centres and accessibility to the Roman road network.

Background - Reihengräberfelder in south-western Germany

The name Alamanni was first mentioned in the early third century, describing Germanic war bands that were defeated at the Roman limes border fortifications (Geuenich 2005, 18). It was, however, not continually mentioned by Roman authors, as many groups of barbarians attacked the Imperial border over the following centuries, or helped defend it in imperial service (Steuer 1998, 274). Tribal war bands doubling as units of the imperial army were officially named after the territory in which they had been recruited – the name Alamanni stuck with those from the region the Romans called Alamannia (Steuer 1998, 276). At the end of the fifth century, the Franks subjugated the Alamanni in several battles against a loosely knit alliance of several Alamanni kingdoms (Geuenich 2005, 82). Towards the end of the first half of the sixth century, a Merovingian dukedom encompassing the Alamannia was established (Drinkwater 2007, 347). In the absence of detailed written sources, archaeological findings provide a general idea of everyday life from the dwellings people lived in to the garments they wore and the food they produced and ate (e.g. Fuchs 1997). The Alamanni lived mostly in small settlements of just a few families and relied on subsistence agriculture.

As in other parts of central Europe on the fringes of the Roman empire, communities in the Alamannia began burying their dead on larger cemeteries, so called Reihengräberfelder, dressing them up and equipping them with armaments, tools, jewellery and other goods (Fehr 2008). In an early attempt to consolidate the phases identified in the excavated early medieval material, Ament (1977) devised a scheme with an ‘earlier Merovingian period’ before the year 600 and a ‘later Merovingian period’ after that.

Measuring inequality

Most measures of inequality are based on data on individual income or wealth which was probably not even documented in detail during the early middle ages. The rare written sources surviving from that period mostly remain silent even with regard to general observations on living standards enjoyed by people of different fortunes. However, income or wealth inequality are arguably not that important in the first place, as well-being is directly related to consumption, not income or even wealth per se. Individual-level data on consumption of goods and services can be literally unearthed with relative ease. Limb bones excavated from
cemeteries allow estimations of individual heights, which can be aggregated and used as a proxy for the biological standard of living of larger populations.

Baten (2000) proposed the coefficient of variation (CV), the ratio of the standard deviation and the mean of a population’s heights, as an indicator for inequality. With modern data on various populations from Africa, Moradi and Baten (2005) demonstrated that resulting measures of inequality correlate with others such as Gini coefficients of income. Recently, Moatsos et al. (2014) used height CVs to augment other inequality measures in order to assess inequality levels for a larger number of countries and time periods.

Data
The main sources of burial data aggregated into the new dataset are publications documenting the analysis of material recovered in archaeological excavations of early medieval row grave cemeteries. While the number of graves excavated in south-western Germany is huge, most of the retrieved material has not yet been analysed scientifically. Apart from height estimates or measurements of individual long limb bones and anthropological age and sex, the database contains information about the burial goods and the graves in general. While cemeteries where no anthropometric data is available are not included, archaeological descriptions of the grave goods are still missing for some of the skeletal series. In all, the database covers 38 cemeteries, shown in figure 1, with more than 6,000 buried individuals of all ages buried with more than 20,000 artefacts.

Figure 1: Sample of early medieval cemeteries

The map shows only the cities with episcopal sees established before 600 CE closest to the cemeteries.

Long bone measurements and estimated stature
Where soil conditions were suitable, some of the bones have not been decomposed but have been excavated in a condition that allowed measuring their length. Whenever possible, estimated body height is calculated directly from long limb bone measurements using Pearson’s method, which arguably yields the most convincing results in the early medieval
material (Siegmund 2010, 103). Otherwise, it is converted by calculating the length of a hypothetical set of long bones and applying Pearson’s method. Due to differences in body proportions, the coefficients of the same bones are different in the estimation formulas for male and female stature.

The regression formulae can only be applied in a meaningful way to long bone measurements who had attained their terminal stature prior to their demise, which restricts the sample to those who were anthropologically determined to adult or older at the time of their death. Estimated heights should not be compared to heights of living populations of varying ages or including elderly people.

Regional data
In nineteenth century southern Germany, young men measured for general military service were taller in rural regions where dairy farming was prevalent than in urban regions or regions where cereal production or potato farming were more important agricultural specializations (Baten 2009). For the early middle ages, data on agricultural production in south-western Germany is not available with the necessary spatial and temporal resolution, in fact even general remarks on agriculture in the region are scarce in the few available sources. Assuming that relative differences in the suitability for cereal or dairy farming between regions, or at least their rank order, are relatively stable over long periods of time, modern data is used to construct standardized variables. Variables from the Global Agro-Ecological Zones (GAEZ) system, provided by the FAO, combine environmental characteristics such as elevation, precipitation, temperatures and others and compress them into a single measure suitability for the cultivation of specific crops (Fischer et al. 2012). Another approach uses natural measures of outcomes, phenological data from Deutscher Wetterdienst, i.e. observations of the time at which lifecycle events of various plants occurred in different years (e.g. Chmielewski 2007).

The phenological indicator for pasture, derived from the time it takes before grass is ready for hay-making, is positively correlated with GAEZ suitability for rain-fed pasture and slightly negatively correlated with suitability for cultivation of cereals. The phenological cereals indicator, however, is only slightly positively correlated with GAEZ suitability indicators for various cereals and slightly negatively correlated with suitability for permanent pasture.

The distance to the next metropolis, the chief city of an ecclesiastical province, and the next city with an episcopal see are used as indicators of the connection between the communities using the Reihengräberfelder and the political core of the kingdom and Merovingian society, where clerics often filled the void left by the collapse of the Roman civil administration. Since the shortest distance between two points is not the distance that has to be traversed in most cases, the shortest route between the location of a cemetery and an episcopal or metropolitan city along Roman roads has been calculated as well, using spatial data from McCormick et al. (2013). The nearest episcopal city on the Roman road network is not the closest as the crow flies in four (different) cases for both types.

Inequality in the early middle ages
The coefficients of variance of heights observed in the sample imply a substantial level of inequality. In a modern setting, the values from the south-western German sample would be associated with Gini indexes of income inequality between 39 and 46, using the coefficients from the preferred regression of van Zanden et al. (2014, Online Data Appendix). As reported in table 1, height inequality (and the corresponding Ginis) was higher for women than for men and increased for both parts of the population from the early phase to the seventh and eighth centuries, though not statistically significantly for women. Removing the individuals archaeologically dated to the last decades of the fifth and first decades of the sixth century from the sample increases the difference between the earlier and the later phase.
The estimated Ginis are of similar size to the levels of wealth inequality observed by Borgerhoff Mulder et al. (2009, 685) in a sample of historical and contemporary small-scale societies. They report wealth Ginis of around 0.42 for agricultural and 0.48 for pastoral societies.

**Regional characteristics and spatial analysis**

The understanding of mobility and migration in the early middle ages is severely restricted by the lack of available evidence. Later in the middle ages, internal migration over long distances was probably as uncommon in central Europe as it was in England, where most rural-rural migration was over distances below 20 miles (McClure 1979). It seems permissible to assume that a majority of the people included in the database were buried in their native region.

Some of the cemeteries are located just a few kilometres apart, close enough to share some features of climate and geography. Spatial autocorrelation on the cemetery level cannot be rejected on conventional significance levels for the indicators of suitability for permanent pasture, the duration of the growing period and general geographical characteristics using Moran’s I. The suitability indicators for cereals show less clear signs of spatial autocorrelation in the sample of small regions around the cemeteries.

Disregarding changes over time and excluding cemeteries with less than 10 individuals with height estimates per sex reduces the sample to 26 places for males and 25 for women. Regressing average male heights in centimetres on the various indicators in a spatial lag model results in statistically significant coefficients of around 0.6 and 0.4 for indicators of suitability for pasture and insignificant coefficients with conflicting signs for the cereal variables. With female heights, the picture is different. Here, suitability for cereal cultivation has positive coefficients between 0.4 and 0.6 that are statistically significant or only marginally insignificant on conventional levels. The indicators for hay and permanent pasture, however, have statistically insignificant coefficients with conflicting signs.

Distance from the political and cultural core of the Frankish empire, as measured with the shortest route to a city with a metropolitan see, has consistently positive coefficients for average male heights and consistently negative coefficients for female heights both on its own and together with the suitability indicators. However, the coefficients are generally not statistically significant on conventional levels.

If people in the early middle ages tended to specialize in dairy farming or agriculture depending on the suitability of their area to those pursuits, the results of the analysis of regional environmental characteristics and the biological standard of living could indicate gender-related dietary differences. Men may have benefited disproportionally from more abundant animal protein.2

<table>
<thead>
<tr>
<th>Table 1: Inequality before and after c.600</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
</tr>
<tr>
<td>CV</td>
</tr>
<tr>
<td>Earlier phase</td>
</tr>
<tr>
<td>Later phase</td>
</tr>
<tr>
<td>Earlier phase (gap)</td>
</tr>
<tr>
<td>Later phase (gap)</td>
</tr>
</tbody>
</table>

p-values in brackets in the t-test columns.
Ginis calculated according to van Zanden et al.’s (2014) method.

1 Spatial analysis in stata has been performed using tools for spatial data analysis by Pisati (2001).
2 A second case study in the project ‘Humans and Resources in the Migration Period and the Early Middle Ages’, on which I am working, is mainly concerned with detecting dietary patterns using stable isotope analyses of human bones from some of the south-western German cemeteries.
Conclusion

Early medieval societies in south-western Germany were characterized by inequality of the biological standard of living on a level corresponding to income inequality observed in contemporary Latin American societies. Wealth inequality of a similar magnitude is typical of small-scale pastoral or agricultural societies that have been studied in the recent past. Inequality as reflection in the coefficient of variance of estimated body heights of men and women is higher in the seventh and eighth centuries than in the preceding centuries, however, the difference is statistically significant only for south-western German men, not for the smaller sample of women.

The characteristic suitability for certain agricultural techniques of the land in small regions surrounding the sampled cemeteries is correlated with average human heights. However, the evidence is conflicting. Men buried in regions more suitable for permanent pasture or hay production seem to have been taller on average whereas women were seemingly taller in regions more suitable for cereal cultivation. Further evidence from stable isotope analysis of skeletal remains may shed more light on these results in the future.

References


Foligno County (Umbria, Central Italy) in the long twelfth century, 1070s-1200: an outline of the economic transition

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Foligno County is a small rural region in Umbria, forming part of the Duchy of Spoleto since the Lombard conquest to the adherence to the Papal States circa 1200. Its population was composed of the indigenous Roman population and assimilated Lombards constituting local aristocracy (2.5 per cent of population). Towards the 1080s, they led the peasant way of life. A few ecclesiastical and aristocratic manors (four or five, with five to ten dependent families in each, under obligation to the royalties and the socage – both of undetermined volume – to their lord) traced to the Lombard or Carolingian époques existed, but free peasants, with their agricultural explorations of five or six hectares comprised of morcellate parcels, dominated in local economic life since the sixth century. In the twelfth century in Foligno County there were around 50 parishes, each containing approximately 20 families (or 5000 souls in total).

The effects of the medieval warm period – higher crops and population growth – accumulated slowly and imperceptibly for 130 years, achieving a bifurcation point in the 1080s. Rapid socioeconomic transformation started: overall growth of production and consumption, migration from the countryside to the city, increasing the commodification of agricultural products and land, as well as social hierarchization among peasants (with subsequent enslavement of their majority); revitalization of archaic little manors; and the emergence of new ones in their image. The result was the ‘feudal revolution’ between 1100 and 1140.

The city of Foligno was the only (at least, partially) non-agricultural and clustered settlement in the county and an arena of rivalry for four equal actors: the bishop, the corporation of cathedral canons, the Monaldeschi family and the abbey of Sassovivo, all located in or around it the city. In consequence, its population had never been subject to any seigneurial power, and had been the unique source of craft goods for the countryside and a unique sales market for food. Its monopolistic character and longstanding concurrence among sellers urged them to lower prices through increasing the exploitation of peasants and creating conditions for the accelerated growth of the urban population, which in the 1200s was already between a third and a half of the rural population.

To acquire a small parcel (0.2–0.5 hectares) and lease it to a neighbour by charter, to conclude a mortgage, obliging the borrower to render a portion of yield from his parcel—between a third and a half of the yield – was a primordial microscopic and non-confictual mechanism of enrichment used by wealthy peasants in the 1080s and 1090s.

In the 1100s, in case of default (true or false) in payment, they began to confiscate mortgage lands through the court under a local judge in the countryside or an imperial one in the city, and to lease it. While 1105 dates the first evidence of land seizure for debts, in 1119, this practice already seems traditional for locals. The first information on the forcible seizure of all yield dates to the same year. A few years later, in 1125, the first evidence of famine in the countryside appears. In the 1110s, the rising wave of land redistribution began to change

3 The little modius (modiolus, abbreviated as l.m.), equal to 2254.08m², was the basic unit of area and parcel size.


5 Between 1100 and 1200, the population of Foligno grew from around 300 souls to approximately 2500.
the political equilibrium: the imperial judge and local judges, whose authority had no material basis, were no longer able to maintain legal order, and the population gradually began to seek justice from those with economic and social power: different ecclesiastical institutions, the comital family or one moneylender against another. The first act of arbitrage dates to 1115, effected by a member of comital family and not by an imperial judge.

The documentation of the 1140s-1150s contains traces of regularization of agrarian territory and final maturation of seigneurial structures: new peasant parcels of unprecedentedly extensive areas – 10 l.m., or 2.2 hectares; previously unknown rectangular demesne fields; special lands for the village poor and widows, etc. This was accompanied by new control over place of burial and burial taxes, delimitation of parish borders, and a new alberga tax in favour of seigneurial sergeants (valvassores). This became a stable framework comprising a well-established range of structures, practices and possible personal trajectories.

The communal regime in Foligno, consuls elected by the city population with power over the countryside installed the 1170s, would entirely rely on their ability to control the peasant population and extract more resources through the newly introduced public taxation. Erection of a new cathedral in 1133-49, consecrated with great pomp, was a clear sign of economic growth in the city, as were the urban expansion in terms of area and the erection of six new parish churches, all during all the twelfth century. Allowing the urban population to have independent self-government – developing from the responsibilities of urban parishes’ ‘advocates’ of around 1100, through the sors civitatis (city quarter) tax units of the 1130s, towards the consuls with power both over city and countryside since the 1170s – seemed to each of the four actors better than open conflict with the remaining three.

Thus, after a certain time, the strategy of food dumping not only stimulated the urban economy to expand, but also impoverished the peasants, reduced purchasing power, reduced demand of urban goods (and thus production), reduced the productivity and natality of the peasants, and affected the profitability of agriculture and grain prices as a whole. Coinciding with the moment of political ascension of the urban elite, interested in the persistence of such an order, in the 1160s-1170s, the economy stabilized in the state of crisis for a long period (almost until the thirteenth century) and transformed the character of urban society from a productive one to one predominantly founded on rentals. The inflation in Italy, caused by the coinage disorder during the Barbarossian wars (1154-83), enhanced this effect.

The communalization of the 1170s did not signify a simple victory of an old-school power group, but a qualitative transformation of the local institutional landscape, a microscopic sort of military-fiscal revolution: delimitation of the county, creation of a political structure (consulate) integrating all its territories under direct control, invention of public taxation, and creation of professional militia.

The nature-caused avalanche of institutional creativity since the 1080s, having transformed the landscape, structures of production and social order, came to a logical end in the 1170s, when the institutions of power and extraction, appeared on its course, had matured enough to stagnate the local economy and to level off the effect of the good natural conjuncture still in force. Preferring stability to growth and creative destruction and unwilling prejudice or prestige (for political reasons), to ease the tax pressure on peasants and to re-equilibrate the market through a necessary decrease in grain production, the elite directed all excess resources to warring with neighbouring cities, city development, war and increasing the number of soldiers and communal officials. After a century (1080s-1170s) of dynamism, the local economy returned to a state of stagnation. The concurrent urban food market as an axial local economic institution had been replaced by the state-run fiscal system of food extraction and redistribution.

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6 The privilege of Emperor Frederic Barbarossa confirming power of the commune of Foligno of 1177 is published in MGH, Diplomata regum, X, 4, Hannoverae, 1990, doc. 1067.
The 2.6 times growth of local land prices between the 1020s and 1070s is indicative of the general economic growth, slow and unnoticed by its beneficiaries, precedent to all qualitative transformations of local society and serving as their trigger. After a slight fall in land prices in the 1080s (by 15 per cent), coinciding with an explosive growth in the number of land transactions, they fluctuated (+25 per cent, 114–156 d.7/l.m.) on approximately the same level (135 d./l.m.) up to the 1170s, when the galloping inflation saw an increase to around 35 per cent (200 d./l.m.). Within a century, two major shifts in land prices coincided exclusively with changes in the ratio of the volume of goods and money supply (the intensification of land transactions in conditions of unchanged number of coins in circulation in the 1080s and uncontrolled coinage in the whole of Italy in the 1170s-1180s), reveals the commercial attitude towards land in local society and thus the direct link between land price and the food market (figure 1).

The wave of pious land donations to the Church rose in the 1070s and peaked in the 1080s. Such an innovation in relations with the Church, a dominant local politico-economic actor, corresponds in a number of ways to a major restructuring of the social order under pressure of economic growth and increasing social differentiation. Large aristocratic donations reflect the growing convergence and empowerment of clergymen and lay aristocrats; microscopic donations of freeholders show the need for ecclesiastical protection or alliance in the increasingly unstable social environment; and the peasant ‘donations’ – charters of self-enslavement – show the new role of the Church as a feudal power. A gradual decrease in the number of donations towards the 1150s, while social life in general intensified, has two concomitant explanations. The redistribution of power, revenues and property in favour of the aristocracy which started in the 1070s/1080s was a finite process, which had slowed down in the approach to a new point of social equilibrium by 1140; later, its disturbance during the Barbarossian wars of the 1160-70s slightly revitalized this practice. Additionally, the outburst of direct aristocratic violence around 1100 diminished the need for any written reflection (figure 2) and simultaneously made this process more intense, the written act covering larger volumes of objects, rights and persons (figure 3).

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7 Abbreviation for the denarius (a silver coin).
The emergence of land tenure contracts around 1100 marked the growing social value of land, social differentiation and so the debut of the feudal revolution. Land lease activity had known three periods by intensity, its increase being directly correlated to the growth of aristocratic puissance and the oppression of peasants. In the 1110s-20s, it was a new and unusual practice, serving as one of the tools (alongside the mortgages) of social differentiation and concordance of interests between aristocrats and peasants, abdicating the property rights on their land in exchange for physical defence (figure 4).
The explosion of documental production in the 1080s (7.6 times more in comparison with the previous decade) was caused by the intensification of inter-peasant transactional activity, both purchases and donations. It reflected the emergence of a little aristocracy from the egalitarian peasantry and an initial market-explainable enrichment of the little aristocracy. However, its ongoing diminution from the 1100s – one decade before the outburst of aristocratic violence, the invention of private taxation and the appearance of land tenure—saw the qualitative transformation of this process into one of enslavement of peasantry and alienation from property rights. In the 1140s, after the final maturation of seigneurial structures, their number fell to under 10 per cent and had been surpassed in number by contracts of tenure. In all later decades towards 1200, the number of land purchases balanced on a level of between four and nine per cent.

Mortgages appeared around the 1080s, simultaneously with the growth of purchase activity, both reflecting the growing commodification of land and intensification of monetary exchanges. They were also an instrument of aristocratic oppression, but always occupied a peripheral place in local economic life. It was always seven to nine times less common than land purchase or tenure, accounting for two to three per cent of all local documents before the 1140s five to eleven per cent after.

In the twelfth century (at least, in 1132-95), the normal effective interest rate of a Foligno agrarian mortgage consisted of one third of yield (designated in texts as *prode ut usus*)
est—‘traditional interest rate’), set either directly or in monetary terms. This reveals not only a high level of commodification of land and its products, but also the existence in local usage of a specific variable: approximate annual monetary income from arable land.

Existence of two mortgages from 1132 and 1195, with all quantitative parameters outlined and expressed in absolute terms, gives way to a deeper understanding of local economic conjuncture and its development (figure 5).

Two derivative variables are required. The first, the coefficient of correlation of approximate annual income and mortgage value (land price), both expressed in money per unit of area (coefficient of profitability), reflects directly the level of profitability of arable land cultivation (where 1 indicates the equality of both variables – i.e. one year payback period, smaller result; longer payback period and thus lower level of profitability). This variable could reflect a fall in grain prices and/or a decline in labour productivity. The second coefficient is that of surplus labour intensity – the correlation of unit of land area, not mentioned in the loan agreement, which must be cultivated to repay the loan, in addition to that pledged as collateral, with the latter, taking into account approximate annual land income, loan principal and effective interest rate (if in money). It is 0 if there is no need to cultivate land other than that pledged as collateral, 1 if an additional parcel of the same area, etc.

The first of the said mortgages is a lease of 240 d secured on 2 l.m. of arable land for one year with an interest rate 4 d/month (1.67 per cent; 20.04 per cent of effective rate). The second saw a lease of the same amount for the same period, secured by a parcel half the size (1 l.m.), the interest rate being 3d/month (1.25 per cent), and the effective rate 15 per cent.

These data reveal several trends. The first two are the fall in the land profitability coefficient of 15 per cent from 0.6 to 0.45 and the augmentation of the surplus labour intensity coefficient of 35.72 per cent from one to 1.556. To repay the lease secured by the same parcel (1 l.m.), one had to cultivate 35.72 per cent more land in 1195 than in 1132: one and 1.5556 l.m. respectively. Both reflect the decline in grain prices and in labour productivity as a result of considerable aggravation of private, ecclesiastical and communal taxation of peasants, the economic and political enslavement (leading to a decline of labour productivity) and the consequent saturation of the food market.

The disproportion in these variables – 35 per cent augmentation of surplus labour intensity and decline of proficiency of only 15 per cent – specifically shows the tendency to overcome the fall in food prices by doubling the enforcement of peasant oppression by the elite. In this regard, the doubling in land prices, from 120 d/l.m. in 1132 to 240 d/l.m. in 1195, could be regarded as a result of three factors: 1) inflation; 2) the passing of property rights on land from labourers to a small and rich elite as a result of political and economic pressure; and 3) inclusion in the land price of its labour, becoming de facto unpaid and forced (due to indebtedness or taxation).
Two tenure contracts allow us to imagine the growth of peasant vulnerability to the aristocratic despotism and the devaluation of peasant labour in the second half of the twelfth century – 17.5 times. In 1149 the price of land under 50 per cent of tax-in-kind was 5 times below market level, while in 1197 it was 2.9 times above (figure 6).

Fig. 6

<table>
<thead>
<tr>
<th>Year</th>
<th>Price of entry into the lease of land (d./l.m.)</th>
<th>Market price of land in this period (d./l.m.)</th>
<th>Bibliographical reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1149</td>
<td>24</td>
<td>150</td>
<td><em>Sassovivo II</em>, doc. 147</td>
</tr>
<tr>
<td>1197</td>
<td>421</td>
<td>200</td>
<td><em>Sassovivo III</em>, doc. 86, p. 263</td>
</tr>
</tbody>
</table>
The Icelandic livestock economy: challenging the traditional narrative

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Supervisor: Dr Chris Callow

Pastoralism was the dominant form of farming in Iceland as conditions did not favour arable farming. Cattle and sheep became the most relied on livestock, whilst the unsuitability of pigs and goats resulted in their scarcity by the eleventh century. After the conversion to Christianity in around 1000AD the eating of horseflesh was relegated to a famine food. The main control on the number of livestock that could be reared was the amount of fodder gathered. The more fodder gathered, especially hay, the more livestock could be kept over winter, though the longer the winter the more hay was required.

A brief history of the Icelandic Church is needed, as this paper utilizes church-charters (máldagar) to question the idea that from the fourteenth century onwards there was a decline in livestock numbers. The introduction of the tithe law in 1097 set church-farms apart from the average Icelandic farm because it gave the churches an additional source of income. The twelfth to thirteenth centuries was a time of disagreement between the Church and the church-owners. The Treaty of Avaldsnes in 1297 concluded that churches with more than 50 per cent ownership of the farm (stadar: benefices) belonged to the Church, while 50 per cent or less ownership (baendakirkjur: farmers’ churches) remained under the control of farm-owners. By the fourteenth century, the Church had extended its control over baendakirkjur, including jurisdiction over the appointment of priests and the disposal of tithes.

In the fifteenth century, Iceland suffered from two outbreaks of plague that affected the whole society including the clergy, and lead to labour shortages. The first outbreak was in 1402-4 and the next 1494-5 (except in the Westfjords). In Iceland, every member of a household was involved in farming on some level. It appears, based on an entry from the early fifteenth century New Annal, only those in monastic houses did not participate in farming activities.

The next major change for the Icelandic Church came in the mid-sixteenth century with the Reformation. Bishops’ tithes were allocated to the Crown in 1556, though the tithes were partially restored to the Church shortly after. The bishoprics were, however, allowed to keep control of their lands. The Reformation altered how church-farms were managed because it reduced their income and meant they had to find other means of supporting themselves. The bishoprics were not dissolved as they were in other countries until a couple of centuries later.

The period c.1200-c.1600 will be examined in the paper, specifically looking at church-farms. This brief account demonstrates that churches in medieval Iceland were not static institutions, but underwent several changes over the centuries that affected the management of these farms.

According to the Icelandic legal texts, churches were required once a year to have an inventory drawn up of their property. As a result, we have evidence of property owned by churches across the country, including church furnishings, livestock and land. There was no set format or standard list of possessions for inclusion in these documents.

A common method of comparing the economy of farms in Iceland is the bovine:caprine ratio based on the zooarchaeological evidence for each species. The relative

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8 Máldagar found in Diplomatarium Islandicum (Copenhagen, 1897-1950).
abundance of cattle and sheep are calculated as a ratio to indicate the consumption pattern of a site. More cattle are suggestive of a milk and beef economy, whereas more sheep bones imply a milk, meat and wool economy.

The máldagar record the number of living animals kept on a church-farm, or the production pattern. Therefore, the consumption and production ratios cannot be directly compared because they are calculated using different evidence. Attempting to compare such different forms of evidence can be misleading. Further, it is not always possible to distinguish male and female members of the same species in the archaeological record. Máláðagar do, in a majority of cases, record the milking and non-milking cattle and sheep, so that desired products can be inferred: more cows and ewes are indicative of a milk economy, males of a meat economy, castrated male cattle of traction work and castrated male sheep (wethers) of a wool economy. In this paper, the ratio based on the máldagar is referred to as the sheep:cattle ratio.

On the whole, most historical research prefers the various genres of sagas than ‘dull’ contracts and charters. The main critique of those scholars utilizing the máldagar is their method of data selection. Þórvaldur Thoroddsen rightly acknowledged that because máldagar mainly relate to large church-farms we cannot discuss smaller farms of various kinds, yet at the same time he neglected to consider smaller church-farms for which there is evidence. Gunnar Karlsson uses the máldagar to illustrate the range of livestock that could be present on church-farms. However, neither goes beyond a limited number of cases and thus restrict their conclusions.

Jón Jóhannesson was typical of the narrative surrounding Icelandic livestock populations, when he postulated that there were more livestock in the thirteenth century than later, but failed to discuss livestock proportions. Þórvaldur states there were more cattle in the thirteenth century based on a confiscation catalogue of properties owned by the wealthy Guðmundur Arason, yet these properties are not representative of Icelandic farming. Recently Benedikt Eyþórsson has argued that there were proportionally more cattle than sheep in Iceland up until the sixteenth and even seventeenth centuries, though a change was underway as sheep numbers increased during these centuries. None of these scholars show how the change in populations affected farming economies. Árni Daniel Júlíusson does examine the changing ratio between the end of the fourteenth century and the fifteenth and sixteenth centuries on a regional basis. The inclusion of fifteenth century data is liable to skew the ratios because of the effects of the plague and hard years experienced in this century. He also appears to equate the ratio from the máldagar with the zooarchaeological ratio, which as mentioned above is problematic. Generally, the máldagar have been used to mine information about a particular church-farm or wealthier, better known church-farms. This paper advances discussions of farming practices by including all church-farms, regardless of wealth, where evidence is available.

In addition, it is assumed that livestock owned by bændakirkjur were kept together with livestock owned by the secular part of the farm and so managed in the same way. The difference in ownership between stáðir and bændakirkjur means livestock populations cannot

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12 Archaeology can differentiate the age at death of cattle, creating age profiles that indicate desired products: higher mortality rates for infants and older animals, which are past their prime, suggest a milk economy, whilst higher mortality rates for animals in their prime indicate a meat economy.
17 *Diplomatarium Islandicum* 4 (Copenhagen, 1897), pp.684-90.
be compared on an equal standing. The issue is overcome by estimating the total livestock for farms on which bændakirkjur were situated, to give the potential herd sizes for entire farms.\textsuperscript{20} From this, a comparison of total herd populations can be made that considers the proportions of a herd, not just herd size (table 1).

Four máldagar collections (máldagabækur) are known for the fourteenth century, permitting detailed comparisons about livestock farming. Hólar, the northern diocese, has three collections (1318, 1360, and 1394). Skálholt, the southern diocese, has one complete collection (1397) that encompasses the Eastern, Southern and Western quarters.\textsuperscript{21} These máldagabækur indicate that the average number of cows and cattle on church-farms remained constant in the Hólar diocese until 1394 when there was an increase. Although there was an increase in the total number of animals reared, the proportion of milking to non-milking and the sheep:cattle ratio were unaffected by the increase in overall numbers indicating that farming practices were stable. The timing would suggest that, generally, conditions during the fourteenth century allowed the expansion of livestock herds owned by church-farms, and possibly more so towards the end of the century.

Table 1: Average and total numbers of cattle and sheep in máldagabækur (rounded to whole numbers) corrected for ownership

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of farms surveyed</th>
<th>Mean. no. of cows</th>
<th>Total no. of cows</th>
<th>Mean. no. of cattle</th>
<th>Total cattle</th>
<th>per cent of milking to non-milking</th>
<th>Mean. no. of ewes</th>
<th>Total no. ewes</th>
<th>Mean. no. of sheep</th>
<th>Total sheep</th>
<th>% of milking to non-milking</th>
<th>Sheep: Cattle ratio</th>
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<tbody>
<tr>
<td>1318 Hólar</td>
<td>35</td>
<td>10</td>
<td>415</td>
<td>12</td>
<td>481</td>
<td>83.3</td>
<td>26</td>
<td>1076</td>
<td>38</td>
<td>1323</td>
<td>68.4</td>
<td>2.6</td>
</tr>
<tr>
<td>1360 Hólar</td>
<td>22</td>
<td>11</td>
<td>237</td>
<td>11</td>
<td>248</td>
<td>100</td>
<td>36</td>
<td>797</td>
<td>46</td>
<td>939</td>
<td>78.2</td>
<td>3.7</td>
</tr>
<tr>
<td>1394 Hólar</td>
<td>44</td>
<td>13</td>
<td>569</td>
<td>15</td>
<td>681</td>
<td>86.7</td>
<td>53</td>
<td>2326</td>
<td>56</td>
<td>2477</td>
<td>94.6</td>
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<tr>
<td>1397 Skálholt</td>
<td>102</td>
<td>15</td>
<td>1489</td>
<td>19</td>
<td>1919</td>
<td>78.9</td>
<td>51</td>
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</tbody>
</table>

A comparison of the sheep:cattle ratio at the close of the fourteenth century shows that farming strategies were similar in both dioceses, but that church-farms in the Hólar diocese kept on average more animals. Comparing milking to non-milking stock reveals that cows formed the majority of the cattle herds throughout the fourteenth century. In comparison, the average number of ewes and sheep increased during the century except in 1360. The sheep:cattle ratio reveals a similarity in farming strategies across Iceland in the second half of the century. Generally the proportion of sheep did increase during the fourteenth century, and this is due to an increase in non-milking sheep. Proportionally more non-milking sheep implies a wool economy.

These figures show that herd sizes were expanding on church-farms in the Hólar diocese in the fourteenth century, with only the mean number of cattle in 1360 not following the trend. There was also a move towards milking livestock, especially with sheep during the century. The diocese of Skálholt had, on average, larger herds except for ewes, yet there was a higher proportion of non-milking stock recorded, in comparison to the Hólar diocese in 1394. The sheep:cattle ratio was approximately the same for the bishoprics in 1360, 1394 and 1397 revealing a general agreement across the country in the relative numbers of sheep and cattle, though the herd sizes varied.

\textsuperscript{20} Estimates for total livestock were calculated by multiplying the percentage of ownership to equal 100%, for example 50% multiplied by two, 33% by three and 25% by four. The method is not exact, but gives an approximation.

\textsuperscript{21} The Western quarter is divided into the West and the Westfjords because of landscape difference.
The traditional narrative of decline in Icelandic farming after submitting to the Norwegian Crown can be challenged, because on the church-farms at least, herd sizes were expanding though the farm economies were remaining relatively consistent through the century.

The eleventh to thirteenth centuries were a time of establishment for the Church in Iceland. Land and other forms of donations were received to found churches on farms, and this process continued in the following centuries. Therefore it is logical to assume that the number of livestock on these church-farms would have been relatively small whilst the church-farms were established, and then increased as the churches expanded with further donations. In contrast, at the turn of the fifteenth century, there were many hard years recorded in Iceland that resulted in the death of both people and livestock. These máldagar list livestock when church-farms, and farms in general, were coping with the difficulties of these hard years.22

Table 2: Changes in livestock populations on church-farms in the years before 1318 and the 16th century

<table>
<thead>
<tr>
<th>Region</th>
<th>Pre 1318</th>
<th>Sixteenth century</th>
<th>Difference in ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ratio</td>
<td>Range</td>
<td>Variation</td>
</tr>
<tr>
<td>Westfjords</td>
<td>6</td>
<td>4.5</td>
<td>0.5-16</td>
</tr>
<tr>
<td></td>
<td>5.6</td>
<td>1.3-10.9</td>
<td>9.6</td>
</tr>
<tr>
<td>West</td>
<td>12.2</td>
<td>3-65</td>
<td>62</td>
</tr>
<tr>
<td>South</td>
<td>2.7</td>
<td>2-10</td>
<td>3.8</td>
</tr>
<tr>
<td>East</td>
<td>6.0</td>
<td>6-6</td>
<td>0</td>
</tr>
<tr>
<td>North</td>
<td>8.2</td>
<td>0.5-65</td>
<td>64.5</td>
</tr>
</tbody>
</table>

A comparison of livestock populations across the regions (table 2) demonstrates that church-farms in the Westfjords and the South mostly increased their cattle and sheep populations. The West is distinguished by having more decreases in cattle and sheep numbers than increases, and the difference was greater in sheep than cattle. The West was not changing farming economies, but suffered an overall decrease in livestock. The scarcity of máldagar and the length of time between charters make it difficult to discern influencing factors. The proposed origin of the plagues in the west or southwest may have contributed to the reduction of livestock in the West.23 The absence of earlier máldagar for the North and East is regrettable because we are unable to discover whether the West was unique in the extent of livestock reductions.

Across Iceland the sixteenth century was a time of greater variability in farming practices compared to the eleventh to early fourteenth centuries (table 3). The West, again, is shown to have undergone the most drastic changes in farming in the intervening years. The South and Westfjords increased their sheep numbers though their landscapes are quite different. Greater variation is due to a diversity of methods employed so that no uniform pattern of farming emerges, even within the same region, in the sixteenth century.

Table 3: Changes in the sheep:cattle ratio for the years before 1318 and the 16th century

Contrary to the traditional narrative of declining numbers of livestock after the Commonwealth period, the máldagar show that there were increases in cattle and sheep herds on church-farms in the fourteenth century. The farms’ economies as indicated by the sheep:cattle ratio were stable, especially in the latter half of the century.

When farming is viewed over centuries, Iceland was moving towards a more sheep dominated economy, possibly in response to the foreign demand for woollen items making sheep more profitable than cattle. On a regional basis, the West (excluding the Westfjords) underwent the greatest change in practices. The East and North had the smallest change in the relative numbers of sheep and cattle, possibly due to the scarcity of evidence for these quarters, limiting any conclusions for change in the period c.1200-1600.

From the evidence discussed in this paper, there was not a decline in livestock numbers on farms in Iceland, at least not on church-farms. The effects of the plague and hard years are not visible. Neither does the Reformation appear to have had an immediate effect on the livestock economies of church-farms. The church-farms of the West are unusual because they show an overall decrease in livestock in the fourteenth century and a clear move towards sheep farming by the sixteenth century. The plague and Reformation affected the entire country, thus it appears that there were regional factors at work. In contrast, the South and Westfjords increased their herds, but favouring sheep farming over cattle farming, indicating adaptation was underway, not decline.

Utilizing the máldagar to include all church-farms possible, demonstrates that a re-evaluation is needed of the pattern of establishment, abundance and decline through Icelandic farming history. Church-farms are unrepresentative of average Icelandic farms, in part because they had rights to tithes. Therefore, discussions about changes in farming should take into account the differences in the farm type as well as regionality.
Little is known about living standards in the French colonies during the eighteenth century. A similar problem exists for Canada prior to the nineteenth century. This paper capitalizes on a new dataset of prices and wages collected from the account books of religious congregations to link with censuses of the French colony of Quebec from 1688 to 1760 to solve both issues. As a result, we can evaluate economic growth in French Canada as well as compare with the American colonies to the south, the mother country of France and Great Britain. Using the standardized real wages approach expressed as welfare ratios (Allen 2001; Allen et al. 2012) to a basket of goods, we find that there was very little growth between 1688 and 1760. At the bare bones level (poor diet, few luxuries and few manufactured goods), the French colonists in the New World were slightly richer than their counterparts in France. They were poorer than the British inhabitants (using southern England wages) and considerably poorer than the American colonists. Switching to a more respectable basket of goods, the gap with England and the American colonies widens considerably while the advantage relative to France vanishes to be transformed into a small negative gap.

Using the censuses of the colony in combination with the newly collected price data to re-compute a more robust version of Altman’s (1988) attempt to create a GDP series for Quebec between 1688 and circa 1762, we confirm that there was no economic growth in the long-run. However, we also find that the use of income measurements transformed into welfare ratios shows that the gap between the French colonists and all the other regions studied is wider than the real wages suggest. This is mostly due to differences in the length of the work year. Overall, the French colonists were the poorest in North America – by a significant margin. Moreover, unlike the other colonists in the New World, they were not appreciably richer than their counterparts in the Old World at the bare bones level and roughly equal at the respectable levels.

What were average incomes like in eighteenth century Canada? What were average incomes like in French colonies in the eighteenth? Was Canada richer or poorer than the American colonies? Was there economic growth before the conquest of Canada by the British? These questions have received scant attention.

This paper seeks to contribute the first answers to these questions by using a two-prong approach that develops real wages series and a measurement of GDP for the main French colony in North America during the eighteenth century: the modern-day province of Quebec. Relying on account books from religious congregations with important rural land estates, a vast database of rural prices and wages was collected for the period spanning from 1688 to 1760. These allow us to create welfare ratios (as seen in Allen 2001) at both the ‘bare bones’ and ‘respectable levels’. Combined with the numerous censuses undertaken in the colony, these prices allow us to generate a reliable estimate of Gross Domestic Product in the colony prior to 1760.

With the ‘bare bones’ welfare ratios, the inhabitants of the French colony of Quebec were poorer than the Americans and British, but roughly richer than the inhabitants of France. With the ‘respectable’ welfare ratios, the gap with the Americans and British colonies widens and the advantage over France evaporates. Using the GDP measurements, we find that the gap relative to the American colonies remains sensibly the same but that it widens relative to Britain (comparisons with France with regards to GDP were not possible), probably as a result of shorter work years in Canada. With all three measures, there is no long-term economic growth in Canada prior to 1760.
The state of knowledge about Canada and French colonies

The debate about divergence in living standards has focused prominently on the Americas and concentrated on the fact that the Southern part of the continent was appreciably poorer than the Northern part. Yet, it is problematic to speak of North America as a whole, since Canada and the United States are very different areas, especially in terms of institutions during the colonial era. Until the mid-eighteenth century, Canada was largely French, and it would remain predominantly French well into the first decades of the nineteenth century. The colonial institutions implemented by the French, which the British largely maintained past 1760, are markedly different from those in the American colonies. In addition, Canada has generally been poorer than the United States. In fact, it is relatively poorer now than its neighbour to the south. In 1870, a few years after the birth of the Canadian federation, living standards in Canada were equal to 59 per cent of what was observed in the United States. In 1900, they had risen to 67 per cent. At that time, Canada was actually nearly on par with Latin American countries. For example, Argentina had a 9 per cent gap relative to Canada in 1870. By 1900, the gap between Argentina and Canada had completely disappeared – both countries were equally rich (Altman 2003). There is a clear need to divorce Canada from the United States when speaking of North America in order to know when Canada began to be poorer than the Americans colonies and what was its standing to Latin America prior to the nineteenth century.

However, little is known about living standards in Canada. Most of what is said hinges on very limited data (Egnal 1996; 1998) and what little quantitative evidence is calibrated to measure the trend of living standards over short periods of time (Altman 1988) rather than comparisons over wide regions. This generates an additional problem related to the issue of regime change. The significance of the conquest of Canada by the British in 1760 is one of the most debated issues in Canadian history (Fyson 2012:192). In the absence of quantitative data, a resolution to this debate eludes Canadian historians.

New data

To solve the issue, information about prices and wages must be collected from accounts books contained in the archives of religious congregations. Religious congregations are an auspicious source of information for the eighteenth century since they owned vast land estates throughout the colony. At one point, 25 per cent of all conceded land in the colony was owned by religious congregations with 34 per cent of the population living on these estates (Jaenen 1976: 71). Two congregations were singled out: the Séminaire and the Ursulines. While both had their headquarters in Québec City, their estates were found in the hinterland. The Séminaire had numerous estates in the hinterland east of Quebec City and one important estate on the Île-Jésus, north of Montreal. The Ursulines on its part had important farm estates on the south shore (Sainte-Croix) and west (Portneuf) of Québec City. As a result, we are not capturing urban prices, but rather prices in the hinterland where the vast majority of the population lived. The information is mostly rural. This is quite important. Although the demographic data suggests that the cities of Québec, Montréal and Trois-Rivières comprised roughly one-fifth of the population of the colony throughout the era, the vast majority of the economy was centred around agriculture (Altman 1988). As a result, 1,119 separate wage observations were collected. Of those, 584 are observations about daily wages, the vast majority of which relate to farming by unskilled workers on the rural estates of the two religious congregations. Comparisons of these prices with those obtained from colonial administration documents detailing urban wages confirm that the wages I collected were for rural areas. Only eight years had missing observations for unskilled workers’ wages.

With regards to prices, these were collected for more than 100 commodities over the period from 1688 to 1760. Most of those needed for the creation of baskets to construct
welfare ratios did not require any interpolation or had fewer than 6 missing data points with the exception of cloth and soap. Comparisons of these

**Welfare ratios with real wages**

The construction of welfare ratios for North America, especially for Canada, requires some modification to the common assumptions about the basket. Given the harshness of Canadian winters, the assumption of 2 MBTU of fuel per person in the bare bones basket was seen as largely insufficient. Contemporary figures for the era place this closer to 20 MBTU in Canada and New England (Cole 1970; Moussette 1983: 37). With regards to the ‘respectable’ basket, the figure is closer to 30 MBTU per person (Mousette 1983: 35). The second change is that we cannot use bread prices. These were subjected to price controls and no reliable solution was found to correct wheat or flour prices to reflect this. As a result, we included a greater proportion of wheat which accounts for losses during production. All other comparisons will use the same assumption.

Figure 1 illustrates the evolution of welfare ratios for unskilled workers at both the respectable and bare bones levels. What is clear is that there are no long-term improvements in living standards over time. This absence of growth prior to the conquest of Canada is the first main takeaway from this paper.

With regards to comparisons, we relied on agricultural wages and prices for England (Clark 2005; Allen 2001; Allen et al. 2012), Paris, Strasbourg (Hanauer 1878; Allen 2001), Philadelphia (Nash 1979; Allen et al. 2012) and Boston (Main 1994). The results can be observed in table 1 below. At the bare bones level, the colonists in Quebec enjoyed similar living standards to those in England and were richer than those in Paris and Strasbourg. However, the bare bones basket may be ill-suited for comparisons of a frontier (land-abundant) economy like Quebec with a labour-abundant economy (like France or England). The bare bones basket would be better suited to compare the different colonies. When we compare with the American colonies, a significant disadvantage appears. To better compare with the European economies, the respectable basket (which includes more capital-intensive goods) is a better option. In that case, the advantage enjoyed relative to France and England vanishes and the gap with the American colonies widens. Overall, it seems clear that within North America there was divergence and that the advantage enjoyed by colonies relative to their mother countries (Allen et al. 2012) did not seem to exist between France and its main North American colony.

Finally, as table 2 indicates, the gap observed between Quebec and the other American colonies seems to be in the same waters as those observed between the American colonies and the Spanish colonies of South America.

**Figure 1: Welfare ratios for unskilled workers (bare bones and respectable)**
Table 1: *Quebec’s relative standing (as % of other area) to Paris, Strasbourg, England and the American Colonies*

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Paris</th>
<th>Strasbourg</th>
<th>England</th>
<th>Boston</th>
<th>Philadelphia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare bones</td>
<td>116.8%</td>
<td>97.9% to 122.3%</td>
<td>96.4%</td>
<td>72.8%</td>
<td>56.8%</td>
</tr>
<tr>
<td>Respectable</td>
<td>98.8%</td>
<td>90.3% to 112.9%</td>
<td>90.9%</td>
<td>65.8%</td>
<td>48.7%</td>
</tr>
</tbody>
</table>

Table 2: *Living Standards in Latin America and Quebec compared to Boston*

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston relative to Potosi (Allen et al. 2012)</td>
<td>45.4%</td>
</tr>
<tr>
<td>Boston relative to Rural Mexico (Allen et al. 2012)</td>
<td>49.9%</td>
</tr>
<tr>
<td>Boston relative to Bogota (Allen et al. 2012)</td>
<td>54.1%</td>
</tr>
<tr>
<td>Boston relative to New France (this paper)</td>
<td>72.7%</td>
</tr>
<tr>
<td>Boston relative to Urban Mexico (Allen et al. 2012)</td>
<td>84.7%</td>
</tr>
</tbody>
</table>

**Real GDP**

Welfare ratios are a necessary but insufficient tool to properly compare living standards. The main reason for this is that welfare ratios rely on the assumption that 250 days of work are provided each year. Given the harshness of the Canadian winters relative to other countries, the work year in Canada would have been shorter. During winters, activity would slow down tremendously. In comparison, European economies had longer seasons.

This is a major limitation of welfare ratios. However, this can be resolved by creating a measure of output. Hopefully, there was already a paper on the issue produced by Morris Altman (1988) which used a volume index (with fixed prices) approach to find very little growth. This was heavily criticized by Desbarats (1992) and other scholars who have been skeptical of Altman’s measurements. We addressed the existing criticisms, modified the calculations methods and extend Altman’s calculations to circa 1762. In addressing these we show that Altman’s general trend was correct and, by addressing the existing criticisms, we can use GDP measurements to compare with the new conjectural estimates of economic growth in the United States provided by Lindert and Williamson (2015). Overall, there is no long-term growth as can be seen in figure 2. In figure 3, we compare our estimates of income per capita (standardized through the baskets described above) to measure real income with those provided by Lindert and Williamson for England and the American colonies. We see that the conclusion that Québec was poorer than the American colonies does not change (nor does the amplitude). However, we see that the length of the work year does change the position of England relative to the New World economies.
Figure 2: *Real income per capita according to different calculation methods*

![Graph showing real income per capita](image)

Figure 3: *Comparing incomes (current) in bare bones welfare ratios*

![Graph showing incomes comparison](image)

**Conclusion**

The new data presented not only provides the first historical portrait of living standards in Canada prior to the nineteenth century, it also provides the first embedment of Canada in the measurement of living standards during the colonial era. I show that within North America, Canada diverged significantly from the American colonies to its south. It was not significantly richer than its mother country of the epoch – France – which is not the case between England and its colonies. I also find that there was no growth in Canada prior to the conquest of
Canada in 1760. All of these results hold regardless of whether we use bare bones welfare ratios, respectable welfare ratios or measures of GDP (with the exception that when we use GDP per capita, Canada is poorer than England because of differences in the length of the work year). Overall, this is the first step in a long agenda to provide measurement of living standards in Canada prior to Confederation and integrate Canada in the literature on the colonial origins of divergence.

References

Consumption, credit, and the standard of living: The case study of a Derbyshire lead miner, c.1789-91

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Supervisor: Professor Naomi Tadmor

On 20 February 1790 the free miner John Naylor of Sheldon, Derbyshire: “discovered some ore at Maypit west forefield ...”. This discovery triggered a major turnaround in his financial fortunes, following a year dominated by illness and unprofitable work at the small mine he possessed, in accordance with the free mining customs of the Derbyshire peaks.24 On 1 January 1790 Naylor wrote in his diary that from the preceding October he “began to feel very bad of a cold and have been very ill for a great part of ye time since ...” even by January 1790 he had only “... began to do some little work about the home ... “, alongside the occasional venture out to “regulate the hillock” at Horsestep Mine near Sheldon.25 Throughout 1789 Naylor was also struggling under the burden of mounting debt (see table 1). By December, he had accumulated £25 4s. 4d. of debt owed to various local vendors, miners and landowners, which was primarily a result of his reliance on credit for domestic consumption of goods, mainly groceries, candles, coal and wood.26 However, despite these challenges, Naylor made a remarkable recovery following the discovery of the new vein of ore in 1790. It beckoned a period of high mineral yields (see table 2), the expansion of his mining, and the repayment of his debts, so that by January 1791 he ‘stood even’ with the majority of his debtors.

This dramatic turnaround in financial fortunes experienced by Naylor encapsulates, in a personal way, the unpredictable nature of economic life in the late eighteenth century. Many historians who have studied the economic lives of workers during this period have relied upon indicators such as real wages and commodity prices to measure broad trends in the standard of living.27 However, the case of Naylor suggests that such indicators, though useful for analysing trends over time, are limited in their application to the everyday lived experience of a worker such as him.28 The patterns highlighted apply to workers in receipt of a regular wage, and of those only the occupations for which wage data has survived are directly accounted. The experience of independent or semi-independent artisans, small craftsmen, weavers and other domestic labourers, who were not in receipt of regular wages would hardly be captured, nor would agricultural and unskilled industrial labourers whose earnings can at best be described as sporadic. As an independent free miner John Naylor’s case provides an opportunity to explore a poorly documented strata of eighteenth-century society and by covering 1,109 consecutive days and over 500 commodity purchases between 1789 and 1792, his diary also provides a unique level of detail pertaining to household financial management. Data extracted from the diary highlight the role of credit in stabilizing and regulating patterns...

of consumption despite work fluctuations, which characterized independent and unskilled labour during the early modern period. The findings also draw attention to the relationship between the household economy and its wider community setting and reveal the importance of cultivating a reputation for credit worthiness and positive engagement within the community, which could provide a vital safety net during intermittent periods of illness, unemployment or financial strain.

This paper will begin by exploring the credit network with which Naylor was engaged and show how his position within the community influenced his ability to access credit. It will then show the extent and impact of Naylor’s credit using the consumption data recorded in the diary.

**Table 1: Naylor’s debts in December 1789**

<table>
<thead>
<tr>
<th>Names of Debtors</th>
<th>Amount indebted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaron Joel</td>
<td>£1. 15. 0</td>
</tr>
<tr>
<td>Wm Gregory</td>
<td>£4. 0. 0</td>
</tr>
<tr>
<td>Mr R: Needham</td>
<td>£0. 12. 6</td>
</tr>
<tr>
<td>Wm Skidmore</td>
<td>£2. 1. 7</td>
</tr>
<tr>
<td>Wm Bagshawe</td>
<td>£0. 15. 6</td>
</tr>
<tr>
<td>Rich Brushfield</td>
<td>£0. 10. 6</td>
</tr>
<tr>
<td>Henry Naylor</td>
<td>£2. 2. 0</td>
</tr>
<tr>
<td>Wm Bonsall</td>
<td>£0. 9. 0</td>
</tr>
<tr>
<td>B. B.</td>
<td>£0. 9. 9</td>
</tr>
<tr>
<td>Thomas Needham</td>
<td>£0. 18. 2</td>
</tr>
<tr>
<td>Mr Roberts</td>
<td>£4. 0. 8</td>
</tr>
<tr>
<td>Mr Woodruff</td>
<td>£3. 6. 1</td>
</tr>
<tr>
<td>A. G.</td>
<td>£3. 3. 0</td>
</tr>
<tr>
<td>J. W.</td>
<td>£1. 8. 0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£25. 4. 4</strong></td>
</tr>
</tbody>
</table>

**Table 2: Output of Naylor’s mine**

<table>
<thead>
<tr>
<th>Date</th>
<th>Loads of Ore</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 February 1789</td>
<td>5</td>
</tr>
<tr>
<td>8 June 1789</td>
<td>4</td>
</tr>
<tr>
<td>22 August 1789</td>
<td>5</td>
</tr>
<tr>
<td>2 October 1789</td>
<td>4</td>
</tr>
<tr>
<td>30 April 1790</td>
<td>24</td>
</tr>
<tr>
<td>31 May 1790</td>
<td>9</td>
</tr>
<tr>
<td>28 September 1790</td>
<td>18</td>
</tr>
<tr>
<td>1 January 1791</td>
<td>15</td>
</tr>
<tr>
<td>11 June 1791</td>
<td>22</td>
</tr>
</tbody>
</table>

II

The local community network with which John Naylor was engaged can be reconstructed using references made in his diary. Map 1 shows the locality in which he operated and the pattern of his visits. The area covered extends 8.6 miles from East to West and 8.4 miles North to South. The focal points of Naylor’s network were the villages of Ashford and Sheldon. Naylor lived and worked in Sheldon, but conducted the majority of his business in Ashford. The other settlements mentioned are primarily places where he found alternative employment, doing agricultural work mainly to the South and West of his home, and seeking mining opportunities predominantly to the North. The village of Chelmorton, the birth place of his wife (Anne Percival), was an important familial hub and was frequently visited by Naylor’s children, if not by Naylor himself. The largest settlement in the area was the town of Bakewell, however, despite its size and many amenities, it did not feature prominently in Naylor’s life. He went there on few occasions only, once “to buy rope” and another, with two

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29 See Muldrew, (1998) on early modern credit, and Muldrew (2011) on consumption, diet and the ‘industrious revolution’. However, credit is not considered in relation to the standard of living and the irregularity of earnings.

30 DRO: D7812/1; DRO: D2154/1
fellow miners, to deal with mining work. Instead, Naylor conducted most of his business from the smaller village of Ashford. It was there that he purchased the majority of his goods, paid his rent on ‘rent day’, repaired his tools, attended the ‘Barmoot Court’ and spent most of his time and money. In each of the settlements visited, Naylor gathered contacts, nurtured relationships and built up a reputation, which allowed him to access credit and work opportunities, and maintain his household’s living standards.

\[\text{Map 1: Settlement references made in Naylor’s diary. Key:} \]

The importance of Naylor’s network, therefore, did not depend on the type of settlements, be they urban or rural, but the people who inhabited them. It is the personal and reciprocal relationships that Naylor forged with these people that explain how he was able to access credit and sustain such high levels of debt (see table 1). Of his £25 4s. 4d. debt, over half was owed by Naylor to residents of Ashford, while the rest was evenly spread amongst the residents of the remaining settlements. The ability to accumulate such a high level of personal debt suggests that, prior to 1789, Naylor had already garnered a reputation for trustworthiness amongst his creditors, for these creditors were not faceless institutions or usurers, but rather regular acquaintances, friends, family and local shopkeepers, who would have known both Naylor and his other creditors personally. Moreover, Naylor’s desire to

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31 DRO: D7812/1.
34 Tadmor (1996) highlights the importance of family and friends in personal trade and credit networks.
maintain his reputation is confirmed by his actions immediately following the windfall of April 1790 (table 2). On 2 June 1790 he was “at Taddington, settl’d accounts with William Roberts and stand even”; the next day he was “at Ashford paid Rich: Brushfield bill”, and on the 23 June 1790 he “paid Wm Skidmore £3 3s 3d” for his grocery bills. By the autumn of 1790, he ‘stood even’ on the majority of his debts.

Naylor’s ability to sustain such a large amount of debt was facilitated by his age and position within the local lead mining community. By 1789 he was likely in his late fifties or early sixties, and was a seasoned miner and small-scale employer. This meant that he had several advantages, financial and social, that a younger man, a recent migrant or a woman would not have enjoyed.35 His regular attendance of ‘the Barmoot Court in Ashford’ is particularly indicative of his social position. The Barmote courts were judicial bodies responsible for upholding the customs that governed mining activity in North Derbyshire.36 There were several courts spread across the lead mining region of Derbyshire during the eighteenth century, each included a judicial officer called ‘the Barmaster’ and a Grand Jury of twenty-four experienced and influential miners from the area, who deliberated customary disputes and provided expertise on mining practices. In 1789-91 Naylor visited the ‘Ashford Barmoot Court’ six times, which combined with his advanced age, suggests that he was a member of the Grand Jury. This position must have offered Naylor an array of useful contacts, both enhancing and reflecting his reputation within the community.

The case of John Naylor reveals, in intimate detail, the role of community networks in the household economy. It shows how reputation and community integration granted Naylor extra protection during periods of financial difficulty, and how the household and local economy operated in tangent via the vehicle of credit ‘between known and trusted individuals’.37 What remains for us to see is how the use of credit translated into household consumption patterns, and to what extent it could impact a household’s standard of living during the late eighteenth century.

III

John Naylor’s monthly shopping lists reveal that his household enjoyed what might be termed, a standard eighteenth-century diet, composed predominantly of “bread, cheese, peas, meat, beer, and vegetables”.38 Meat was consumed intermittently, and in relatively large quantities in 1790-1, when Naylor’s income increased. Bread provided the overwhelming majority of the calorific intake and constituted a similarly substantial portion of the overall expenditure bills. Coal and candle expenditure was also included in his shopping lists and both were noticeably large items of expenditure (see figure 1). However, the lists do not include records of expenditure on other commodities such as utensils, clothes, paper and furniture, and conversely include goods such as powder and wooden beams, intended for the mine. Even so, the range and pattern of the purchases during this period are consistent with those described in the literature on eighteenth-century consumerism.39 During this period 80 per cent of Naylor’s expenditure was dedicated to food, while his expenditure on other goods remained stable and comparatively inelastic. The types of goods he purchases and the proportions he assigns to each are, therefore, indicative of broader trends in consumption.40

40 Thirsk (2007); De Vries, (2008)
Figure 2 compares Naylor’s overall expenditure and income 1789-92. The graph shows that throughout the period, Naylor’s expenditure on household goods increased, although this increase was not proportional to the improvement in his earnings. In 1789 he excavated £45 of ore and spent £15; in 1790 he excavated £120 and spent £20, and in 1791 he excavated £85 and spent £19. Therefore, although Naylor’s income increased by 166 per cent 1789-90, his household expenditure only increased by 33 per cent. That said, his expenditure on food was elastic, increasing by 40 per cent over the period. Figure 2 also shows that the dates Naylor received his income do not align with his peaks of expenditure. More often than not the peaks in expenditure pre-empted income receipts, rather than triggered them.

Both these observations can be explained by Naylor’s use of credit. First, he was able to regularize his expenditure despite income fluctuations by utilizing credit, which allowed him to purchase household goods with no upfront payment: overcoming both the inconsistency and frequent delays in income receipt and the local scarcity of currency. Second, the lead’s measuring date can be considered as the mining equivalent of the harvest, as it was an income event rather than a regular wage. By using credit Naylor was able, therefore, to adapt to his unpredictable income, based upon variable output, and could regularize his expenditure accordingly.

Figure 2 also shows that although the cumulative increase in household expenditure was gradual, the monthly patterns of expenditure were volatile, with peaks in months such as September 1789 and April 1790 and troughs in December 1789 and October 1791. These peaks and troughs followed one another, which suggests that Naylor was bulk-purchasing goods and then consuming them over the course of the following month. This expenditure pattern was largely determined by the purchase of goods such as oatmeal, flour, coal and candles when prices were good. Figures 2 and 3 emphasize this point comparing Naylor’s expenditure on two goods: flour and oatmeal. Figure 2 shows that during the diary period Naylor went from purchasing predominantly oatmeal to predominantly flour. Figure 3 suggests that this change was due to the relative price: when the price was cheap (figure 3, August 1790 and December 1791) he mirrored the change with his purchases (figure 2).

The ability to control his expenditure in this way demonstrates the importance of credit in determining Naylor’s consumption patterns. Were he reliant solely upon his monetary income, he would have been at the mercy of the market and forced to purchase goods not when their price was suitable, but when he had money. However, thanks to the use of credit, he was able to manage his expenditure on a daily and monthly basis and purchase goods when their price was favourable. As a result, he maintained comparatively stable consumption and expenditure patterns in the face of unpredictable income.

---

To conclude, the case study of John Naylor has highlighted a number of aspects of eighteenth century economic life. It has revealed how a worker such as he both accessed and used credit to manage household finance. Naylor worked hard to establish a reputation for creditworthiness and financial aptitude within the community, which helped him access credit and afforded greater financial security for his household in an unpredictable world. Furthermore, this debt was not a result of conspicuous consumption or mortgage-debt, rather,
it arose predominantly from the purchase of food from local vendors.\textsuperscript{43} Naylor was able to use credit to regularize his consumption despite the volatile nature of his income; he could bulk-purchase goods when cheap and achieve a consistent standard of living that was not solely reliant upon his monetary earnings. Based upon these observations it is argued here that the role of credit in the standard of living debate must be addressed. The narrow focus upon wages and food prices, which characterizes the debate so far, does not take account of the use of credit as an intricate tool for managing household finance and that the use of credit was not solely a by-product of a proliferating consumption of luxury goods, but a vital method of acquiring the essentials of everyday life.

\textsuperscript{43} For eighteenth century approaches to conspicuous consumption, see: Vickery (2006), pp. 12 – 38; Styles (2007).
A composite perspective on British living standards during the industrial revolution

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Few topics in economic history have received more attention than the profound transformations undergone by Great Britain during the eighteenth and nineteenth centuries. Over roughly one hundred years, this country set the basis for a dynamic and self-sustaining economic process that has improved the lives of millions of people up to the present day. Nevertheless, even though the positive outcomes of this process for human welfare nowadays are not disputed, the same does not apply to the century spanning from 1750 to 1850 in this country.

Since contemporaries criticized the consequences of the new production and urban systems on the human status of the mass of the population, there has been substantial debate whether these concerns can be supported with quantitative evidence for at least four well-being dimensions: income, health, working time and inequality.

This study is an attempt to reflect on some important and well-known quantitative contributions of scholars in the field by putting their views into a broader perspective and assessing their implications for the standard-of-living debate when considering other dimensions of well-being. For this purpose, I use a framework grounded on economic theory drawing on Jones and Klenow (2015) to combine the dimensions of income, health, working time and inequality during the period 1781-51.

Three main conclusions can be derived from this exercise. Firstly, the results do not support the idea of a two-phase process in the evolution of British living standards during the analysed period which indeed can be observed when considering income, health or working time separately. Secondly, the discrepancies between different real wage estimates appear less substantial in a framework that extends the concept of well-being. And thirdly, real wages typically underestimate the extent to which welfare increased over this period. Actually, health might have contributed to an improvement in well-being at least as substantial as the most optimistic estimate of real wages.

The rest of the paper is structured as follows. Firstly, I will discuss some relevant quantitative contributions to the literature of the last three decades which form the core of the analysis. Secondly, I will present the methodology. And thirdly, I will present the results and conclude.

Literature review

What dimensions of well-being should be considered for the study of British welfare during the first decades of the industrial revolution? From the writings of nineteenth-century social reformers such as Marx (1867), Engels (1962) or Chadwick (1842), one can recognize substantial concern about income, health, working time and economic inequality. According to them, these aspects were of key relevance for the working class and therefore progress in these dimensions was necessary to improve the condition of the working class.

Concerning workers’ income, Lindert and Williamson (1983) brought the optimists’ case to the forefront by arguing that real wages nearly doubled between 1820 and 1850. Despite the views of the pessimists were not supported by everyone in the literature, their

44 In the following, I will use the concept of well-being and welfare interchangeably to refer to the status of British workers when considering income, health, working time and inequality.

45 It should be noted that some of the literature considers only England, however in this paper I will refer to Great Britain as the unit of analysis for the sake of comparability and simplicity.
position would only be substantially challenged with the study of Feinstein (1998). With a new price index, Charles Feinstein concluded that real wages increased only around 30 per cent over the whole period. Later research has both supported the pessimists’ (Clark, 2005, 2007) and the optimists’ view (Allen, 2007). Their real wage estimations are presented in the following figure:46

Figure 1: Real wages during the period 1781-1851

Two points are worth highlighting. Firstly, the lack of consensus only concerns the period after 1815 since both views agree that real wages stagnated before that date. This upholds the idea of two well-differentiated periods with mixed consequences for peoples’ well-being. The second point concerns the extent to which real wages rose during the whole period. Whereas the optimists report a sizeable increase around 80 or 60 per cent, the pessimists suggest a 40 per cent increase.

If we consider health, the picture becomes less clear. In contrast with real wages, the period spanning from 1781 to the end of the Napoleonic wars is an optimistic one in terms of health (see table 1, column I). After 1816, life expectancy stagnates until the end of the period. With respect to working time, from 1781 until 1816, there is a rise in the amount of annual working hours and a subsequent slight decline which does not compensate for the prior increase (see table1, column II). Finally, concerning economic inequality the evidence on this is not conclusive at all. Whereas Williamson (1985) argues that inequality increased in the second half of the nineteenth century, Feinstein (1988) suggests a slight decrease. In any case, the size of both the increase and decrease in inequality is not particularly large.

46 For the sake of clarity, I have not included the series by Lindert and Williamson (1983, 1985) and Feinstein (1998). These can be found in the Appendix.
Table 1: Indicators of health, working time and inequality during the period 1781-1851

<table>
<thead>
<tr>
<th>Years</th>
<th>Life expectancy at birth (years)</th>
<th>Working time (annual hours)</th>
<th>Inequality (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1781</td>
<td>36</td>
<td>2,971</td>
<td>--</td>
</tr>
<tr>
<td>1816</td>
<td>41</td>
<td>3,343</td>
<td>0.52 0.50</td>
</tr>
<tr>
<td>1836</td>
<td>41</td>
<td>3,305</td>
<td>0.53 0.49</td>
</tr>
<tr>
<td>1851</td>
<td>40</td>
<td>3,185&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.54 0.48</td>
</tr>
</tbody>
</table>

Note: the sources for life expectancy at birth and working time are Wrigley et al. (1998) and Voth (2001) respectively. For inequality (Column III) is Williamson (1985) and Feinstein (1988) for column IV.

<sup>a</sup> This number refers to 1850.

Given the different developments in the dimensions considered, it becomes clear that a more comprehensive measure of well-being is needed to assess overall workers’ welfare, namely a composite indicator. Crafts (1997) took such an approach and created two composite indices drawing on Dasgupta and Weale (1992) and the Human Development Index. Despite he observed that well-being seem to have increased over the whole period, this observation must be taken cautiously due to two methodological issues concerning the welfare indices. Firstly, the weighting scheme used for combining the different dimensions has a large impact on the indicator and the conclusions derived from it are not robust to changes in such weights. And secondly, these indicators do not show the extent to which welfare increased but rather whether it was increasing or not. These issues leave some questions open, such as: does the chronology implied by wages and working time hold after accounting for health and inequality? Do the varied estimates of real wages matter when confronted with trends in other welfare dimensions? Are the pessimists’ and optimists’ views irreconcilable? To answer these questions, the next section presents a new theoretical framework drawing on Jones and Klenow (2015).

Methodology

In the following expected utility framework<sup>47</sup>, I will consider a representative individual whose welfare depends on the level of income he gets at a certain point in time, the amount of time he spends working, the level of inequality in the society and the probability of living a long live. Formally, we can express this as follows:

\[
V(e, y, l, i) = e(\Pi + y + l - i)
\]  

where the welfare or utility of an individual (V) depends on the years he is expected to enjoy his income (y), time spent outside the workplace (l), economic inequality (i) and a constant (\(\Pi\)). To compare welfare over time, I take as a reference the year 1781 and observe the evolution of these four aspects with respect to that year. Then, I calculate the factor by which income would have to be adjusted so that a representative British worker in 1781 is as better off as he would be in another year after 1781 with different levels of income, health, working time and inequality. An example can be illustrating. If in a given year working time and mortality decrease while the rest stay constant with respect to 1781, then the improvement in welfare is measured as the factor by which the income of a British worker in 1781 would have to be increased so that he is as better off as he would be in the second year when he is expected to live longer and work less. Following Jones and Klenow (2015), we can express this as follows:

\[
V(e_{t}, y_{t}, l_{t}, i_{t}) = V(e_{t}, y_{t}, l_{t}, i_{t})
\]

<sup>47</sup> It is worth mentioning that Williamson (1984) followed a similar approach to combine income and health. However, the present methodology encompasses more well-being dimensions.
where \( t_0 \) is 1781, \( t \) is any year from 1781 to 1851 and \( \lambda_t \) is the factor by which income has to be adjusted in year \( t \) so that welfare in that year equals welfare in 1781.

In order to implement the welfare calculation of equation 1 and 2, we need to specify how and which variables will be observed over time. For income, I have assembled a dataset that replicates the real wage series from both pessimists and optimists. For the other dimensions, see table 1. To calibrate the constant in equation 1, I drew on Williamson (1990) which provides an estimate of the trade-off between income and health in nineteenth-century England.

**Results**

Figure 2 presents three welfare indices for the period 1781-51 drawing on real wage series to account for the optimists’ (Clark, 2005, 2007) and pessimists’ view (Allen, 2007). The first conclusion that can be drawn from the three indices is that welfare increased steadily over this period. Contradicting the evidence for real wages, substantial progress was achieved before 1820 (this result also holds if I consider other real wage estimates; see the appendix). Therefore, the index does not support the idea of a two-phase process. Secondly, the relative importance of the discrepancies between optimists and pessimists in terms of real wages is reduced by roughly a half when considering other dimensions of well-being. The percentage difference in real wages between the most pessimistic and the most optimistic estimate is roughly 30 per cent, whereas for the welfare indices it is 15 per cent. And thirdly, the increase in living standards achieved by 1851 is larger than what measures of real wage alone suggest, namely between 87 and 102 per cent. It is worth mentioning that these figures, similar to real wages, should not be taken at face values but rather as a general indication of the increase in welfare of the British working class over this period.

In order to understand the forces that were driving welfare, I provide a decomposition in figure 3 which shows the cumulative contribution of the different well-being dimensions to welfare with respect to 1781. Firstly, the steady increase in well-being is mainly due to health gains until around 1810 and improvements in wages afterwards. Working time and economic inequality seem to have a very low impact on well-being. Secondly, the relative importance of different wage estimates is diminished due to the role of health as an important driver of welfare. And thirdly, the source of doubling living standards over this period is both wages and life expectancy. The relative weight of these two depends on the wage series that we use as a reference. But in any case, if we take the series based on Clark (2005) to be an upper bound estimate for the real wage increase, we can conclude that health contributed to well-being at least as much as real wages (or even more). Thus, not accounting for health in the first decades of the industrial revolution seriously underestimates welfare improvements by at least as much as if we did not consider wage improvements.

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48 The rest of the wage series were also used but are not presented in figure 2 for the sake of clarity. Figure 2A in the appendix presents estimates for all wage series.
Figure 2: Welfare during the period 1781-1851 ($1781=100$)

Figure 3: Cumulative contribution of wages, life expectancy, working time and inequality to welfare

Note: Wage_C05, Wage_C07 and Wage_A refer to the contribution of real wages to welfare drawing on Clark (2005, 2007) and Allen (2007). Health, Work and Inequality refers to the contribution of life expectancy at birth, annual working time and economic inequality to welfare with respect to 1781.

Conclusions
The study of British living standards during the first decades of the industrial revolution is a field that has shed light onto important aspects of well-being for the working class. By taking advantage of the abundance of quantitative evidence produced by many scholars in the field, this study applies a framework to combine different well-being dimensions drawing on
economic theory with two main aims. The first is to put together the views of pessimists and optimists concerning income, health, working time and inequality to measure the overall evolution of welfare in Great Britain for the period 1781-51. The second aim is to assess the relative importance of differences in real wage estimations between the pessimists and the optimists when considering other dimensions of well-being.

What are the implications of this study for the standard-of-living debate? Firstly, welfare seems to have increased steadily during the whole period without major breaking points as individual indicators of well-being suggest. This does not support the optimists’ case which argues that workers started reaping the benefits of the industrial revolution during the first half of the nineteenth century. Secondly, health played an important part in the welfare increase over the whole period. This does not only reduce the relative importance of differences in real wages between the pessimists and optimists, but it also shows that welfare might have doubled. Therefore, neglecting the health dimension over this period seriously underestimates the overall increase in welfare. Actually, the results indicate that not including health (as measured with life expectancy at birth) is comparable to ignoring the most optimistic increase in wages over the whole period.

Contrasting the evidence of an increase in the pace of improvements in several economic indicators during the nineteenth century, the condition of the working class seem to have followed an upward steady trend that did not significantly change at least since the late eighteenth century.

Appendix

Figure 1: Real wage development during the period 1781-1851
Figure 2A: Welfare development during the period 1781-1851

Bibliography


Do secure property rights cause debt? Evidence from colonial South Africa

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Introduction
In order for any transaction, including debt transactions, to occur, an economic system needs ‘well-specified and well-enforced property rights’. Coase concluded that without the delimitation of initial rights no market transactions can take place. Such property right systems evolve from the ‘laws, customs and mores of a society’. These authors formed the beginning of the study into property rights as an economic institution and how important they are for economic development.

More recent studies have focused on finding empirical evidence that property rights matter for long-run development. A part of these studies have focused on the laws governing land ownership and differences between de jure and de facto rights. The conclusion from these studies is the local conditions under which these property rights are observed (de facto) matter for the implementation of de jure property rights.

Dye and La Croix build a model to explain the progress of South Africa’s property rights system, challenging the view that colonial systems developed from de jure to de facto property rights. They found that by allowing settlers to settle outside of the official colonial boundary, de facto property rights preceded de jure property rights at the Cape. This research aims to study whether differences in de jure property rights were important for economic transactions or if de facto property rights were more important.

The land policies at the Cape
The initial plan for the Cape in the mid-seventeenth century was not to become a settler colony, but only to serve as a refreshment station for passing ships. Due to low supply, the Dutch East Indies Company released nine company employees to become freehold farmers around Cape Town. Later European settlement expanded toward the fertile mountainous region of Stellenbosch and the surrounding regions.

For this early period, farmers could claim any size of land cultivated within three years under the freehold system. Many of these freehold farmers became known as the ‘landed gentry’ owning large swathes of land and many slaves. The nature and size of these freehold farms made them more tradeable and the prices of freehold farms increased throughout the period. Although it is unlikely that each farm would have similar soil quality, most had access to a river. Due to the unavailability of suitable soil in the region, the freehold farm system was terminated to new claims in 1717, although settlers did continue to trade and inherit these freehold farms well after 1717.

49 North, ‘Institutions and economic growth’.
50 Coase, ‘The problem’.
51 Demsetz, ‘Toward a theory’.
54 Dye and La Croix, ‘Property rights in land’.
55 Guelke, ‘Freehold farmers’.
56 Guelke and Shell, ‘An early colonial landed gentry’.
57 Newton-King, Masters and Servants, p.18.
The second and, after 1717, most used form of property at the Cape was loan farms. Loan farms were obtained with relative ease: they were simply loaned from the Company for three, six or twelve months at a fixed rate, the size determined by riding half-an-hour on horseback in each direction. The only parts of loan farms which could legally be sold were the fixed improvements; settlers thus had no *de jure* rights to the land they lived on under the loan farm system.

But, like other colonial land systems, *de jure* rights were not always enforced. Guelke argues that ‘… [i]n practice there was little distinction between freehold land and *leeningsplaatsen* (loan farms)’. In fact, he goes further by saying ‘… the leases became so secure that the fixed improvements (which could be sold) came to reflect the value of the whole property’.58 Newton-King, in the most authoritative contribution to the history of the Cape frontier, submits the loan farms were similarly secure as the freehold farms.59

The freehold and loan farms were clearly distinct in their *de jure* property rights. The freehold farms *de jure* enjoyed more secure property rights – they were tradeable and inheritable – while the loan farms were not. However, some historians suggest that the *de facto* property rights of loan farms were similar to those of the freehold farms. The main hypothesis tested here is whether *de jure* property rights translate into more debt. If the freehold farms were more secure, the expectation is for them to be more valuable as collateral and therefore individuals with freehold farms should have more debt.

**The data: probate inventories and genealogies**

The data came from two sources: genealogical records and probate inventories. The genealogical records are familial lists from the first settlers with information on birth, marriage, and death dates, as well as occupations. The main variables of interest from the genealogies are whether someone was the oldest son, their number of children and their age.

The probate inventories list all the assets and debts of an individual at the time of death. The main concern for bias in probate inventories is the exclusion of poor individuals, females and the young. Because we are focused on land ownership, the poor landless are excluded. Females are also excluded from the study, because our instrument of choice is being the oldest son and the comparison is between oldest sons and sons born later. Age is not a concern either. Previous research has shown there is no difference and no correlation between age and debt levels at the Cape for this period, while we later also show there are no significant differences in the distribution or level of ages between oldest sons and sons born later.60

**An instrumental variable approach: oldest sons, debt and freehold farms**

Due to possible reverse causality and endogeneity concerns in estimating the effect of property right regimes on debt levels, an instrumental variable approach is used to estimate the effect of owning a freehold farm on an individual’s debt level. Our instrument of choice is being the first born son in a household relative to sons born later.

The instrument should comply with the following four assumptions: independence (exogeneity), exclusion restriction, first stage (relevance), and monotonicity assumptions.61 The independence assumption requires that the instrument is randomly assigned. This means first born sons should not have unobserved characteristics which makes them more likely to own a freehold farm, for example business connections. Although not directly testable, there is no evidence that oldest sons were innately more capable of owning freehold farms and the randomness of birth order is assumed independent.

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58 Guelke, ‘Frontier Settlement’.
60 Swanepoel and Fourie, ‘A debt to slavery’.
61 Angrist and Pischke, *Mostly Harmless Econometrics*.
The exclusion restriction requires that birth order does not have a direct causal effect on the level of debt. The best way to support the exclusion restriction is to look at the debt distribution of the oldest sons versus sons born after. Figure 1 shows these distributions. Table 1 provides the t-test for the size of debts – there is no significant difference between the size of oldest sons and sons born later. Since there is no significant difference in either distribution or size of debt for oldest sons to other sons, we assume there is no direct relationship between being the oldest son and his debt level.

Table 1: T-test of oldest son vs non-oldest sons, debt size, owning a freehold farm and age

<table>
<thead>
<tr>
<th></th>
<th>Debt size</th>
<th>Owned freehold farm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>Not oldest son</td>
<td>638</td>
<td>1535.01</td>
</tr>
<tr>
<td>Oldest son</td>
<td>681</td>
<td>1692.86</td>
</tr>
<tr>
<td>Combined</td>
<td>1319</td>
<td>1616.02</td>
</tr>
<tr>
<td>Difference</td>
<td></td>
<td>-156.79</td>
</tr>
<tr>
<td>t-stat</td>
<td>-0.411</td>
<td>-5.1443</td>
</tr>
<tr>
<td>p</td>
<td>0.6811</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: debt size and owned a freehold farm from probate inventories; age from genealogical records matched to probate inventories.

For the first stage assumption, the oldest sons need to have a higher probability of owning a freehold farm. The system of inheritance at the Cape was one of partible inheritance derived from Roman-Dutch law. This meant the individual’s estate was divided half to the spouse and then equally among the children. Despite this, anecdotal evidence has been provided that the oldest sons were favoured when it came to the inheritance of property and freehold farms.62 With this anecdotal evidence at hand, the likelihood for older sons of owning a freehold farm (48 per cent) is higher than sons born later (18 per cent) in the sample.

Monotonicity requires that the instrument affects all the treated in the same direction, that is, being the oldest son will always make one more likely to own a freehold farm rather

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62 Newton-King, ‘In search of nobility’; Dooling ‘The making of colonial elite’.
than less likely. Oldest sons were always more likely to own farms relative to their brothers born later and not the reverse, across time and districts.

Being the first born son appears to be a valid instrument for the probability of having a freehold farm relative to sons who were born later. Table 2 presents the regression results for the instrumental variable estimation. The result supports the hypothesis that the oldest son had a 23 per cent higher probability to have a freehold farm relative to sons born later, significant at the 1 per cent level.

**Table 2: Regression results from instrumental variable analysis**

<table>
<thead>
<tr>
<th>First-stage regression</th>
<th>Second Stage Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Owned a freehold farm</td>
</tr>
<tr>
<td>First son</td>
<td>0.2338***</td>
</tr>
<tr>
<td></td>
<td>(-0.0494)</td>
</tr>
<tr>
<td>0 Slaves (ref.)</td>
<td>0 Slaves (ref.)</td>
</tr>
<tr>
<td>Between 1 and 4 slaves</td>
<td>0.1595**</td>
</tr>
<tr>
<td></td>
<td>(0.0693)</td>
</tr>
<tr>
<td>Between 5 and 10 slaves</td>
<td>0.2344****</td>
</tr>
<tr>
<td></td>
<td>(0.0704)</td>
</tr>
<tr>
<td>More than 10 slaves</td>
<td>0.3469***</td>
</tr>
<tr>
<td></td>
<td>(0.0785)</td>
</tr>
<tr>
<td>Both creditor and debtor</td>
<td>-0.0392***</td>
</tr>
<tr>
<td></td>
<td>(0.0500)</td>
</tr>
<tr>
<td>Total bonds present in inventory</td>
<td>-0.0021 (-0.0225)</td>
</tr>
<tr>
<td>Spouse listed on inventory</td>
<td>0.1861* (0.0853)</td>
</tr>
<tr>
<td>Children</td>
<td>-0.0069 (0.0063)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.1003 (0.0930)</td>
</tr>
</tbody>
</table>

|                        | Ln(Debt Value)         |
| Owned a freehold farm  | -1.6521 (1.2138)        |
| Between 1 and 4 slaves | 0.1034 (0.4329)         |
| Between 5 and 10 slaves| 0.7512 (0.506)          |
| More than 10 slaves    | 1.0783* (0.6346)        |
| Both creditor and debtor| 2.0072*** (0.292)      |
| Total bonds present in inventory| 0.6539*** (0.1292)   |
| Spouse listed on inventory| 1.3521** (0.5636)     |
| Children               | -0.0348 (0.039)         |
| Constant               | 3.5116*** (0.5185)      |

| N                      | 330                     |
| Under-identification test | 21.519                  |
| Anderson canon. corr. LM statistic | 0.0000                 |
| Chi-square(1) p-value   | 22.392                  |
| Weak Identification test | 16.32                   |

Source: Probate inventories, own calculations. Dependent on son reaching 16 years of age.
Significance levels: * 10%, ** 5% and *** 1%, standard errors in brackets.

The second stage regression, however, reveals that, given the instrumental variable of being the oldest son, owning a freehold farm does not matter for the individual’s debt level at the Cape. The coefficient of owning a freehold farm is negative – individuals with freehold farms have less debt – and the coefficient is insignificant. In the property right framework sketched before, the debt market at the Cape considered the *de facto* property rights of land more important for transactions. This supports the historiography of the Cape in which authors have provided evidence that the property rights of freehold farms were similar to the loan farms. It also advances the international literature, by focusing on microeconomic information and the recent literature which suggest social norms and *de facto* property rights are important when *de jure* rights are established.

The specification tests are also presented in the table. The Cragg-Donald Wald statistic (22.392) is larger than the critical value of 16.38 and the instrument passes the weak
instrument test. This suggests being the oldest son in the family is highly correlated with owning a freehold farm. Because we only have one endogenous regressor and one instrument, the specification is just identified. All these tests together make the instrument a valid instrument.

By measuring the effect of property rights on a micro-level, we add to the literature on property rights and economic transactions. The freehold and loan farms had distinct formal processes for claims and legal specifications differed. Despite the differences in de jure rights, de facto property rights were similar and this caused the economic outcomes for the two systems not to differ. This supports the historiography’s view that the differences between freehold and loan farms were not as stark and that settlers relied on de facto property rights for decision-making. It also means, like De Soto and Lamoreaux’s findings, the local conditions under which the property right regime is observed matters. In this case, the settlers’ view was that the loan farms were as secure in their property rights as the freehold farms.

**Conclusion**

For any economic transaction to take place, well-defined and well-enforced property rights are required. Economists suspect that property right regimes are rooted in the history of the region, but it has been difficult to proof the effect of this on economic development empirically. Economic theory would suggest land is only valuable for debt transactions if there is no asymmetry and uncertainty regarding land rights.

Historians of the Cape have suggested the de facto property rights of the loan farms were the same and as secure as the freehold farms, even though the de jure rights between the systems differed. Our hypothesis was that individuals with freehold farms had more secure de jure property rights and freehold farms should therefore be more valuable for debt transactions. On this basis, individuals with freehold farms should have more debt. After controlling for endogeneity concerns regarding the relationship between debt and land rights, the significance of owning a freehold farm for debt transactions disappears. These results support the historiography which suggested that property rights between freehold and loan farms were similar in de facto terms, and also that individuals in a society would rather rely on these de facto rights when considering economic transactions. This provides empirical evidence that the institution of property right depends on the society in which it is embedded and this will in turn affect the economic outcomes.

**Footnote references**


The British Consular of the Levant Company at Smyrna: Consul George Boddington and the Boddington Company in the Ottoman commercial-business system

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The English factors at Smyrna were less numerous than the French factors in the last decades of the seventeenth century. However, in that time, we know that at least one hundred English merchants-factors resided at Smyrna. Most of them were authorized factors with the rights to do business or attend factory assembles. Furthermore, there was an apprenticeship institution existed by Levant Company administration in order to maintain continuity of trade organization and many apprentices undoubtedly were sons of members of the Levant Company or factors at Smyrna.

One of the major employers of apprentices was George Boddington (Father), a merchant of London, who has never gone to Levant or Ottoman territory. Nevertheless, he knew the importance of the apprenticeship system as an institution of commerce and he encouraged his son, George Boddington Junior, to become a co-ordinator of aforementioned apprentices. The first half of the Ottoman eighteenth century observed clear ‘British oriented Business Enterprises’ in Ottoman economic and commercial life, consisting mostly trade of silk fabric.

Diversification efforts by Levantines and changes in the commercial aspects of joint-stock company and joint-shipping system after 1718 caused a decrease in market efficiency of Levantine merchants in Ottoman foreign trade. Boddington family among these Levantine merchants, who were decision makers in British-Ottoman trade life, attracted attention with their commercial relations and economic activities. Accordingly, George Boddington Junior admitted a member of the Levant Company in 1703, when in the high tide of its prosperity, Consul of that Company at Smyrna between the years 1722-33.

Due to their wide range of business interests, the Boddington family and their company became prominent among all the Levantine merchants that played a key role in eighteenth century Ottoman trade. This paper examines different business practices (Apprenticeship, Joint-stock and Private Companies) within which Levantine merchants were involved in order to understand how they used Ottoman economic institutions as businessmen and which political relations he had between the years 1720 and 1733. It aims to answer broad questions about the Boddington family’s role in British-Ottoman trade by using primary sources in the British National Archives, British Library and Ottoman Archive.
Institutional commitment problems in the Ottoman Empire: the case of the Iltizam System

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The Ottoman economy was based on agriculture in the early modern period. The timar system and the following iltizam (farming contracts) system were the main institutions of agricultural production. This study aims to analyse these institutions. I use a game-theoretic model to understand the evolution and decline of the iltizam system. In the Ottoman legal system, state ownership on lands and the distribution of lands by state with limited usufruct rights instead of private ownership shaped the institutional environment. These usufruct rights depended on short-term contracts rather than long-term relational contracts. In addition, these short-term contracts could be terminated by the state at any time. On the other hand, producers or usufruct rights holders had to make a choice between a productive or destructive production based on rents creation under alternative systems. As a result of short-term usufruct rights and coercive power of state, institutional and commitment problems shaped the incentive mechanisms, and the agricultural production of the Ottoman Empire was reduced to a one-shot game with the characteristics of a standard Prisoners Dilemma Game. I show in the paper that, rent-seeking motives of iltizam owners and income maximization model of the state did not allow contractual commitment on both sides.

It has been commonly known that most of the pre-industrial state’s economy depended on agriculture. Furthermore, agriculture was also the main determinant of industrial progress and development. For this reason, it is important to understand the pattern of agriculture. This study will examine the agricultural structure of the Ottoman Empire with respect to institutional analysis and also game theoretical model. Studying institutions could solve why some nations are rich and others poor, why some enjoy a welfare-enhancing political order and others do not. What is more, why some societies evolve along distinct trajectories of institutional development and why some societies fail to adopt the institutions of those that are more economically successful.

This kind of analysis has been chosen due to the limited research in this area. Recent research examines agricultural production patterns and its institutions. One of the first researches was studied by Barkan (1980) on Ottoman agriculture with archive documents. According to Barkan, property rights of agricultural lands were owned by the state that controlled these lands with its military officers. In this way, the state could monitor production process of the lands, and also the state aimed to provide control over the empire. This system can be called the Timar (fief) system which could be considered as efficient and productive with regard to economic and military successes of the empire until the end of the fifteenth century. However, deepening financial expenses and wars have increased the need for cash. For this reason, the state has sought to change the structure of the timar system or institution (Genc 2000).

The Timar system was evolved to the iltizam (land tenure) system, and then the system transformed to the malikane (manor) system. Iltizam means that usufruct rights of taxable lands were allocated through private individuals with an entrance fee by ruler. In other words, the system can be considered that a privatization of taxation (Genç, Encyclopaedia of Islam, 154). Private individuals or applicants for the lands could be called as mültezims. These mültezims could get taxation rights of lands with an annual fee. Moreover, mültezims were also responsible for profits and losses. In addition to these, mültezims had to find financial guarantors in order to get taxable land. Iltizam contracts were formed with limited time. According to the iltizam contract, mültezims could get taxation rights between 1 to 3 years. This contract would be realized between the ruler and the mültezim. The iltizam system
was related with not only production and tax farming but also entrepreneurship. Pamuk (2013:13) argued that the new system was also for domestic borrowing and this institution was created to expedite borrowing for central government. According to iltizam, mültezims (agencies and entrepreneurs, who managed the lands) made cash payments to budget in order to obtain tax farming and usufruct rights of the lands from the central government. Payment amounts were determined with auctions. These auctions were also realized under state control. By doing this, central government could gain cash for increasing expanses, and be able to collect taxes of following years with early payment.

From the beginning of the mid-seventeenth century, prices of iltizam lands reached their economic capacity limit. In other words, entrance fees and annual instalments of iltizam land could not be enhanced by the mültezims. In addition to economic capacity problem, institutional problems were also appeared as in the timar system. Thus, iltizam system was transformed into a malikane system at the end of the seventeenth century. Due to the problems of the iltizam system, the malikane system was established and transformed. There were structural differences among the iltizam and the malikane system. First of all, taxable lands were allocated for life-time utility with regard to the malikane system instead of limited time contracts in the iltizam system. So, contracts among the ruler and the mültezim would be terminated after the death of mültezims. Secondly, malikane system also differed with its competition conditions and annual payments. According to the system, mültezims had to pay fixed payments annually to the central treasure. Mültezims obtained profits from the difference between total revenue and fixed payment. According to Genc (Encyclopaedia of Islam: 157), the malikane system was established in order to create incentives for increasing revenues of central budget. In addition to fixed annual payments, mültezims had to pay also an entrance fee or cash in advance to obtain a malikane land. Payments in advance were determined with an auction system which was also designed and controlled by the ruler or the central government. It was expected that mültezims of the new system would expand production capacity and value of the lands, and thus central government could sell these lands at greater prices to the new mültezims. Therefore, the main purpose of the state was binary. First, sustainability of taxable taxable lands would be protected, and secondly, tax revenues would be increased with the new system (Genc, Encyclopaedia of Islam, 157).

Thirdly, Genc (2000) argued that malikane system created a new class – second and third party mültezims – and, added that these mültezims could be considered as rentiers. Thus, increasing numbers of mültezims and, first party mültezims were responsible for the evolution of the system, which caused increasing numbers of mültezims and tax burden on peasants. While the first party mültezims were staying close to the sultan in Istanbul, second and third party mültezims was also formed with local rulers or powerful groups – ayans. These groups had a significant influence on peasants and province of malikane lands. This situation could be one of the main problems of the system. Finally, risk premium of the malikane lands was increased in time, and demand would be decreased by the mültezims. Thus, prices were also decreased. For this reason, expected revenues of the state started to decline from the malikane auction system. Then, the system would be ended until the middle of nineteenth century.

Why was the timar system transformed into iltizam and then malikane? What kinds of problems were solved with institutional evolution? Why was domestic borrowing the first aim instead of investment, entrepreneurial activities or productivity? According to recent literature in the matter of Ottoman institutions, the main subjects of institutional evolution were budget deficits, increasing war expenditures, and immediate cash needs (Genc, 2000; Ozvar, 2003; Inalcık, 2006; Tabakoğlu, 2008). These arguments are admissible for the early modern period and pre-industrial era (North & Weingast, 1989). On the other hand, this study will be analysed evolution of Ottoman institutions – which included agricultural and fiscal – with regard to dynamics of institutional economics, game theory (prisoners’ dilemma game) and be handled in a distinctive way with a new point of view unlike the existing literature.
Institutions are matter to understand economic performance and growth of the states. North (1991: 97) described institutions as they are humanly created constraints that structure political, economic and social interaction, which consist of both formal and informal rules. According to this perspective, humans in a society have some choice sets which determine costs of exchange and economic performances. In addition, North (1991) argued that institutions also reduce uncertainty and create the rules of the game in a society or state. The rules of the game can be one of the main determinants of economic growth or decline. The performance of an economy can be measured with not only supply-demand relation or price levels but also the role of institutions. Political decision rules and property rights are other significant indicators of institutional analysis. Furthermore, not only production costs but also transaction costs matter in such analyses. Institutions can create incentives for productivity, efficiency, profit-seeking activities for agencies or vice-versa. For this reason, institutional analysis provide examining choice sets and rules of the game which created by also institutions.

Choice sets and the rules of the game are formed with political decision rules (First block) and property rights (Second block) (North, 1986: 230). Furthermore, norms of behaviour, culture can affect these sets and rules which restrict human choices (Aoki, 2001; Grief; 1994, 2006). Political decision rules are mostly about who enforce the rules? Or who decides the rules in a society? In addition to these questions, monitoring is a key element of political decision rules. Monitoring is not only for production costs or creating order but also important for lowering transaction costs. In addition, political decision rules are substantial for contracting among individuals and other organizations. North and Weingast (1989; 803) focus on the relationship between institutions and the behaviour of political decision institutes (government) with effects of this relationship on the institutional change. In the first place, they mentioned that the economic growth occurred with not only establishing set of rights but also governments must ensure a credible commitment.

Rulers could violate contracts in order to fix budget deficits or gain more cash to budget from these contracts in mostly early modern period. Sovereigns could use its power against the other part of contracts and that entailed loss of money or social capital. For instance, entrepreneurs or agencies preferred to leave the country instead of create productivity or investment fields. Baumol's (1990) basic hypothesis is that the supply of entrepreneurs differs among societies. So, allocation and supply of entrepreneurship were the main determinant of productive activities such as innovation and unproductive or destructive activities such as rent-seeking or organized crime. Baumol (1990: 894) considered the rules of the game as the reward structure in the economy. This reward system and its changes modify the composition of entrepreneurial activities. However, the composition of entrepreneurs for productive or destructive activities could be designated by payoffs.

The control of coercive power on the institutions is one of the most important issues to understand the critical role of constitutions and other political institutions which could restrict the Crown’s or government’s authority. Why was restricting the power of the Crown so important? Wars could be increasingly expensive. Due to the fiscal and authority problem, wars were also risky for the Crown. The Crown had to make a choice between repeated play and reneging because of risks. If the Crown chose one time gain with its power, future of the Crown would be diminished and be replaced by a new heir or another dynasty. On the other hand, repeated games with credible commitment and reputation entailed more effective economic growth and development instead of reneging. Thus, political decision rules, its restrictions and enforceability of the rules are crucial to analyse economic performances of the states.

Second important block of institutional analysis is about property rights. Land tenure and farming contracts could be substantial in order to examine the state’s economic performances in early modern times. Agriculture and trade had a substantial share in total production and income. For this reason, states tried to find other sources on behalf of finance
its expenses. Increased demand for loans, selling monopolies, or increasing tax rates or customs could be considered as the state’s politics to raise money for its budget. On the other side, states promoted productivity and efficiency on account of entrepreneurs and producers to increase production levels and lower the costs of production and transactions. It was easy to argue that former political decision was for short-term gains, and latter was for long-run gains. Property rights were relevant with the relationship between short-term gain and long-term gain, or productivity and destructive productivity.

Transaction costs is another block of analysis after dealt with political decision rules and property rights. In addition to transaction costs (monitoring costs, information costs etc.), agency relationships and entrepreneurial activities are crucial for economic performance. Low transaction costs can create incentives for entrepreneurial activities and ease agency relationships in the process of production and decisions.

Transaction costs could be a heavy burden for producers, entrepreneurs or agents. What should be produced? How was production converted into cash from in-kind? Who would be undertaking the costs of transaction? Who would monitor producers and production process? Who organized the market? According to Coase, efficient government and efficient market lead to reduced costs of transaction. In this way, states could encourage and create incentives on behalf of productive entrepreneurship with its institutions. However, rulers could create revenue for budget with increasing taxes, selling privileges and monopolies or peerage as in England.

Why did some nations’ institutions promote rent-seeking instead of profit-seeking? Were entrepreneurs or agents already rent-seekers? Did rent-seeking activities occur as a belief and norms or outcome of institutional evolution? These questions can be solved with interpreting which problems were sought to solve by government or rulers. New institutions would be established to solve problems. Thus, these institutions could create new incentives for the players. Incentives could shape behaviour of entrepreneurs and agents. What is more, agents and entrepreneurs could also create new institutions in order to create bargaining power against rulers, government etc. By doing this the coercive power of rulers could be restricted on legal structure, finance and budget with new established institutions. Therefore, rulers were motivated to abide by agreements and contracts. Credible commitment was also realized with such institutions. On the other hand, the new institutions entailed the control of wealth holders over the government. How was the balance of power established among ruler and wealth holders? These questions will be tried to solve for the Ottoman Empire with the help of archive documents and dynamics of game theory in this study.

The state wanted to build a game that provides the benefits from mültezims in the static model. On the other hand, the state did not carry out commitments for its own interests in the dynamic model. The effectiveness of the static model could not be realized in the dynamic model. Thus, the problem stemmed from this transition. The main purpose of this study is to investigate the transition problem that occurred between static model and dynamic model with respect to institutional and game theoretical analyses.

**Payoff Matrix for the Iltizam System of the Ottoman Empire**

<table>
<thead>
<tr>
<th>Mültezims (Managers/Agents)</th>
<th>State</th>
<th>(Cooperation)</th>
<th>(Cheat)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Cooperation)</td>
<td>$\pi_D(\mu(I), T^<em>, M_h, \varphi_u)$, $\pi_u(R(I), T^</em>, M_h, \varphi_u)$</td>
<td>$\varepsilon(\gamma_L, M_c, T, \mu(I))$, $K_u(M_c, \gamma_L)$</td>
</tr>
<tr>
<td></td>
<td>(Cheat)</td>
<td>$K_D(T^<em>, \sigma(\gamma_L), T_{t+1})$, $\varepsilon(-R(I), T^</em>, M_h, \sigma)$</td>
<td>$\alpha(T, M_c, \gamma_L)$, $\theta(T^*, M_c, \hat{h})$</td>
</tr>
</tbody>
</table>
References
Capital market integration in early modern Spain: A reconsideration

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The study of market integration in early modern Europe has intensified in recent years, underpinned by an appreciation of how market growth allowed specialization, promoting productivity and economic growth. However, the existing literature typically focuses on grain markets and neglected capital markets where the weight-value ratio of capital is more favourable than most commodities. For new institutional scholars, capital market integration provides a fundamental measure of the role of transaction costs in determining market formation and growth in early modern Europe (North, 1981; Greif, 2000).

This paper fills a research gap by analysing long-term capital market integration in early modern Spain. Through the use of a new dataset of private annuities, the analysis draws on capital flows between the Crown of Castile and the Crown of Aragon, where fixed interest rates between kingdoms differed by 2 per cent in the first half of the eighteenth century. My analysis shows that there was very little capital flow between kingdoms. As for most European monarchies (Epstein, 2000), I argue that Spain’s fragmented jurisdiction created a significant divergence in legal rights and duties between historic territories, which in turn hindered market integration.

Financial market integration in early modern Europe

Recent research has discovered that financial markets were integrated earlier than those for goods due to the more advantageous weight-value ratio of money, even for coins. Chilosi & Volckart (2011) found that the Central European financial markets integrated in the fifteenth century. Using stock market analysis, Neal (1987) furthermore shows that London and Amsterdam were well-integrated in the eighteenth century, whilst Flandreau et al. (2009) confirms that monetary transactions centred around Amsterdam, London, and to a lesser extent, Paris and Hamburg.

For Spain, Grafe (2012) has recently shown how former Spanish territories and powerful interior towns obstructed integration through jurisdictional trade barriers like taxes, alongside high transport costs. However, research on capital market integration has never been carried out until now. The only exception is Álvarez-Nogal’s (2009) examination of the spread of interest rates between urban annuities across Spain (juros) and the origins of inter-city investors between 1540 and 1740. This research shows fragmentation in the market for long-term public bonds.

I will be focusing on the market for long-term private annuities, which is considerable in volume, but polarized. In a previous contribution on this topic, I show how some ecclesiastical institutions, which carried out the role of banks in eighteenth-century Spain, succeeded in integrating different geographical areas in order to meet the demand for large loans. In this paper, I examine smaller loans, though the bulk of borrowers, in places where I can test for market integration.

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63 Milhaud, C., ‘Priests or bankers? The ecclesiastical credit in early modern Spain’, unpublished.
New data on private annuities

Like many other regions in early modern Europe, the predominant instruments of long-term private credit in Spain were obligations (obligaciones) and private annuities (censos consignativos in Castile or censales in Aragon) (Fernández de Pinedo, 1985). The censo or censal was a mortgage-backed loan which can be compared to the English mortgage or the French rente constituée (Hoffman et al., 2000). It was the only debt instrument that entailed explicit payment of interest, provided a legal maximum rate was not exceeded, and the borrower could choose when to repay the capital. By contrast, the obligaciones were due within a particular time bracket, and could not stipulate the payment of interest. This is one of the reasons why the censo or censal was the dominant credit instrument in early modern Spain (Fiestas Loza, 1984; Sánchez González, 1991; Tello Aragay, 1994; Fernández de Pinedo, 1985).

Interest rates on these annuities were regulated by public authorities (the Cortes and the King), which fixed an interest cap. Crucially, in Spain this cap differed across the country. On 12 February 1705, Philip V reduced the interest cap to 3 per cent in the Crown of Castile, but maintained it at 5 per cent in the Crown of Aragon until 1750. As a result, a large gap was established between kingdoms for 45 years. Analysis of the spread between different cities does not provide any information on market integration, since interest rates were fixed. However, such a differential would have triggered critical capital flows between Aragon and Castile during this period. I henceforth decided to explore the city from which the borrowers and lenders originate, exploiting the insight that people from Aragon had more interest in

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64 Spain was roughly divided between two main territories: the Kingdom of Castile (Andalusia, Murcia, Extremadura, New Castile, Old Castile, Leon, Galicia, Asturias, Basque Provinces, and Navarre) and the Kingdom of Aragon (Valencia, Aragon, Catalonia, and Balearic Islands) (see fig. 1).

65 The contract was supported by collateral that could be a real asset such as a land, a farm, a house, or another mortgage loan.

66 It is nonetheless clear that interest was charged on the obligaciones, often at a rate above the limit on censos. The interest was included in the amount that had to be paid back. It was a way to negotiate outside the legal maximum interest rate (Tello Aragay, 1994; Santonja Cardona, 1991).
borrowing at lower costs in Castile (as a result, the number of transactions would have decreased in Aragon), whilst people from Castile might have been more willing to lend in Aragon (ceteris paribus).

I examined 88 contracts signed in 1725 and 1735 in various small cities of the Soria (Castile) and Zaragoza (Aragon) provinces, which had similar geographic and socioeconomic conditions.\textsuperscript{67} I chose cities within a 10-kilometre radius from the border between Castile and Aragon, so as to avoid issues regarding transportation costs.

Figure 2: \textit{Borrowers’ hometown in Ágreda, Noviercas, and Ólvega in 1725}

\begin{center}
\includegraphics[width=\textwidth]{figure2.png}
\end{center}

\textit{Note:} cities with a cross symbol are indicated for information only.
\textit{Sources:} Archivo Histórico Provincial de Soria (hereafter AHPS), cajas 1737, 2367, and 2443.

Figure 3: \textit{Borrowers’ hometown in Ágreda, Noviercas, and Ólvega in 1735}

\begin{center}
\includegraphics[width=\textwidth]{figure3.png}
\end{center}

\textit{Sources:} AHPS, \textit{cajas} 1740, 1755, 1774, 2369, and 2446.

\textsuperscript{67} See app.
The analysis of the borrowers' hometown in Castile highlights that not a single person from Aragon borrowed in Castile. Ágreda (Castile) was 20 kilometres away from Tarazona (Aragon), the second most economically important city in the province of Zaragoza. However, nobody in Tarazona adopted the strategy of borrowing at a lower cost in Ágreda. On 7 June 1725, for example, the administrator of Don Pedro Garay’s pious memories in Noviercas preferred to lend 640 *reales de vellón* at 3 per cent in Ciria, whilst he could have lent at 5 per cent one just one kilometre away in a socio-economically and geographically equivalent situation.

One might think that loan transactions between the Aragonese and Castilians would have been easier to set up in large cities than small ones, as the former were more likely to find a financial intermediary to carry out transactions. In figure 4, I examine the borrowers’ hometown in the capital of the province, Soria, for the year of 1735. I did not trace any borrowers coming from the Aragonese side, whereas the elite of the city could have expanded its coverage outside Castilian provinces.

**Figure 4: Borrowers’ hometown in Soria, 1735**

![Map of Soria showing hometowns of borrowers](image)

**Sources:** AHPS, *cajas* 1516, 1572, 1633, 1643, 1660, and 1681.

I also examined lenders’ hometown through 32 contracts signed in Tarazona (Aragon). This city, situated close to the border, could have attracted Castilian lenders looking for higher rates of return. Although I cannot conclude on a decrease in loan transactions, not a single person from Castile went to lend at 5 per cent in Tarazona. With apparently similar conditions, people in Castile preferred to lend at a lower cost in Castile than to lend in Aragon.

These results clearly display how with almost no transportation costs, the market of private annuities was fragmented, which could be a result of jurisdicational fragmentation.

**Capital market and jurisdictional fragmentation**

Despite the union of the Crown of Castile and the Crown of Aragon in 1469, the monarchy was divided across a variety of kingdoms (those of Castile, Aragon, Valencia, Mallorca, Navarre, Principality of Catalonia, and Basque Provinces). Each one had its own legal and

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68 One *real de vellón* was worth a hundredth of one British pound.
69 Archivo Histórico de Protocolos de Tarazona (hereafter AHPT), for 1725: *cajas* 420/02 and 442/02, for 1734-7: *cajas* 459/02, 447/01, 469/01, and 475/02.
70 Some notaries’ records are missing, which makes impossible to have an exhaustive idea of the lending activity in Tarazona for these years.
political constitution (fueros). The fueros of estates, guilds, towns, territories and the Church provided special rights entitling them to make decisions about taxes, economic regulations, currencies, weights and measures, as well as forms of social and political organization. Two outcomes of jurisdictional fragmentation may have affected capital market integration between Castile and Aragon. Firstly, currencies were different and lenders had to transact in the currency of the kingdom in which they drew the contract. However, it is clear that the advantage given by the spread of 2 per cent is higher than the exchange fee. Secondly, more importantly, Castile and Aragon had different judicial systems, implying a legal risk. Even after the promulgation of the Nueva Planta decrees by Philip V between 1707 and 1716, historic territories’ legal systems have not been hugely affected. Aragon kept its own civil law and Aragonese subjects abided by the Fueros y Observancias of the kingdom of Aragon. Castilian subjects, however, were under the rule of the Nueva Recopilación de Leyes of Castile. Clearly, this difference affected annuities contracts, especially small loans for which fixed transaction costs were proportionally higher.

First of all, contracts differed between regions; containing five conditions in Castile versus three in the kingdom of Aragon. Additionally, conditions on annuities decreed several capital mobility constraints. For example, the fourth condition in Castilian annuities implied that ‘they (the borrowers) cannot sell, give, exchange, swap, nor in any case alienate it (the collateral) to anyone forbidden by the law, except to those who would be lay, plain, and trustworthy, native from these kingdoms’. This meant that the borrower could only sell its annuity to a person living in the same jurisdiction as that of the annuity collateral, henceforth limiting capital mobility. Likewise, in order to draw the contract, the number of witnesses required differed by jurisdiction. The witnesses’ role was of the highest importance, as they were guarantors of the information provided by the borrower. Their quantity, three in Castile versus two in Aragon, and the jurisdiction they came from was therefore extremely important in guaranteeing contract enforcement. On top of that, civil law in Aragon tended to favour natives over foreigners (subjects from another jurisdiction). For instance, Aragonese public authorities (the Cortes of the kingdom of Aragon) demanded that public institutions borrowed via censales from natives only.

When the borrower did not pay the rent, trials took place in the same jurisdiction as where the contract had been signed. For example, Mr X who lent Mr Y some capital at 5 per cent in Aragon would have sued Mr Y in Aragon. This implies that Mr X would have been judged in a jurisdiction with different laws to his own. Until the beginning of the eighteenth century, even local languages were used in judicial processes. All these differences imply that the Castilian and Aragonese had very little incentive to lend to each other despite the 2 per cent spread between jurisdictions.

Another possible explanation for the absence of arbitrage between kingdoms is that two different products were concerned. Lending at 5 per cent might allow for riskier projects, whilst at 3 per cent more collateral may be required. Therefore, less risk-taking borrowers would go to the Castilian side, whilst riskier ones would go to the Aragonese side. However, the analysis of annuities contracts in Castile and Aragon does not show any difference in the

71 The Nueva Planta decrees were a number of decrees where Philip V suppressed the institutions, privileges, and the ancient charters of almost all the areas of the Crown of Aragon (Aragon, Catalonia, Valencia, and Mallorca). However, these decrees were never enforced except in Valencia, and Aragon kept its civil law.

72 ‘no los e de poder ni puedan vender donar trocar cambiar ni en manera alguna enajenar a ninguna de las personas prohibidas por derecho excepto a las que fueren legas llanas y abonadas naturales de estos reinos’. Own translation. AHPS, caja 2367, censo between Felipe Morales and Don Pedro Garcia’s pious memories on 9 July 1725.


74 This changed with the Nueva Planta decrees.
kind of collateral given as guarantee and in the type of activities financed. Clearly, jurisdictional fragmentation implies legal fragmentation; hindering capital mobility and therefore market integration, which is all the more remarkable when considering small loans.

**Conclusion**

Achieving market integration is a long path. On one hand, the demand for very large loans could count on the capacity of vast networks of ecclesiastical institutions to cross borders. On the other hand, local control over justice and different legal systems imposed massive transaction costs on local credit market activities. Legal fragmentation increased legal risk in the capital market and impeded capital mobility between historic territories.

**References**


Appendix

Private annuities in Castile and Aragon, 1725 and 1735 (grams of silver)

<table>
<thead>
<tr>
<th></th>
<th>Castile(^a)</th>
<th>Aragon(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of contracts</td>
<td>56</td>
<td>32</td>
</tr>
<tr>
<td>Total amount</td>
<td>104,085</td>
<td>59,150</td>
</tr>
<tr>
<td>Mean</td>
<td>1,858</td>
<td>1,850</td>
</tr>
<tr>
<td>Median</td>
<td>770.5</td>
<td>567</td>
</tr>
</tbody>
</table>

\(^a\)Ágreda, Noviercas, and Ólvega.
\(^b\)Tarazona.

*Sources*: see text.
Monetary and fiscal policy in England during the French Wars

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There is no neat way to distinguish monetary policy from debt management, the province of the Federal Reserve from that of the Treasury. Both agencies are engaged in debt management in the broadest sense, and both have powers to influence the whole spectrum of debt. James Tobin (1963)

We analyse the fiscal and monetary policies implemented in Britain to finance the French Wars (1793-1815). The 22 years of almost uninterrupted warfare put an unprecedented strain on British public finances that was in the following only equaled during WWI. In 1819, Britain’s debt-to-GDP ratio peaked at 260 per cent. Our first contribution lies in explaining how such a high public indebtedness was sustained. We concentrate particularly on the role played by the Bank of England (BoE henceforth) and present new hand-collected balance sheet data that sheds light on how the BoE intervened in government debt markets. We also detail how Britain organized its exit strategy from inflationary war finance and substantial debt accumulation; herein resides our third contribution.

1. Setting the stage: institutional circumstances and war finance

The French Wars (1793-1815) encompass the events related to Europe’s political reshuffling following the French Revolution and Britain’s struggle against Napoleon. At the onset, it was not clear that Britain would establish herself as the sole world power for the century to follow. As Knight (2013) writes:

Most people except a very few scholars ... do not realize how vulnerable Britain was at this time. It was a world war in all but name, with ferocious fighting right to the finish between two systems of government, each using every possible resource to overcome the other. A British victory was finally achieved but only through radical efficiencies in the nation’s economic and political life.

Britain’s naval, commercial, and, to a certain extent, colonial supremacy had its root in an institutional environment that allowed mobilizing war funding to a hitherto unprecedented scale. By the time the French Wars had to be financed, a system of institutions had been put into place that exerted sufficiently strong constraints on the Executive for contemporaries to exclude the possibility of outright default (North and Weingast, 1987; O’Brien, 2006; Stasavage, 2007; Sussman and Yafeh, 2006). Abundant private savings, therefore, financed an ever-increasing public debt that was used to wage the war. England had started the French Wars in 1792 with an already high debt-to-GDP ratio of 122 per cent, a legacy of the wars since the Glorious Revolution. By the end of the war in 1815, the debt-to-GDP ratio had reached 226 per cent; it eventually stabilized at 260 per cent in 1821 (see figure 1).

75 The views expressed herein are those of the author and do not necessarily reflect those of the Banque de France.
Following the usual practice, expenditures during the first years of the war were paid for by issuing long-term government debt. Subsequently, the national debt doubled during the first six years of unsuccessful warfare against Revolutionary France, causing doubts regarding the stability of public finances: between February 1793, the beginning of the French Revolutionary Wars, and February 1799, the price of consols fell by 26 per cent, to levels that had not been reached till the 1720s. Under these circumstances, William Pitt the Younger introduced Britain’s first income tax in 1799 (Patrick O’Brien, 1988).

In the peak years of the war (1808-15), this new tax raised about the same amount as customs, 18 per cent of total revenues. More broadly, in the second part of the French Wars, Britain abandoned the tax smoothing policy that it had followed for the previous century. War expenditures were now financed by taxation. Other than the introduction of income tax, tax rates were increased on a number of already existing taxes. Subsequently, Britain had a primary surplus between 4 and 5 per cent of GDP in each of the years 1803-13. Only the final surge in 1814-15 was financed by borrowing. Of course, the primary surplus was not sufficient to service the debt that had been left from the previous century, including the first part of the French Wars. Hence, the government was forced to continue to borrow in each year of the war.

In addition, in 1797, the Bank of England suspended the convertibility of the paper pound into gold. Through the suspension of the gold standard, the monetary policy framework was adapted to facilitate the financing of public short-term debt. Once the constraints imposed by the gold standard were done away with, it became possible to accommodate the external drain of specie caused by Britain’s expenditures on the Continent, to grant the means of payment necessary for internal transactions while absorbing increasing public debt issues (Bordo and White; 1991).

Following the suspension of gold payments in 1797 the BoE’s balance sheet increased by 150 per cent until 1815, mostly through the expansion of government bills. This policy was set with the expectation of an exit strategy: after the war, the government would issue long-term bonds – in turn financed by future taxes – to redeem some of the short-term bills held by the Bank of England. However, rolling back the increase in government debt outstanding proved difficult even once the war had ended in 1815. While the income tax was almost instantly revoked after the victory at Waterloo, after-war depression and expenses to wind down the Army and Navy after almost a quarter of a century of warfare weighed on the public budget.

The suspension of the gold standard was accompanied by substantial degrees of debt accumulation and inflation. By the time discussions regarding the gold standard’s resumption started after Napoleon’s final defeat at Waterloo in 1815, the price level exceeded its 1797 level by 22.3 per cent (Gayer et al., 1953). In these circumstances, returning to the pound’s prewar parity would come at high deflationary cost. In particular, wartime inflation had to be made undone by peacetime deflation in order to peg the paper pound to its prewar gold content. The debate surrounding the resumption of cash payments was very lively and another option – namely, getting back to the gold standard at a devalued pound – was by no means precluded a priori (Acworth, 1925; Fetter, 1965; Kindleberger, 2000). Not only would devaluation have spared the war-ridden economy from deflation and its detrimental effects on
economic activity, but by decreasing the purchasing power of the pound, it would have alleviated the burden of outstanding debt.

This had a bearing on whether people anticipated that the monetary and fiscal expansion and the redistribution of wealth that they had caused would be reversed. As pointed out by Chamley and Polemarchakis (1984), the BoE’s monetary expansion affected prices because it had an immediate fiscal counterpart. Moreover, as resumption of the gold standard was a remote prospect, so was the reversion of the fiscal and monetary expansion that had financed the French Wars.

The resumption of specie payments at the 1797 parity came in May 1821. Along with the definite resumption of specie payments – Peel’s Act, enacted 2 July 1819 – a separate act imposed the repayment of £10 million of government short-term debt and forbade the Bank to lend to government for more than three months without express parliamentary approval. Over the whole postwar period, BoE directors had insisted that an effective resumption was only possible if the government reimbursed a substantial amount of debt to the Bank. The counterpart of the advances made to the Treasury was the share of the note issue that the BoE was unable to control. The next section details the interactions between the BoE and the Treasury.

2. The Bank of England’s role in funding the war

a. The long end of the market
During the French Wars, not a single year went by without large war-related loans to the public (Grellier, 1812). These loans were issued against funded or consolidated debt. The latter was contracted as long-term debt, meaning that interest charges were funded by earmarked taxes. Powers over taxation lay with Parliament; long-term debt issues, therefore, necessitated the latter’s assent.

The BoE’s role in the management of funded debt was of a somewhat different nature than usually assumed. As the registrar of the Treasury, the BoE was in charge of managing the subscriptions to debt issues, of transferring stocks between old and new holders, and of paying due dividends. For these services the BoE was remunerated by the Treasury.

The BoE was less important as a holder of national debt. In the first decades of the eighteenth century, the chartered companies,76 in administering their capital stock, managed nearly the whole national debt. When the French Wars commenced in 1793, the BoE held a little over 5 per cent of outstanding funded debt. By the end of the wars, the rapid increase in debt meant that the BoE’s holdings represented less than 2 per cent of it.

b. Short-term debt and the money market
On the contrary, the BoE’s interventions were crucial for the circulation of short maturity government debt and more broadly for the functioning of the money market. Unfunded or floating debt was usually issued in anticipation of tax incomes. State departments would issue bills to obtain goods and services on credit and would redeem them once taxes arrived at the Exchequer. Unfunded debt took, hence, the form of Navy, Transport, Victualing and Exchequer bills, the latter accounting for the large majority of unfunded debt.

Beginning in 1697, the BoE undertook to manage the circulation of Exchequer bills, a service for which it was remunerated. At the beginning of each year, the BoE would advance funds against bills on the security of the malt and land taxes.77 The Exchequer would gradually reimburse the BoE upon receipt of tax revenues. The circulation of the bills entailed that it was the BoE that fixed the interest on them and that guaranteed their convertibility into gold. Therefore, investors effectively purchased a share of what the government owed the BoE when acquiring Exchequer bills, a feature that guaranteed a certain security and, hence, price to the bills (Philippovich, 1911).

76 The other two chartered companies were the East India Company and the South Sea Company.
77 5 Anne, c.13.
Moreover, as soon as Britain went to war in 1793, the already usual practice of advancing funds for Exchequer bills without parliamentary authorization or funding was officially legalized (a practice not in compliance with the Bank’s Foundation Act). Thus, bills had the great advantage of not needing parliamentary approval and were largely issued to finance unforeseen expenditures. This possibility became particularly important towards the end of the war when unexpected outlays became abundant. Bills financed by the BoE were used to pay the dividends on long term debt, to sustain the British and Irish Sinking funds, and of course to cover excess charges (the report regarding the resumption of the gold standard issued in 1819 contains a transcript of communications between the BoE and the Exchequer).

Figure 2: BoE’s dealing in Exchequer bills

Finally, the BoE would purchase bills directly in the market in order to sustain their prices. Exchequer bills were accepted in the payment of taxes. In order to keep them in circulation, it was essential that they be kept at a premium. Holders had an incentive to sell them on the secondary market rather than using them for the payment of taxes. The adjacent excerpt from the Resumption report recapitulates the interventions of the BoE in the market for Exchequer bills (figure 2).

Source: Second Report from the Secret Committee on the Expediency of the Bank Resuming Cash Payments, 1819

It appears clearly that the BoE acted as a backstop on the market for Exchequer bills with the intention to influence prices. Moreover, as the funds advanced against Exchequer bills were used for a plethora of objectives, the BoE’s funding of them can be understood as the definitive policy measure that kept British public finances sustainable.

So far, the statistics that could illustrate the Bank’s activities are scant. Figure 3 depicts the evolutions of the BoE’s government debt holdings and the unredeemed capital of short-term debt. Juxtaposing the two series can only give rough indications of comovement since the two series do not cover the same time span. BoE balance sheet statements were recorded at the end of February and August (figures reported here were computed as averages for given years as in Mitchell, 1988). Outstanding capital of unredeemed unfunded debt was recorded at the close of financial years. However, the correlation between the two series is positive and high (0.88). In addition, the public securities the BoE held on its balance sheet, covered roughly 70 per cent of outstanding short-term debt.

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78 The latter ended from 1752-99 on the 10th of October, from 1801-54 on the 5th of January, and from 1855-1980 on the 31st of March.
Figure 3: *BoE government short-term debt holdings*

We are in the process of hand-collecting weekly balance sheet data detailing the number of Exchequer bills issued on the primary market and purchased by the BoE on the secondary market. We will supplement these data on the volumes of interventions with another hand-collected dataset of daily prices for Exchequer bills. Taken together, these data will allow us to assess quantitatively the size of the BoE’s interventions and their impact on prices.

_Sources_: Mitchell, 1988

**c. From the short to the long end of the market**

The management of unfunded debt encompassed also an operation called funding. The latter procedure entailed converting bills into bonds and, therefore, increased funded debt by the amount it decreased the unfunded one. As such, this operation involved no transfer of cash from the public to the government. Outstanding bills were converted into bonds of an equivalent market value, hence the importance of keeping them at a premium. Finally, the BoE stood ready to cash the bills of those holders not willing to convert.

Funding created long-term debt. However, while parliamentary authorization was necessary before issuing standard long-term debt (mostly in the form of consols), Parliament only intervened to _ex post_ sanction the creating of long-term debt through funding operations. In particular, once the bills were converted into 4 or 5 per cent denominations of bonds during war-time, they also became convertible into 3 per cent consols when peace was concluded (Chamley, 2011). Conversions, therefore, reduced the government’s interest bill over the longer term and were never opposed.

Funding operations were undertaken beginning 1795 but remained rare and sporadic for the first years of the wars. When the war intensified after 1809, funding operations became the rule, providing sometimes as much as 40 per cent of yearly long-term funding. This was the case in 1797, 1810 and 1811. In 1819, long-term debt creation originated solely in the conversion of short into long-term debt. On average, converting bills into bonds accounted for 22 per cent of war funding (27 per cent for the period during which the gold standard was suspended).

Combining the interventions of the BoE on the shorter end of the market with the possibility of funding bills opened up a broad range of possibilities for funding public expenditures. These included not only the financing of unforeseen military expenditures. The payment of dividends to creditors of public long-term debt and the maintenance of the Sinking funds were essential to safeguarding the public’s reputation as a worthy debtor. For all these dealings it was essential that the BoE advanced funds against Exchequer bills. On the BoE’s balance sheet fiscal and monetary policy met: the public securities the BoE held as assets backed its liabilities that circulated as currency. Thus, the evolutions of BoE’s balance sheet had their counterpart in the Treasury’s debt management.

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New money and credit aggregates for Ireland, 1840-1921: construction and implications

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I
In an extended version of this paper, we construct new money and credit aggregates from primary sources for the interesting years between the Famine and independence. In the absence of annual estimates of output, the monetary data is used to shine light on the somewhat dark subject of cycles in Irish economic activity. In addition to the monetary data, the financial data is presented as evidence of a financial revolution in Ireland between the 1890s and 1900s. However, as a consequence of the constraint on space, we focus on the monetary data as opposed to the credit, and on its implications instead of its construction.

II
The annual narrow and broad money series are shown in figure 1. The first important fact that emerges from the data is the difference in the growth rates of the two series. Prior to the First World War, narrow money grew on average at 0.3 per cent per year, while broad money grew on average at 2.2 per cent, which led to a five-fold increase in 74 years.\(^{79}\) The divergent paths of the series can be firstly attributed to the 1845 Bank Act’s effective ceiling on note issuance, which channelled credit through ‘uncontrolled’ deposit creation (\(M3\)) with cheques circulating in place of notes and secondly to the small relative changes in the opening and closing stocks of silver and copper coin.\(^{80}\) In contrast, between July 1914 and November 1918, the monetary base increased by a factor of 3.5. Interestingly, the magnitude of the increase was greater in Ireland than in the wider United Kingdom, where the monetary base increased by a factor of 2.5 over the same interval.\(^{81}\)

Figure 1: New Annual Narrow and Broad Money Series, 1840-1921

Notes and sources: Millions of pounds on y-axis.

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\(^{79}\) Average growth rates are calculated econometrically.

\(^{80}\) Barrow, *The Emergence of the Irish Banking System*, p. 185; P.P. 1837, p. 264.

\(^{81}\) Capie and Webber, *A Monetary History of the United Kingdom*, pp. 56-7.
Having established the broad trends in the monetary aggregates, we now turn to cycles. Table 1 displays the peaks and troughs in the series as determined by the Harding and Pagan algorithm.\(^8^2\) The algorithm defines a peak in the natural logarithm of a time series \(y\) at time \(t\) as 
\[
\sum_{k=1}^{k_0} (y_{t-k} - y_{t}) < 0 < y_{t} + \sum_{k=1}^{k_0} (y_{t+k-1} - y_{t+k})
\]
where \(k_0\) is the symmetric window parameter and is equal to 1 for yearly data, and a trough as 
\[
\sum_{k=1}^{k_0} (y_{t-k} - y_{t}) > 0 > y_{t} + \sum_{k=1}^{k_0} (y_{t+k-1} - y_{t+k})
\]
subject to the criteria that a cycle must last at least 1 year while a phase must last at least 2 years. The main advantage of this approach is the ease of interpretation. In log de-trended data, one looks for peaks and troughs in the growth rate of a cycle. As a consequence, a reduction in the growth rate of a contractionary (expansionary) cycle will be classified as an expansionary (contractionary) regime even though the level of the series continued to fall (rise).

Table 1: Broad money supply turning points

<table>
<thead>
<tr>
<th>Peak</th>
<th>Trough</th>
<th>Amplitude (per cent)</th>
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<tr>
<td>1841</td>
<td>1842</td>
<td>-1.75</td>
</tr>
<tr>
<td>1846</td>
<td>1848</td>
<td>-26.48</td>
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<tr>
<td>1856</td>
<td>1857</td>
<td>-6.72</td>
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<tr>
<td>1859</td>
<td>1863</td>
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</tr>
<tr>
<td>1866</td>
<td>1867</td>
<td>-0.36</td>
</tr>
<tr>
<td>1876</td>
<td>1880</td>
<td>-16.89</td>
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<tr>
<td>1882</td>
<td>1885</td>
<td>-8.78</td>
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<td>1886</td>
<td>1887</td>
<td>-4.65</td>
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<td>1893</td>
<td>1894</td>
<td>-0.22</td>
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<tr>
<td>1900</td>
<td>1901</td>
<td>-1.95</td>
</tr>
<tr>
<td>1904</td>
<td>1905</td>
<td>-1.75</td>
</tr>
</tbody>
</table>

| Mean duration of contractions (years) | 1.82 |
| Mean duration of expansions (years)  | 4.40 |
| Mean amplitude of contractions       | -8.03 |
| Mean amplitude of expansions         | 28.14 |

In our discussion of the results of this exercise, we will incorporate insights from other cyclical indicators such as consumer prices, asset prices, real interest rates, agricultural output, property transactions and nominal wages where they are available. The first result that emerges from table 1 is the unprecedented contraction during the Famine. The broad money supply contracted by a quarter and was entirely driven by reductions in narrow money (known as high powered money in this context) – the currency-deposit ratio and reserve-deposit ratio actually lent against the wind by applying upward pressure on the money stock. The annual narrow money series fell by 35 per cent during these years, and did not recover until 1882. However, the monthly monetary base shown in figure 2 gives a more detailed view. The peak actually came in November 1845 and the trough in August 1849 with a swing between the two of -47 per cent. To our knowledge, this is a record contraction in this monetary aggregate in modern economic history.

The monetary aggregates appear to have declined more sharply than other cyclical indicators during the Famine. Property transactions, for example, increased 8 per cent between 1846 and 1848, which potentially reflects distress sales.\(^8^3\) The stock market index, in contrast, decreased by 10 per cent, but this seems to not fully capture the extent of the catastrophe.\(^8^4\) It may be that the markets had already priced in the risk of a future agricultural crisis or that the stock market index is more representative of the commercial economy as

\(^8^2\) Harding and Pagan, ‘Dissecting the Cycle’.

\(^8^3\) O’Rourke and Polak, ‘Property Transactions in Ireland, 1708-1988’.

\(^8^4\) Hickson and Turner, ‘Pre- and post-Famine Indices of Irish Equity Prices’. The December figures of the index weighted by market capitalisation are used in the calculations.
opposed to the subsistence economy.\textsuperscript{85} Nominal wages were stagnant, which suggests that there were either nominal rigidities in the labour market or that the reduction in labour supply was offset by the reduction in labour demand. In terms of prices, despite the decline in the broad money supply, urban prices increased 63 per cent between 1846 and 1847, while rural prices more than doubled.\textsuperscript{86} These facts jointly give an impression of the severity of the supply shock. As a result of these volatile price dynamics, absolute real interest rates were extremely high during and immediately after the Famine (see figure 3).

\textbf{Figure 2: New Monthly Narrow Money Series, 1840-1921}

\textbf{Notes and sources:} Millions of pounds on y-axis.

\textbf{Figure 3: Ex-post Real Interest Rate, 1840-1921}


The real rate is calculated as $r = \frac{(1+i) - (1+m)}{(1+m)} - 1$.

\textsuperscript{85} Ibid.

\textsuperscript{86} Kennedy, ‘The Cost of Living in Ireland’.
The next largest contractions in the broad money supply came during the recessions of the early 1860s (-18.81 per cent) and late 1870s (-16.89 per cent). The data supports Ó Gráda’s view that although “no post-Famine recession matched that of the late 1840s, those of the early 1860s and 1879-81 were serious enough”. Each of these recessions was triggered by severe reductions in agricultural output, a sector in which roughly half the population was still employed in. In the 1860s recession the volume of agricultural output fell by 22 per cent from peak to trough, while in the 1870s the same variable declined by 18 per cent. In contrast to the Famine, property transactions moved procyclically in the 1860’s recession but were countercyclical once more in the recession of the late 1870s. The stock market index was again countercyclical but perhaps did not reflect the magnitude of the fall in agricultural output. In the first recession the index fell by 2 per cent and by 9 per cent in the next.

The other major contractions occurred around bank failures. The first was the failure of the Tipperary Bank in 1856 due to ‘gigantic’ fraud by one of its owners, John Sadleir. As a consequence, the public temporarily lost confidence in the banking system, which resulted in the Belfast, David La Touche & Co and the National seeking help from the Bank of Ireland. There is evidence of contagion in the monetary base, which began to decline from January 1856, the month of Sadleir’s suicide. However, by October narrow money had completely recovered from this brief crisis, which explains why broad money actually increased in 1856 relative to 1855. The trough in 1857 was associated with the wider international crisis, and should not therefore be confused with the short-lived Tipperary crisis. The monetary base began to decline in November 1857, when London’s largest bill broker, Sanderson and Company, failed following the propagation of a banking crisis from New York to London.

The second major contraction associated with a banking failure was the Munster crisis of 1885. While previous research on this crisis has suggested little contagion, we find that the monetary base fell by 19 per cent between December 1884 (when the Bank of Ireland expressed public doubt in the bank) and July 1885 (when it closed its doors), while the annual broad money series declined by 9 per cent. Ó Gráda attributed the failure of the Munster to the poor banking supervisory regime in nineteenth-century Ireland, which is plausible given the misconduct of the Tipperary earlier in the century.

While the turning points in the broad money supply have coincided with the significant events in nineteenth-century economic history, it would be useful to know to what extent the series can shine light on the hitherto dark subject of historical Irish business cycles more generally. In the United States up until the 1970s, there had generally been a one for one correspondence between monetary and business cycles. Although we cannot test this with Irish data, it is possible to test the extent to which the broad money supply has been a good indicator of historical business cycles in the wider United Kingdom. To do so, we use the Harding and Pagan algorithm to identify turning points in the U.K. broad money supply and U.K. nominal GDP at factor cost and code expansionary regimes as 1 and contractionary regimes as 0. It is then possible to calculate a concordance index between the two variables for the overlapping years for which data is available (1870-1920):

89 *Bankers’ Magazine*, 1857.
90 Ó Gráda, ‘The Last Major Irish Bank Failure before 2008’.
92 Ó Gráda, ‘The Last Major Irish Bank Failure before 2008’.
94 Capie and Webber, *A Monetary History of the United Kingdom*; Hills et al., ‘Three Centuries of Data’.
The concordance of the broad money supply and nominal GDP for the United Kingdom was 0.78, which implies that the two were in the same regime 78 per cent of the time and were therefore strongly pro-cyclical. Clearly, this is not perfect concordance nor is it direct evidence from Ireland. However, in the absence of higher frequency estimates of Irish GDP, table 1 provides a good approximation of the Irish business cycle along with information about the relative severity of each episode.

III

The monthly narrow money supply exhibited a regular seasonal pattern. Figure 4 shows mean monthly levels, which were calculated with a regression with no intercept and a dummy variable for each month. The graph shows that narrow money was typically higher around the time of the harvest in the autumn and lower at other times of the year. Robert Murray, Inspector of the Provincial in 1841, described a similar path, “from about the 1st of October on to about the 1st of February the circulation is increasing, and from the 1st of February down to the 1st August it is usually diminishing when it reaches its minimum, and it expands again after the harvest”.  

Figure 4: Monthly Variation in Narrow Money Means

![Graph showing monthly variation in narrow money means.]

Notes and sources: Millions of pounds on y-axis. Horizontal line represents mean of £9,656,196.

Essentially, small farmers sold their produce at market to merchants in exchange for notes, which had either been withdrawn by the merchant from a bank account or borrowed from a bank. In both instances the narrow money supply would increase, with predictable consequences for the broad money supply and credit. In the former case, the broad money supply would decrease by a disproportionate amount because the money multiplier was always greater than 1. In the latter case, the broad money supply would be unaffected, but credit would increase instead. Once the harvest had been sold, narrow money would fall as the farmers deposited the season’s earnings or paid their landlords who would in turn deposit the money. The merchants, who typically exported the produce to Britain, would then discount English bills at Irish banks. If the merchants funded their business through deposits, the broad money supply would increase.

\[ c_{t_{1}} = \frac{1}{T} \sum_{t=1}^{T} [C_{t}^{y}(1-C_{t}^{y})(1-C_{t}^{y})] \]  

\[ 0.78 \]

95 P.P., 1841, p. 244.
money supply would then return to its previous level. If the merchants funded their business through credit, then credit would return to its normal level.

If we split the sample in December 1880 to give two equal sub-periods of 492 months each, we can crudely assess whether seasonality was increasing or decreasing over time. The coefficient of variation declined from 0.051 in the 1840-80 sub-sample to 0.038 in the 1881-1921 sub-sample. The reduction in the seasonality of the narrow money supply may be related to structural change. In 1841 53 per cent of the labour force was employed in agriculture. By 1911 agriculture’s share had fallen to 47 per cent. Clearly, the seasonal pattern in the narrow money supply was partly related to the income of merchants and farmers, as one would expect from a classic money demand function where money is related to the nominal interest rate and output. In this way, the seasonality in the narrow money supply is not only reflective of the intra-year movements in agricultural income but also of wider national income.

IV

In the absence of annual GDP estimates, we used new monetary data to discuss possible cycles in economic activity at the annual and monthly level. Firstly, we showed that the broad money supply was highly concordant with nominal GDP for the U.K. as a whole. Secondly, we presented the turning points in Irish broad money, which coincided with the major recessions that have been identified in the literature. The benefit of this approach is that the broad money supply is consistently procyclical, and as opposed to qualitative discussions, gives a firm idea of the absolute and relative magnitudes of contractions and expansions. Thirdly, we calculated monthly means for the narrow money series, which clearly followed the path of agricultural income as discussed by a contemporary of the time. The result was understood in terms of a money demand function for a country with a large agricultural sector. The seasonality of the narrow money supply declined in the second half of the period studied here, which we attributed to structural change.

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Religion and development in Post-Famine Ireland

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Supervisors: Dr Christopher L Colvin & Professor John D Turner

Max Weber, with the publication of his seminal work *The Protestant Ethic and the Spirit of Capitalism* (1904/05), is often accredited with catalyzing a literature examining the association between religion and economic growth. Yet, about the same time as Weber’s thesis emerged, Horace Plunkett initiated a related debate on the relevance of religion in Irish development. Like Weber, Plunkett (1905, pp. 101-2) viewed Catholicism as inferior to Protestantism in development terms, citing its deficient economic traits and lesser industrial tendencies. Yet, unlike the Webersian thesis which motivated a century of scholarship, debate on the Irish case seems to have waned in the ensuing decades due to sensitivities surrounding the religion question. In this paper that debate is renewed, and an alternative narrative is advocated which contrasts with Plunkett’s assertions regarding the inimical nature of Catholicism in economic advancement. Rather, it is proposed, the patterns of religious convergence and indifference identified here fit more closely with the notion of Catholic embourgeoisement in the Post-Famine period.

Central to this revised interpretation, as emphasized in the work of Akenson (1988), is the distinction between correlation and causation in the Irish case. For while Ireland, with its Catholic-Protestant cultural dichotomy, provides an ideal empirical setting for examining religion as determinant of growth, the clustering of religious groups in particular regions can lead to the ‘guilty by association’ trap. Moreover, given discrimination from influences such as the Penal Laws, Catholics were generally relegated to the lower strata of society and constrained in their ability to advance economically, meaning that the Catholic-development relationship needs to be seen in light of historical inequality. Indeed, even Plunkett (1905, pp. 104-5), acknowledges a variety of historical factors such as educational deprivation, property restrictions, and social and political exclusion as attributing to Catholic economic backwardness.

In fact, when the development trajectory of Catholicism in the Post-Famine era is more carefully appraised, its transition through time seems a favourable one. For example, both Akenson (1988) and O’Rourke (2007) downplay the idea that Irish Catholicism was causally linked with inferior economic outcomes, and instead suggest that religious differences were small. Moreover, Kennedy (1978) proposes that the influence of the Catholic Church in nineteenth-century development was a positive one, contrasting with Plunkett’s grievances about its role in Irish development. Indeed, the Post-Famine Catholic experience might have been more correctly described as an embourgeoisement,97 with Miller (1988, p. 124; 2008, pp. 89-90) pointing to the Church, Irish nationalism, and ‘strong-farmer’ families as being important factors in this respect; the Church through its influence in education and religion, nationalism through its influence on political consciousness, and ‘strong-farmer’ families which promoted practices such as impartible inheritance and the dowry.98 This validity of this alternative thesis is considered in the remainder of this paper.

**Empirical strategy**

To assess the Catholic-development relationship, a cross-sectional econometric methodology is adopted which analyses the association between Catholicism and a variety of economic and financial indicators at each decennial point from 1871 to 1911. This approach provides at least

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97 The idea of a Catholic embourgeoisement is more fully discussed in the working version of this paper.
98 Furthermore, by disproportionately affecting the lower social strata (Daly 1981, pp. 31-2; Ó Gráda 1995, p.251; Larkin 1972, p. 639) and Catholics (Connolly 1987, p. 3), the Famine may have had an important impact on the Catholic-development relationship.
three distinct advantages. First, by looking at the relationship between Catholicism and development at each decennial point, a view of any changes in the relationship through time is provided, allowing the transition to be observed in light of historical disadvantage and discrimination. Second, by using a variety of economic and financial development indicators, the specific development channels through which any religious ‘effect’ flows can be more precisely delineated. And third, by employing an instrumental variable strategy to instrument for Catholicism, causality concerns are ameliorated.

The data are mainly drawn from House of Commons Parliamentary Papers, and supplemented by other sources such as the U.K. Data Service’s Irish Historical Statistics Database, Vaughan and Fitzpatrick’s (1978) Irish Historical Statistics, and Thom’s Directory. The dataset includes the key explanatory variable Catholicism, together with alternative measures of development which will mainly act as the dependent variable, and further explanatory controls. The measures of development employed can be broadly broken into economic and financial strands, and include illiteracy, professional occupational class representation, savings accounts, company formations, and bank branch prevalence. The control variables include Irish-only speakers, 1st or 2nd class housing, persons over sixty years, urbanization, as well as dummy variables for Dublin and Antrim where appropriate.

An OLS model is utilized in conjunction with a 2SLS model to confirm the validity of the patterns identified – helping to lessen endogeneity and omitted variable concerns. In the latter, Catholicism is instrumented using distance from Stranraer in Scotland, exploiting the diffusion of Protestants to Ireland via plantation. The idea being that distance from Stranraer will be positively associated with Catholic concentration at the county level, and thereby influence development outcomes through this channel. The instrument tests and 2SLS results support this instrumentation strategy.

Results

First, as shown in table 1, Catholicism is positively associated with illiteracy at the county level. However, over time the magnitude and statistical significance of the Catholic coefficients fall, and by 1901 Catholicism is no longer significant at standard levels. The decomposed R-squared values further reveal the declining relative importance of Catholicism in illiteracy variation through time, with its contribution to the R-squared value falling from 17.7 per cent in 1871, to just 1.6 per cent by 1911. By contrast, the persons over sixty years control variable becomes relatively more important across the period with its contribution rising from 3.2 per cent in 1871, to 12.7 per cent by 1911. As such, the results suggest an amelioration of Catholic disadvantage as evidenced in the religious convergence of illiteracy, while the rising importance of age is consistent with a temporal rise in development.

Second, as shown in table 2, a higher percentage of Catholics in a county is associated with a higher percentage of persons in the professional occupational class. Yet, again both the statistical and economic importance of Catholicism diminish over time as evidenced by the falling magnitude of the coefficients, and the lack of statistical significance in the final two decades. Moreover, the decomposed R-squared values, again similar to those for illiteracy, reveal the declining relative importance of Catholicism and the increasing relative importance of persons over sixty years through time.

Third, as shown in table 3, a higher percentage of Catholics in a county is associated with a lower number of savings accounts per person. However, the statistical importance of the Catholicism coefficient is dependent on the inclusion of a control variable for the professional occupational class, and to some extent its economic relevance also. Again, the

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99 This methodology is motivated by a contemporary literature which advocates a variety of alternative causal pathways where Catholic-Protestant differences may occur such as human capital (Becker & Woessmann 2009), trust (La Porta et al. 1997; Inglehart 1999), social values (Guiso et al. 2003; Arruñada 2010), and finance (Stulz & Williamson 2003; Hilary & Hui 2009; Kumar et al. 2011; Renneboog & Spaenjers 2012).

100 Full definitions of the variables and source information are provided in the working version of this paper.
decomposed R-squared values suggest that Catholicism is a less important explanatory factor in relative terms over time, contributing under 4 per cent in both specifications in 1911, compared to 14.3 per cent and 17.8 per cent in the 1881 specifications. By contrast, the professional occupational class control variable is especially important, and increasingly so through time, rising from 16.3 per cent to 39.4 per cent.

Finally, for company formations and bank branch prevalence Catholicism is not a statistically important factor (results not shown). Instead, location tends to matter more, with urbanization or being located in Dublin or Antrim often statistically significant. As such, religious differences do not appear to impact entrepreneurship or financial development in this regard.

**Conclusion**

In sum, this paper has generally demonstrated a diminishing negative or non-significant statistical association between Catholicism and development outcomes in the Post-Famine period. This contrasts with Plunkett’s assertions about Catholic economic backwardness, and instead suggests that, when observed through time, and in light of historical disadvantage, the Catholic transition was a positive one – corroborating historical evidence on Catholic embourgeoisement in the Post-Famine period. As such, these findings add a nuanced perspective to limited scholarship on the Irish case, and in doing so go some way to address the erroneous view that Irish Catholicism was inimical to development.

**References**


TABLE 1
The Effect of Catholicism on Illiteracy

<table>
<thead>
<tr>
<th></th>
<th>1871 CLS</th>
<th>1881 OLS</th>
<th>1891 2SLS</th>
<th>1891 OLS</th>
<th>1901 2SLS</th>
<th>1901 OLS</th>
<th>1911 2SLS</th>
<th>1911 OLS</th>
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</thead>
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<td>0.083**</td>
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Notes: Robust standard errors are in parenthesis. Decomposed R-squared percentage values are in brackets. Statistical significance is indicated by asterisking as follows: *** p<0.01, ** p<0.05, * p<0.1. Full table including the first stage results of the 2SLS and instrument tests are provided in the working version of this paper.
### TABLE 2

The Effect of Catholicism on Professional Class Representation

<table>
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<tr>
<th></th>
<th>1871 OLS</th>
<th>1871 2SLS</th>
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<th>1881 2SLS</th>
<th>1891 OLS</th>
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<th>1911 2SLS</th>
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Notes: Robust standard errors are in parenthesis. Decomposed R squared percentage values are in brackets. Statistical significance is indicated by asterisking as follows: ***, **, *, p<0.01, p<0.05, p<0.1. Full table including the first stage results of the 2SLS and instrument tests are provided in the working version of this paper.
<table>
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</tr>
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<td>Catholicism</td>
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Notes: Robust standard errors are in parentheses. Decomposed R-squared percentage values are in brackets. Statistical significance is indicated by asterisks as follows: 

*** p<0.01, ** p<0.05, * p<0.1. Full table including the first stage results of the 2SLS and instrument tests are provided in the working version of this paper.
Patents, exhibitions and markets for innovation in the early twentieth century: Evidence from Torino’s 1911 International Exhibition

Giacomo Domini, University of Siena
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Supervisor: Professor Michelangelo Vasta

Patents occupy a primary position among the measures of innovation, due to a solid tradition in the literature on the economics of innovation, and to their large availability for most countries and since very long ago in time. However, they represent only a part of the universe of innovation. Important historical evidence in this respect has been provided by Petra Moser (2005, 2011, 2012), analysing historical data from four universal exhibitions: a source, thus far unexplored, that includes both patented and non-patented innovations. Moser has found that most items in the exhibitions she studied (up to almost 90 per cent) were not patented, which demonstrates that much innovation occurred outside the patent system.

However, this does not imply that patents were a subset of exhibits: in fact, they might be largely disjoint sets, i.e. having a small intersection. To assess this, one should not only check how many exhibits were patented, but also what share of patents was exhibited. A low such share, coupled with evidence about non-patented exhibits, would lend credit to a view of patents and exhibits as largely different sets of innovations.

Even before this issue, however, comes the question whether exhibits do actually represent innovations. This certainly is the case for a part of them, but not necessarily for all. In fact, ‘numerous items on display were not patentable or even innovations; many comprised agricultural produce, interesting specimens of minerals and taxidermy, embroidery, and final goods that illustrated good workmanship or attractive design elements rather than innovation’ (Khan 2015, p. 32).

To account for this, the present paper introduces a new exhibition database, built so as to exclude obviously non-innovative items. By matching it to patent data, and employing it in discrete-choice analysis, the extent to which exhibition and patent data overlap is evaluated. This also involves speculation about the main function(s) played by the exhibition.

Torino 1911 database: methodological issues

The exhibition data employed in this paper come from a new database, which I have built, based on the Catalogo Generale Ufficiale of Torino’s 1911 International Exhibitions of Industries and Labour. This event, taking place from the 29th of April to the 19th of November 1911 in the former capital of the Kingdom of Italy, both geographically and culturally close to continental Europe, was officially joined by 22 foreign countries from Europe, Asia and the Americas (but exhibitors also came from other countries), and was visited by 7.4 million people.

The database does not list every single item that was displayed in Torino. Rather, it is aimed at providing an account of the manufactured products on display. Following a widely diffused practice, those products (theoretically) falling into divisions 0 to 4 of Standard International Trade Classification (SITC) have been considered as primary and therefore excluded. Alongside these, also non-technical publications, such as commercial statistics, legal arrangements and statutes, have been kept out of the database. The adopted criterion does not ensure that all observations in the database are innovative – which cannot be done, without introducing arbitrary and prone-to-error definitions – but excludes obviously non-innovative items. A total of 7,964 exhibits are included, amounting to no more than 36 per cent of the official total (22,271): this gives a good idea of the extent of the bias that would be introduced by considering all exhibits.
Exhibitors and patentees in Italy in 1911

In this analysis, the names of exhibitors in Torino 1911 are matched with those of economic agents granted a patent in Italy in the years 1909-12. Not all data from the Torino 1911 database are employed for this task, though. Only exhibitors coming from Italy, France, Germany, and Switzerland, have been selected. Foreign countries have been chosen because of their proximity and economic importance, making exhibiting and patenting in Italy particularly likely. Exhibitors other than individuals and firms (third-sector associations, educational institutions, governmental bodies) have been excluded because such types do not take out patents, apart from very rare exceptions.101 Furthermore, it is not accurate to make for them the assumption, which is reasonable for firms and individuals, that the decision to participate in the exhibition is based on ‘economic considerations’, i.e. made by evaluating the expected net benefit from exhibiting: in fact, such agents may have different motivations, including political and charitable ones. Including them would undermine the consistency and reliability of the analysis. In addition to exhibition data, information about all agents granted a patent in Italy in 1911 has been retrieved from the database by Nuvolari and Vasta (2015a).102 The result is a database, listing the names of all individuals and firms either exhibiting or granted a patent in Italy in 1911. For each observation, information is available about type, location, and technological class.103

Table 1: Joint exhibitors-patentees database: Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>Exhibitors</th>
<th>Patentees</th>
<th>Matched</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I F G S</td>
<td>I F G S</td>
<td>I F G S</td>
</tr>
<tr>
<td>Total</td>
<td>2231 1430 473 63 4197</td>
<td>1998 442 807 121 3368</td>
<td>467 118 98 25 708</td>
</tr>
<tr>
<td>Firm</td>
<td>1313 1019 398 53 2783</td>
<td>289 129 265 30 713</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>918 411 75 10 1414</td>
<td>1709 313 542 91 265</td>
<td></td>
</tr>
</tbody>
</table>

Firm exhibitor - Firm patentee 176 71 84 15 346
Firm exhibitor - Individual patentee 122 30 10 9 171
Individual exhibitor - Individual patentee 169 17 4 1 191

Note: I, F, G, and S denote Italy, France, Germany, and Switzerland, respectively.

Table 1 describes the joint exhibitors-patentees database. Comparing the first two blocks of the table reveals major differences in exhibitors’ and patentees’ distribution by type: two-thirds of the former are firms, while almost four-fifths of the latter are individuals.104 In both cases, individuals represent a larger share for Italy, clearly due to ‘home-court advantage’.

Out of 6,857 individuals and firms observed in this analysis,105 708 both exhibit and patent. Almost half of these matches correspond to firms, which both patented and participated in the exhibition as such (‘pure firms’). One-fourth patented as individuals, but exhibited as firms: these can be interpreted as ‘inventors-entrepreneurs’, who had managed to

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101 In 1911, the only patent granted in Italy to such a type of exhibitor was an ‘improvement in artillery spyglasses’, by the Artillery Precision Laboratory of the Italian Ministry of War.
102 I am grateful to the authors for kindly disclosing their data to me.
103 In order for patent data and exhibition data to be comparable, exhibition data have been reclassified into the simplified 14-industries version of Italian patent classification, adopted by Nuvolari and Vasta (2015a).
104 Such a large share comes as no surprise, in the light of historical economic literature, pointing out the important role played by independent inventors over the decades across the turn of the twentieth century (Lamoreaux and Sokoloff, 1999; Nicholas, 2010, 2011; Nuvolari and Vasta, 2015a).
105 This figure is calculated as exhibitors plus patentees minus matched.
set up innovative firms, commercially exploiting their patents, and therefore regarded the exhibition as a market for innovative products, in the same manner as ‘pure firms’ did. Finally, 27 per cent of matches are both patenting and exhibiting as individuals: these appear as independent inventors, using the exhibition as a market for ideas, i.e. to advertise their patents to potential investors, allowing the creation of a new firm, or to existing firms, willing to buy or license the patents.

Firms feature a higher matching rate than individuals in both exhibiting and patenting, but much more so for the latter than for the former: almost half of firm patentees participated in the exhibition, vis-à-vis just 13.6 per cent of individual patentees. This may indicate that most of the latter were ‘occasional’ inventors, who did not have the incentives or the resources to exploit economically their patents or to promote them in the market for ideas. On the contrary, the exhibition was an unmissable opportunity for innovative firms to advertise their products.

It can therefore be argued that the low overlap between exhibition data and patent data is a consequence of the reasons for exhibiting and for patenting being different: on the one hand, the main function of the exhibition appears to be that of a market for products. On the other hand, patents were mostly taken out by individual inventors, the majority of whom might never engage in production and sale, either because of the quality of their inventions being low, or because of financial constraints, that even good-quality independents might face.

Exhibitions were not only markets for products, though: 169 out of 3,762 (i.e. 4.5 per cent) of Italian exhibitors and patentees were ‘independent inventors’, both patenting and exhibiting as individuals. Lower figures for foreign countries can be easily explained by geographical, cultural and regulatory barriers. This indicates the presence of a niche of independent inventors, using the exhibition as a market for ideas. It is interesting to notice that some of them had their profession or title specified, in the exhibition’s catalogue, e.g. ‘engineer’ or ‘professor’, possibly in order to signal their quality. Among these are, for instance, Riccardo Arnò, Alessandro Artom and Gino Campos, who did not only patent their findings in Italy, but also in the U.S., which is an indicator of particularly high quality.

A discrete-choice model
A formal econometric framework will add further insights: in particular, a multinomial logit regression will be carried out, analysing the choice of the individuals and firms listed in the joint patentees-exhibitors database, among three possible options, namely patenting only (PO), exhibiting only (EO) and doing both (EP). The independent variables are: a dummy ‘firm’, a categorical variable indicating the technological class, and another categorical variable indicating geographical origin.

Regression output is presented in table 2. Two columns are displayed, corresponding to choices PO and EO; the third option (EP) is omitted, as it is the baseline outcome, against which the others are compared. The coefficients indicate the change in the relative probability of making a certain choice, with respect to the baseline choice, that is associated with the variable taking a certain value, instead of its baseline category (here, Torino for the geographical origin variable, and Construction for the industry variable). Positive (negative) coefficients denote an increase (decrease) in the relative probability.

First notice that for both options EO and PO the dummy Firm has a significant negative coefficient, though smaller in size and less significant for the former: this confirms

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106 This was particularly likely to be the case for Italians: Nuvolari and Vasta (2015a) show that Italian independent inventors, unlike their American, British and Japanese counterparts (Nicholas, 2010, 2011), patented lower-than-average-quality inventions.

107 The full-length version of this paper shows that the irrelevance of independent alternatives assumption holds in this analysis; hence the multinomial logit can be safely employed.
that firms are less likely than individuals to be involved in only one activity, in particular patenting.

Results about the geographical origin variable show that patentees outside Torino are significantly less likely to exhibit than those based in the exhibition’s host city, especially foreigners and, within Italy, those coming from North-East and Tuscany and Roma. Unsurprisingly, distance from the exhibition venue discourages participation. This negative effect does not appear so strong for farther away peninsular and insular Italy, but these are low-patenting regions.\textsuperscript{108} The results for option EO present more diversity: within Italy, exhibitors from the big cities of Milano, Genova and Roma are significantly more likely to patent. Large industrial cities produced relatively technology-intensive products, and were characterized by higher patenting activity. Both facts favoured a more frequent co-occurrence of patenting and exhibiting. A peculiar case is provided by the extreme south. Outside Italy, Swiss exhibitors are significantly more likely to patent, and French ones are significantly less so. This seems due to the former’s concentration in high-patent-intensity sectors (mechanics and electricity), and to the latter’s concentration in traditional, low-patenting sectors such as furniture and apparel.

Table 2: \textit{Multinomial logit regression results (N=6857). Note: *, ** and *** denote p < 0.1, p < 0.05 and p < 0.01, respectively}

\begin{table}[h]
\centering
\begin{tabular}{lcc}
\hline
& EO & PO \\
\hline
\textbf{Firm} & -0.477*** & -3.231*** \\
\textbf{Geographical origin} & & \\
Milano and Genova & -0.535*** & 1.056*** \\
Rest of North-West & -0.07 & 0.604*** \\
North-East and Tuscany & 0.269 & 1.450*** \\
Roma & -1.064*** & 1.623*** \\
Centre and South & 0.091 & 1.144*** \\
Extreme South and Islands & 1.169*** & 1.212*** \\
France & 1.051*** & 1.140*** \\
Germany & 0.148 & 2.579*** \\
Switzerland & -0.674** & 1.740*** \\
\textbf{Technological class} & & \\
Agriculture & -0.588** & -0.647** \\
Chemicals & 0.307 & -0.055 \\
Electricity & -1.315*** & -0.003 \\
Food and beverages & -0.508** & -0.315 \\
Machine tools, machinery, components and metalworking & -0.640*** & 0.005 \\
Mining & -0.172 & 0.251 \\
Other manufactures & 0.935*** & 0.762*** \\
Paper and printing & 0.657*** & 0.109 \\
Scientific instruments & 0.007 & -0.242 \\
Steam engines & -1.425*** & 0.448** \\
Textiles, apparel & & \\
& 0.911*** & 0.325 \\
& -1.211*** & -0.102 \\
& 0.114 & 0.810* \\
\hline
Constant & 1.846*** & 1.309*** \\
\hline
\end{tabular}
\end{table}

\textsuperscript{108} A divide between Northern regions (plus Tuscany) and (rest of) Central and Southern Italy is apparent from the maps in Nuvolari and Vasta (2015b), showing the geographical distribution of patents per million inhabitants in Italy in five benchmark years over the Liberal age (1861-1913).
As for the industry variable, in column EO significant negative coefficients are attached
to classes characterized by high mechanical content (especially Electricity, Steam Engines,
and Transport), indicating that exhibitors are more likely to patent than in the baseline
category. This can be attributed not only to high-patent intensity, but also to reverse-
engineering being relatively easy in these industries, which rendered very risky to exhibit
mechanical and electrical innovations, unless they were protected by a patent. The contrary
applies to Other manufactures (mainly comprising furniture), Paper and printing, and
Textiles, due to traditional, non-innovative manufactures prevailing in these sectors.

Conclusions
The present paper has provided two main contributions. The first is methodological: it has
advanced a criterion to ‘clean’ exhibition data from obviously non-innovative items, thus
improving the legitimacy of their use as a gauge of innovation, and the consistency and
reliability of analyses making use of them. The second is an assessment of the extent to which
patent data and exhibition data overlap, as proxies of innovation. To do this, a newly-
constructed database about the International Exhibition held in Torino in 1911 has been
matched to data about patents granted in Italy in that period.

One-tenth of the larger ‘universe of innovation’ thus obtained has been found to be
accounted for by both measures. It has been claimed that this is due to the reasons for
exhibiting and for patenting being different: on the one hand, the main function of the
exhibition appears to be that of a market for products. On the other hand, patents were mostly
taken out by individual inventors, the majority of whom might not be interested in this
function. However, evidence has been found of the presence of a niche of qualified
independent inventors, using the exhibition as a market for ideas, that is, to advertise their
findings to a selected public of potential investors, buyers or licensees.

Patenting and exhibiting have been observed to be significantly more likely to occur
together in the industries related to mechanics, than in other sectors. This has been explained
by exhibiting without a patent being particularly risky in these sectors.

For a full-length version of the paper with full references, please e-mail the author at the
address above

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Paper presented a WEHC Kyoto August 2015.
The revealed comparative advantages of late-Victorian Britain

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Supervisors: Dr Chris Minns & Professor Joan Rosés

Introduction

Given the voluminous literature on British trade during the late nineteenth century, it is perhaps surprising that no systematic estimates of Britain’s comparative advantages exist for any year prior to 1899, which were undertaken by Crafts (1989). Accordingly, the first part of this paper calculates indicators of revealed comparative advantage (RCA) and revealed symmetric comparative advantage (RSCA) for 18 British manufacturing industries for the years 1880, 1890, and 1900.

The next part of the paper identifies the factor determinants of Britain’s comparative advantages by subjecting the indicators of RSCA to a four-factor Heckscher-Ohlin model of trade. Here, the paper improves upon the work of Crafts and Thomas (1986) in two respects. First, whereas Crafts and Thomas infer Britain’s comparative advantages from just gross exports for the year 1880, this paper employs measures of Britain’s comparative advantages that have been normalized for the composition of world exports. Second, this paper extends their three-factor model to include another factor, material inputs, drawing upon data from the Census of production (1907).

In contrast to Crafts and Thomas, this paper finds consistent evidence that the comparative advantages of late-Victorian Britain were in the relatively labour non-intensive manufacturing industries. This finding remains robust even after controlling for human capital, as suggested by Harley (1974), using data from the Wage returns (1887). Indeed, by normalizing for the composition of world exports, British manufacturing during the late-Victorian era appears closer to the labour-economizing style of American manufacturing than had previously been thought.

Calculating Britain’s RCAs and RSCAs

Balassa (1965) advanced a method for determining comparative advantages indirectly, based upon the pattern of world trade. Assuming that countries actually traded according to their comparative advantages, Balassa argued that the pattern of world trade ‘revealed’ the comparative advantages of countries. Balassa’s method for calculating an indicator of RCA is expressed as follows:

\[
\text{RCA}_c = \frac{X_{c1}}{X_{n1}} / \frac{X_c}{X_n}
\]

Here, \( X \) refers to the current value of exports, \( c \) to the industrial country, \( i \) to the manufactured good, and \( n \) to the whole basket of industrial countries. The indicator of RCA is therefore the country-share of world exports of the manufactured good normalized for the country-share of world exports of total manufactured goods. An indicator greater than 1 implies a comparative advantage, an indicator less than 1 a comparative disadvantage. Specialization according to comparative advantage would, theoretically, cause a country’s indicators of RCA to cluster around \( X_{c1}/X_c \) (‘complete’ comparative advantage) and 0.

110 Ibid., p. 637.
(‘complete’ comparative disadvantage). However, empirically, indicators fall anywhere between these two values, oftentimes quite close to the threshold value. One reason is that the manufactured good, as defined, encompasses enough heterogeneity that a country may realize a comparative advantage in one variety of the good, but a comparative disadvantage in another variety of the good. This situation is especially likely when Balassa’s method is applied at the industry level, as is done by Crafts and by the present author.

Relying on Balassa’s method, indicators of RCA are calculated for 18 British manufacturing industries for the years 1880, 1890, and 1900. The 18 industries, listed in table 1, differ noticeably from the 16 industries for which Crafts calculated indicators of RCA.113 Crafts’ industries were predetermined in that he relied solely on Tyszynski (1951) for data on manufactured exports. Crafts’ industries are suitable for the period he considered, which was the early twentieth century. However, several of these industries are obviously unsuitable for the late nineteenth century, such as the electrical industry and the cars and aircraft industry. The textile industry also presents a problem. In 1899, textiles comprised 34 per cent of world manufactured exports and 46 per cent of British manufactured exports.114 Concentrating half of British manufactured exports and a third of world manufactured exports into a single industry obscures the actual comparative advantages held by countries, which differed based upon the particular class of textile. Therefore, for the purpose of calculating indicators of RCA for the late nineteenth century, textiles are divided into four separate classes.

Having obtained data on British manufactured exports per industry, the next step in calculating the indicators is to gather data on world manufactured exports per industry. This latter value is initially approximated by the manufactured exports, per industry, of Britain, Belgium, France, Germany, and the United States combined, as recorded in their respective government trade statistics.115 This step is immensely challenging due to the discrepant classifications of industries among the different government trade statistics. For example, the British trade statistics keep leather manufactures separate from saddlery and harnesses, whereas the trade statistics of other countries do not. The author reconciles such inconsistencies by ‘reconstructing’ industries using data from the finest levels of disaggregation reported in the trade statistics. In order to add together the values of the manufactured exports, per industry, of the five industrial countries, these values are converted to sterling using the exchange rates reported in Mitchell (1988).116

The manufactured exports of the five industrial countries accounted for most, though not all, manufactured exports in the late nineteenth century. In 1899, the manufactured exports of these countries accounted for 87 per cent of the manufactured exports of the 11 countries considered by Tyszynski and Crafts.117 A coverage rate of 87 per cent would suggest a rescaling factor (γ) of 1.15 for the value of manufactured exports, per industry, of the five industrial countries (Xn,i). Balassa’s original equation is therefore modified to include a rescaling factor:

\[ \text{RCA}_{UK} = \frac{X_{UK1}}{\gamma X_{n1}} \times \frac{X_{UK}}{X_n} \]  

[2]

It should be recognized that the six excluded countries were in earlier stages of industrialization, which were often characterized by light manufacturing, particularly of textiles. Therefore, a slightly more generous rescaling factor of 1.2 is applied to the light manufacturing industries, while a slightly more conservative rescaling factor of 1.1 is applied to the heavy manufacturing industries.

113 Crafts, ‘Revealed comparative advantage’, p. 130.
115 The titles of the government trade statistics are noted in the bibliography.
Next, the British share of world manufactured exports per industry \(\left(\frac{X_{UK,i}}{X_{n,i}}\right)\) is normalized by the British share of total world exports \(\left(\frac{X_{UK}}{X_{n}}\right)\). Data on the value of total British exports come from the *Annual statements*. Data on total world exports come from Lewis (1981). Table 1 presents the resulting indicators of RCA. It should briefly be observed that the ‘workshop of the world’ realized comparative disadvantages in a number of manufacturing industries, including clocks and watches; glass; leather and manufactures thereof; and silk manufactures.

<table>
<thead>
<tr>
<th>Industry</th>
<th>1880</th>
<th>1890</th>
<th>1900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beer</td>
<td>3.2</td>
<td>3.3</td>
<td>2.9</td>
</tr>
<tr>
<td>Cement</td>
<td>2.7</td>
<td>2.4</td>
<td>1.2</td>
</tr>
<tr>
<td>Chemicals, including dyestuffs, medicine, and paint</td>
<td>1.6</td>
<td>1.5</td>
<td>1.2</td>
</tr>
<tr>
<td>Clocks and watches</td>
<td>0.5</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>Coal</td>
<td>3.2</td>
<td>3.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Copper manufactures</td>
<td>4.3</td>
<td>3.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Cotton manufactures, including yarn</td>
<td>4.3</td>
<td>4.1</td>
<td>4.1</td>
</tr>
<tr>
<td>Earthenware and chinaware</td>
<td>2.4</td>
<td>2.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Flax, hemp, and jute manufactures, including yarn and cordage</td>
<td>3.2</td>
<td>3.2</td>
<td>3.1</td>
</tr>
<tr>
<td>Glass</td>
<td>0.9</td>
<td>0.9</td>
<td>0.7</td>
</tr>
<tr>
<td>Iron, steel, and manufactures thereof, excluding machinery</td>
<td>3.6</td>
<td>3.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Leather and manufactures thereof</td>
<td>0.8</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Machinery, including steam engines and locomotives</td>
<td>3.0</td>
<td>2.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Paper and manufactures thereof</td>
<td>1.0</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Rubber manufactures</td>
<td>2.3</td>
<td>2.3</td>
<td>1.9</td>
</tr>
<tr>
<td>Silk manufactures</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Spirits</td>
<td>0.5</td>
<td>1.2</td>
<td>2.3</td>
</tr>
<tr>
<td>Woollen and worsted manufactures, including yarn</td>
<td>1.9</td>
<td>2.1</td>
<td>2.5</td>
</tr>
</tbody>
</table>

*Sources*: See text.

Before proceeding further, it is necessary to recognize a fundamental feature of the indicators of RCA. With this measurement, the range for comparative disadvantage is between 0 and 1, while the range for comparative advantage is between 1 and the reciprocal of the country-share of world exports. As Laursen (2015) observed, this asymmetry would tend to violate the assumption in regression analysis of normally distributed error terms. He therefore proposed the following transformation to make the indicators symmetric:

\[
RSCA = \frac{RCA - 1}{RCA + 1}
\]  

The next section relies on Laursen’s indicators of RSCA, not Balassa’s indicators of RCA, for estimating the factor determinants of Britain’s comparative advantages.

**Factor determinants of Britain’s comparative advantages**

Factor intensities or proxies thereof for the British manufacturing industries are calculated from the *Census of production* (1907), which collected a limited amount of data on

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118 This paper departs from Balassa’s method in normalizing by the country-share in total world exports, rather than the country-share in just world manufactured exports.


120 Given the data assembled here, it is quite simple to calculate indicators of RCA for Belgium, France, Germany, and the United States. The extended version of this paper supplies these estimates.

manufacturing activity for the year 1906. Conveniently, the data is disaggregated at the industry and sub-industry level, thereby permitting the reconstruction of industries so that they are consistent with the industries from the previous section of this paper. Capital intensity is proxied by horsepower per £1 million of gross output. Labour intensity is proxied by employees per £1 million of gross output. Both of these proxies resemble the ones employed by Crafts and Thomas when they estimated the factor determinants of British exports for 1880, although their source of data was the cruder Factory inspectorate returns (1870). Because the Census of production reported the value of material inputs, material intensity is measured directly as the share of material inputs in gross output.

Imposing Edwardian factor proportions on late-Victorian manufacturing industries is, recognizably, less than ideal. This approach is necessitated by the availability of systematically collected data across a range of industries, and the Census of production represents the earliest such source. However, the error of backdating the factor portions is perhaps not so grave in the context of ‘mature’ industrial Britain. For instance, Matthews et al. (1982) have pointed to the similar growth rates of capital and output in the British manufacturing sector during the 1880s and 1890s, suggesting more or less constant capital intensity. Of course, the factor proportions of individual industries may have changed to some extent, even if the net effect on the whole manufacturing sector was one of little change. Nevertheless, the foregoing analysis assumes constant factor proportions.

Table 2: Factor determinants of Britain’s RSCAs, 1880-1900

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital intensity</td>
<td>0.20***</td>
<td>0.19***</td>
<td>0.16**</td>
<td>0.12</td>
<td>0.17**</td>
<td>0.12*</td>
</tr>
<tr>
<td>Labour intensity</td>
<td>-0.29***</td>
<td>-0.33***</td>
<td>-0.20**</td>
<td>-0.18*</td>
<td>-0.23**</td>
<td>-0.22**</td>
</tr>
<tr>
<td>Material intensity</td>
<td>-0.13</td>
<td>-0.24**</td>
<td>-0.18</td>
<td>-0.21*</td>
<td>-0.20*</td>
<td>-0.28**</td>
</tr>
<tr>
<td>Textile</td>
<td>0.19*</td>
<td>(0.10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human capital intensity (1st quartile)</td>
<td>-0.60</td>
<td>(0.66)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human capital intensity (2nd quartile)</td>
<td>0.46</td>
<td>(0.43)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human capital intensity (3rd quartile)</td>
<td>0.84**</td>
<td>(0.38)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.80</td>
<td>1.18</td>
<td>0.48</td>
<td>0.82</td>
<td>0.28</td>
<td>0.15</td>
</tr>
<tr>
<td>R²</td>
<td>0.37</td>
<td>0.41</td>
<td>0.21</td>
<td>0.23</td>
<td>0.24</td>
<td>0.30</td>
</tr>
<tr>
<td>Observations</td>
<td>54</td>
<td>54</td>
<td>42</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>

Sources: See text.
Notes: * indicates statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. All variables, except for the dependent variable and the textile dummy, are expressed in natural logarithms.

Table 2 presents the results of a semi-log OLS regression that estimates the determinants of Britain’s RSCAs. The dependent variable is expressed in levels. All of the continuous explanatory variables are expressed in natural logarithms. The data for all three years are pooled. The first specification of the regression illustrates that Britain’s comparative advantages were in the relatively capital-intensive manufacturing industries and, inconsistent with Crafts and Thomas, in the relatively labour non-intensive manufacturing industries. The

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123 Matthews et al., British economic growth, pp. 380-2.
coefficients imply that a doubling of the capital intensity in an industry would increase its indicator of RSCA by 0.20 and that a doubling of the labour intensity in an industry would decrease its indicator of RSCA by 0.29. Based upon these coefficients, Britain would have realized a comparative advantage in the glass industry in 1880, for example, if the industry’s capital intensity was at least 40 per cent higher or if its labour intensity was at least 30 per cent lower.

In the first specification, the coefficient of material intensity is expectedly negative, but statistically insignificant. This statistical insignificance is surprising given Britain’s limited natural resource endowments and heavy reliance on imported material inputs. One possible explanation for this finding is Britain’s free-trade commercial policy, which encompassed primary products and semi-finished manufactured goods. Another possible explanation is the low level of transaction costs in the resource-rich British Empire, as estimated by Mitchener and Weidenmier (2008).124

The second specification includes a dummy variable for the four textile classes, in order to test whether factor endowments adequately explain Britain’s notoriously persistent comparative advantages in these industries of the (first) Industrial Revolution, the silk industry notwithstanding. The coefficient of this variable is reassuringly positive, and it is statistically significant at the 10 per cent level, suggesting that a Heckscher-Ohlin model might not fully account for Britain’s comparative advantages in these industries.

Human capital intensity is proxied by the level of wages in an industry relative to the wage of unskilled labour. The author has compiled all of the occupational weekly wages of adult males for the year 1883, as reported in the Wage returns (1887). In total, there are 756 observations spanning 14 industries. Three separate proxies for human capital intensity are calculated; for each industry, the first, second, and third quartiles of the occupational wages are calculated. These values are then divided by the wage of unskilled labour, taken to be £0.65 per week, or the wage of a general labourer in the linen textile industry, in order to obtain the proxies for human capital intensity.

There are no occupational wages reported for the four industries of: cement; clocks and watches; copper manufactures; and rubber manufactures for the year 1883. The third specification of the regression replicates the first specification, but for the reduced sample of only 14 industries. The results are broadly similar. The fourth through sixth specifications introduce each of the three proxies for human capital intensity. Only the coefficient of the third-quartile proxy is statistically significant, and this coefficient suggests that Britain’s manufacturing comparative advantages were in those industries which involved a concentration of human capital among a small subset of employees. Regardless, the coefficient of labour intensity remains statistically significant and negative, even after controlling for human capital. This finding is inconsistent with Crafts and Thomas.

Conclusion

This paper has presented systematic estimates of Britain’s manufacturing comparative advantages for the late-Victorian period. These estimates lay the empirical groundwork for a broader discussion of comparative advantage in the late nineteenth century. The novel finding of this paper is that Britain’s manufacturing comparative advantages were in the relatively labour non-intensive industries. This finding remains robust, even after controlling for human capital using a four-factor Heckscher-Ohlin model.

Footnote references


**Official publications**

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*Final report of the first census of production of the United Kingdom* (1907) (P.P. 1912-3, CIX).

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The mining sectors in Chile and Norway, c.1870-1940:
The development of a knowledge gap

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Supervisor: Professor Kristine Bruland

1. Introduction
Countries rich in natural resources which exhibit poor economic performance are often understood as being ‘cursed’ and recommended to move away from natural resource industries. A key empirical problem with the ‘resource curse’ argument, however, is that some of the richest countries in the world, such as Norway, Sweden, Canada and Australia, have developed fast-growing economies based on natural resources. In this paper, I present some of the main results of a comparative study of two natural resource intensive economies that have had markedly different development trajectories, yet are closely similar in structure and geophysical conditions, namely Chile and Norway. Chile and Norway are mountainous countries with long coastlines and extensive natural resource bases. Norway has developed strongly around natural resource industries such as metal and mineral extraction, timber industries, and fish, and has created a high-income diversified economy. Chile, in contrast, with closely similar resource industries, has failed to experience anything like the same success.

Differences in economic performance across natural resource intensive economies suggest that an abundance of natural resources does not necessarily lead to stagnation. Conversely, some countries have arguably developed because of their natural resources, not in spite of them. Evidence suggests that industries in rich natural resource economies have been highly knowledge intensive, dynamic and innovative; they have created linkages to other industries within the economy, and developed specializations and new industries which have contributed to complex economic structures.125 This is in accordance with the wider argument that knowledge is the foundation of economic growth. There are also comparative studies of natural resource intensive economies which go beyond the notion that natural resource abundance is negative for economic growth. Comparative studies of Scandinavia and Latin America argue that certain key factors ensured positive development in the former, while they hindered development in the latter.126 They focus on the use of foreign technology, agricultural reforms, political regulations and education systems. The comparative approach is useful, yet the discussion often remains general. Few of the factors are discussed in detail and little empirical evidence is provided to support the arguments. We still have little knowledge of why some natural resource industries have been more innovative than others. In this study I seek to go beyond general comparisons, and to systematically compare development in Chile and Norway. Based on the argument that learning depends on an innovation-friendly institutional and organizational context, I examine and compare the functions and outcomes of knowledge organizations which aimed to develop technological knowledge for mining in Chile and Norway.


2. Empirical comparative approach

To understand differences in development, and the foundation of economic growth, it is essential to determine how knowledge accumulation actually occurred and how it was transformed by learning into technological innovation. Instead of analysing incentives for innovation, such as property rights, and making economic growth models which generalize reality, some economic historians analyse organizations through which knowledge was actually created, transferred, modified and used. Differences in institutional and organizational structures (using Douglass C. North’s definition of institutions as ‘rules of the game’ and organizations as actors bound together by a common purpose) are used to explain why some countries have experienced considerably more economic growth than others. Yet, there is a lack of empirical evidence when it comes to how knowledge has been accumulated and how organizational and institutional structures have influenced innovation. I argue that the key to understanding how learning and innovation happened, and the actors involved, is to go beyond identifying the aims of organizations, to systematically examine how organizations, such as education, industrial societies and research centres, developed technological knowledge, how people learned, and how knowledge was used directly to change technology. Subsequently, comparisons should be made, across countries, of knowledge organizations and institutions involved in innovation processes, with the objective of finding similarities and differences between them. This way we gain a more fundamental understanding of the core of the foundation of economic growth and variations in economic growth across countries.

This comparative empirical analysis aims to shed light on the diverging paths of Chile and Norway by examining similar types of organizations that were directly involved in creating, transferring, using and diffusing knowledge for mining in Chile and Norway. The method is implemented by: (1) making a framework of how innovative and technologically advanced mining at the time was carried out. Knowledge terms, notably natural sciences, tacit and codified knowledge, managerial knowledge, know-what, know-how, know-who and know-why are used to detect different aspects of knowledge involved in innovation processes; (2) describing the gap in development between the two mining sectors and (3) systematically comparing the functions and outcomes of similar types of knowledge organizations and how they influenced innovation, or the lack of it, in the two sectors. First, this involves analysing the content of mining education in the two countries. Second, the number of professional workers and the extent to which they reached across the mining sector are examined, before exploring organizations with the aim of transferring knowledge, notably from abroad. Finally, organized geological mapping and ore surveys are analysed in the two countries. I use primary sources in the form of written documents, graduate lists, study programmes, student yearbooks, engineering reports, technical magazines, company reports, and correspondence, newspapers and statistics. Documentation was collected from archives in Chile, Norway and the United States.

3. Setting a framework for mining: use of complex technology

The period between the late nineteenth century and 1940 is chosen because mining went through radical technological changes during these years. Mining faced major challenges, in

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particular due to the gradual exhaustion of high-grade ores and the start-up of new mineral and metal production. Maintaining profitability in new global settings involved adopting new techniques to find ores, for ore prospecting, removing ore, organization of work and ore processing. More powerful machinery and power sources became common from the late nineteenth century. Mechanical and electrical power largely replaced steam, animal, and manual power and enabled deeper mines and larger scale production. New converters, furnaces, ore dressing, and smelting techniques permitted the utilization of lower grade ores. As these changes occurred, the knowledge that was used in technologically up-to-date mining became increasingly specialized.

Consequently, operations at technologically advanced companies became gradually more dependent on scientifically trained mining engineers and technicians. Professionals with other educational backgrounds, such as electro-engineers, mechanical engineers, chemists, economists etc. also became vital, as mines became deeper and bigger, constructions increasingly complex and new chemical and electro-metallurgical techniques developed. Simultaneously, mining operations depended on specific knowledge of the local geology, and much learning happened through doing and practice, which suggest a large degree of tacit knowledge in all mining activities. Additionally, to continuously be updated on new technology, information about what was new, how technology functioned, deeper understanding of why it functioned the way it did, and who to contact, was essential. In sum, I find that technological changes were supported by complex knowledge specializations:

Table 1: Simple overview of knowledge used in technologically advanced mining

<table>
<thead>
<tr>
<th>Steps in the mining process</th>
<th>Knowledge domains (sciences)</th>
<th>New knowledge areas from the late 19th century</th>
<th>Tacit knowledge</th>
<th>Relevant knowledge of new technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Geological surveys/prospecting</td>
<td>Geology, Mineralogy, Chemistry, Economics</td>
<td>Electro-engineering, Economics, Administration</td>
<td>High degree</td>
<td>Continuous acquisition of: know-how, know-what, know-who, know-why</td>
</tr>
<tr>
<td>2. Removal of ores</td>
<td>Physics, Mathematics, Construction-engineering, Mechanics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Processing of ores</td>
<td>Geology, Mechanics, Chemistry, Mineralogy, Metallurgy (electro-engineering, electro-chemistry etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on an empirical analysis of technological changes in mining

Technological knowledge was attained from many places and in a variety of ways. The start-up and advance of innovative mining companies depended on a whole set of interacting organizations, which learned and accumulated knowledge, developed technological capabilities and continuously adopted more efficient technology.
Table 2: Simplified model of steps in mining innovation processes and organizations involved

<table>
<thead>
<tr>
<th>Innovation activity</th>
<th>Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be informed about new technology</td>
<td>Technical magazines (technical and scientific societies)</td>
</tr>
<tr>
<td></td>
<td>Industrial exhibitions</td>
</tr>
<tr>
<td></td>
<td>Formally trained professionals (universities and technical schools)</td>
</tr>
<tr>
<td></td>
<td>Mining consultants (domestic or foreign)</td>
</tr>
<tr>
<td>Create, transfer and install more efficient equipment, furnaces, machinery and techniques</td>
<td>National Geological Surveys</td>
</tr>
<tr>
<td></td>
<td>External companies (mechanical workshops)</td>
</tr>
<tr>
<td></td>
<td>Research institutions (laboratories, research centres)</td>
</tr>
<tr>
<td></td>
<td>External experts (professors, consultants, workers)</td>
</tr>
<tr>
<td>Use of new technology</td>
<td>Workers</td>
</tr>
<tr>
<td></td>
<td>Engineers, technicians and other professionals</td>
</tr>
</tbody>
</table>

Based on an empirical analyses of knowledge organizations used in mining

4. Comparative empirical analyses of knowledge organizations for mining

Similar types of public and private organizations, referred to above, with the direct aim of developing knowledge for mining were established in both Chile and Norway. The formation of these knowledge organizations suggests an ambition in both countries to advance the sectors. However, the mere presence of these organizations did not guarantee innovation. The mining sector in Norway continuously adopted new and up-to-date technology, created linkages to the capital goods industry and branched out a large-scale metallurgical industry from the turn of the century. Together with other industries, the dynamic mining sector contributed to the strong economic growth that was happening at the time. Chile, on the other hand, did not fully take advantage of its resource potential. Key mining production, notably saltpetre and copper, stagnated due to abandoned mines and unexploited ore deposits. Furthermore, linkages to other industries declined and a technological gap developed between technologically advanced large-scale multinationals and small- and medium-sized domestic companies using traditional technology. The stagnation and lack of innovation in this sector, which accounted for nearly 90 per cent of total Chilean exports, prevented the sector from stimulating strong growth and to become a real driving force of the economy. Considering its size, these features had a particularly negative impact.

I find that the development gap between the two sectors was linked to differences in the functions and outcomes of the two countries’ organizations. The set of organizations in Chile blocked transfer, use and diffusion of knowledge, while the set facilitated knowledge development in Norway. Yet, I find the story is complex and perhaps the most striking finding is their similarities. On the surface, all of the knowledge organizations appear equal, and some of them also were. Mining instruction, both at an intermediate and higher level, were similar in character, in the sense that the study programmes included similar types of courses; covered a wide range of scientific and technical subjects and reforms were adopted according to technological changes in mining. Furthermore, engineers and other professionals participated in industrial exhibitions and they had access to new information and know-what through mining journals. However, a deeper analysis of the organizations demonstrates that there were discrepancies between the two countries and that not all of the organizations fully fulfilled their functions in Chile. While there was an abundance in Norway of key
professionals, notably mining engineers, technicians, electro-engineers, construction engineers, mechanics and chemists, these were scarce in Chile, especially at the small- and medium-sized companies, which normally used old technology. Discrepancies also appear in terms of the number of scholarships for study travels abroad. To actually transfer and use machines, furnaces, processing techniques, etc. it was not enough to read about them in magazines or observe them at exhibitions. To select, transmit and use equipment, know-who, know-how and hands-on practice were transferred from abroad. Chile lacked this experience since travel scholarships were only provided sporadically. Even more remarkably, the two countries differed when it came to the extent to which nationally organized geological mapping was carried out, as well as analyses of the countries’ ore deposits and economic planning. The Geological Survey of Norway was established in 1858 and contributed to new mining projects, while a permanent organization of this kind did not exist in Chile. This, in turn, was linked to the small number of mining engineers in the country. Without a deep understanding of the geology, proper ore analyses, knowledge about the existing mineral deposits and their potential profits, new mining projects could hardly take place and the mining sector barely advance.
Table 3: Knowledge organizations and the knowledge gap between the mining sectors in Chile and Norway

<table>
<thead>
<tr>
<th>Organization</th>
<th>Measurement</th>
<th>Comparison</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining education</td>
<td>Character of mining instruction</td>
<td>Equivalent</td>
<td>Educational institutions in both countries developed mining education at intermediate and higher level and provided similar scientific knowledge</td>
</tr>
<tr>
<td>Mining engineers and technicians</td>
<td>The extent to which mining engineers and technicians reached across the sector</td>
<td>Discrepancy in amount</td>
<td><strong>Chile</strong> had too few mining engineers and technicians to cover all mining companies, geological surveys and other related positions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Norway</strong> had enough mining engineers and technicians, maybe too many, to fill leading positions across the mining sector and the National Geological Survey</td>
</tr>
<tr>
<td>Engineers and other relevant</td>
<td>The extent to which other relevant professional workers reached across the sector</td>
<td>Discrepancy in amount</td>
<td><strong>Chile</strong> had too few relevant professional workers to cover all companies</td>
</tr>
<tr>
<td>relevant professionals educated</td>
<td></td>
<td></td>
<td><strong>Norway</strong> had enough relevant professional workers, maybe too many, to use advanced technology and continuously innovate</td>
</tr>
<tr>
<td>locally</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial exhibitions and technical</td>
<td>The extent to which companies acquired information about new technology</td>
<td>Equivalent</td>
<td>Mining companies and engineers in both countries had access to technical and mining journals with know-what and industrial exhibitions where new techniques were demonstrated</td>
</tr>
<tr>
<td>journals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study travels and work abroad</td>
<td>The extent to which mining engineers travelled and worked abroad</td>
<td>Discrepancy in amount</td>
<td>The few study trips abroad by Chilean mining engineers hindered transfer of know-how and practical knowledge of foreign technology to <strong>Chile</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The many study trips and work experience abroad meant an abundance of know-how and practical knowledge of foreign technology to <strong>Norway</strong></td>
</tr>
<tr>
<td>Geological mapping and ore surveys</td>
<td>The extent to which geological surveys and research institutions reached</td>
<td>Discrepancy in amount</td>
<td>The few sporadic geological surveys and ore analyses in <strong>Chile</strong> blocked start-up of new mining projects and advancement of the sector</td>
</tr>
<tr>
<td></td>
<td>across the sector</td>
<td></td>
<td>Geological mapping and ore surveys from early on encouraged new mining projects in <strong>Norway</strong></td>
</tr>
<tr>
<td>Foreign consultants and expertise</td>
<td>Use of foreign professionals and consultants</td>
<td>Discrepancy</td>
<td>In <strong>Chile</strong>, a large number of foreign professionals were part of foreign enclave companies and barely contributed to transfer of managerial knowledge*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In <strong>Norway</strong>, foreign consultants were employed sometimes, but worked and cooperated with Norwegian engineers and companies</td>
</tr>
</tbody>
</table>

Based on an empirical comparative analysis of the functions and outcomes of the two countries’ knowledge organizations.
* Foreign engineers and industrialists were crucial for the development of Chilean mining and were normally the ones who initiated changes in technology. However, their dominance was negative in the sense that the lack of collaboration with domestic engineers and leaders prevented knowledge spillovers, notably managerial knowledge.

In the case of Norway I find that the state was particularly central in knowledge development, because it funded national geological surveys, formal schooling and universities, and managed many of the scholarships for study travels and exhibitions. The Norwegian state was much more active in developing these organizations than the state in Chile, which leads to more questions as to why organizations functioned so differently in the two countries. Answering these questions requires further analyses of the institutional mechanisms which regulated these organizations in the two countries.

For a full-length version of the thesis, please email Kristin Ranestad at the address above.
Confronting deindustrialization: Economic change and cultural identities in the Scottish coalfields c.1940s-1980s

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Supervisors: Dr Jim Phillips & Dr Duncan Ross

Deindustrialization, the declining contribution of industrial activities to GDP and employment, was a central feature of developed economies during the second half of the twentieth century. Early scholarly interest in deindustrialization during the 1970s centred on concerns over economic growth, the balance of payments, and Britain’s relative decline. Since then, a body of historical and social science literature has developed, focusing on the impact of the closure of factories, steel mills and mines. This paper goes ‘beyond the ruins’ of industry, through an analysis of culture. As opposed to a ‘body count’ of lost employment, and the trauma of closures, it builds on recent analysis of shifts within ‘mental and cultural frameworks’, to illuminate the broader economic and social ramifications of deindustrialization.

The Lanarkshire coalfield, Scotland’s largest in terms of output and employment from the late nineteenth century until the mid-twentieth century, serves as a case study to profile the disruption that the removal of heavy industrial activities had in settlements which developed around coal mining and steelmaking. This paper focuses on long-run responses to deindustrialization. It illuminates the impact of industrial restructuring, considering how labour responses to the decline of coal mining employment related to Scottish national consciousness and growing demands for political devolution over the second half of the twentieth century.

A complex interplay of culture and economics with class and nation is identified. The analysis centres on the deployment of an accentuated sense of Scottish-ness from the 1960s onwards to defend economic and social resources, collieries and the employment they sustained, within the structures of the nationalized industry. The Scottish Miners’ Gala is analysed as a key example of this. It is understood as an ‘invented tradition’, having been instigated by the National Union of Mineworkers Scottish Area (NUMSA) in 1947, the year of nationalization. The analysis is based on oral history interviews with 33 people from mining backgrounds, and two focus groups which had 7 and 13 participants, and archival sources from NUMSA and the industrial relations structures of the National Coal Board (NCB).

The reassertion of Scottish national identity and loosening of the political bonds of the Union during the late twentieth century are commonly ascribed to cultural and constitutional political factors. Pittock has referred to burgeoning confidence in the arts and literature as contributing towards a state of ‘cultural autonomy’, which conditioned growing support for devolution and independence in Scotland during the 1980s and 1990s. Others foreground ‘political divergence between Scotland and England’, emphasizing how declining support for

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129 Rowthorn and Ramswamy, Deindustrialization (Washington DC, 1997).
131 Barry Bluestone and Bennet Harrison, The Deindustrialization of America (New York, 1982); Stephen High, Industrial Sunset (Toronto, 2003).
the Conservative Party after 1979, and the retention of ‘an essentially social-democratic majority’ in opposition to Thatcherism within Scotland, weakened the Union.135

Devine’s study of the long-run development of the Scottish economy and society adopted a different approach, recognizing that since the mid-1970s Scotland ‘had been transformed to an extent unknown since the epoch of the industrial revolution’. He related this to ‘a crisis of national identity’ arising from the extent to which ‘Scotland’s modern collective psyche was invested in the great traditional staples of shipbuilding, heavy engineering and coal mining’.136 The analysis here enriches these debates with a more nuanced account, examining the economic substance of cultural and political change, and Scotland’s distinct trajectory within the U.K.

Table 1: Male Industrial Employment in Lanarkshire

<table>
<thead>
<tr>
<th>Year</th>
<th>Mining (%)</th>
<th>Metal Manufacturing (%)</th>
<th>Engineering (%)</th>
<th>Combined (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>20225</td>
<td>23403</td>
<td>18.0</td>
<td>9.9</td>
</tr>
<tr>
<td>1961</td>
<td>13440</td>
<td>23340</td>
<td>16.2</td>
<td>19.4</td>
</tr>
<tr>
<td>1966</td>
<td>6610</td>
<td>24030</td>
<td>16.8</td>
<td>23.7</td>
</tr>
<tr>
<td>1971</td>
<td>3720</td>
<td>21810</td>
<td>16.2</td>
<td>25.6</td>
</tr>
<tr>
<td>1981</td>
<td>1060</td>
<td>10680</td>
<td>9.4</td>
<td>21.6</td>
</tr>
</tbody>
</table>


The West-Central coalfield, mostly located in Lanarkshire, remained Scotland’s largest into the 1940s but had been suffering intensifying geological difficulties for two decades. The 1944 Coalfield Commission, which set the blueprint for the NCB’s strategy, saw trade unionists agree with mining engineers that ‘the economic decline of the Lanarkshire coalfield would not be reversed’ and that future development should be focused in the more productive eastern coalfields.137 Table 1 illuminates the marked changes in industrial structure which took place within Lanarkshire. The fall in coal employment diverged from the upward trend with Scotland as a whole during the 1950s, which was the product of the NCB investment policy outlined above, but Lanarkshire matched the pattern of accelerated decline during the 1960s, followed by consolidation in the 1970s, before major final closures in the 1980s.138

The other significant trends revealed in table 1 are the proportional maintenance and numerical increase in male industrial employment between the 1950s and early 1970s due to the expansion of assembly manufacturing and the preservation of employment in steel. This relates to the British regional policy regime which deployed capital controls and incentives to secure significant inward investment in “peripheral” areas, particularly declining coalfield regions.139 Within Lanarkshire this led to the establishment of significant mechanical, electrical and electronic engineering, and heavy vehicle manufacturing, sectors. In line with wider Scottish patterns this included American multinationals establishing assembly factories.140

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135 Brown, McCrone and Paterson, Politics and Society in Scotland (Basingstoke, 1998) p.64.
Coalfield responses to this process incorporated support for diversification alongside growing reservations about the future of coal mining and opposition to the imposition of closures from increasingly distant U.K. level authorities. At the 1957 NUMSA conference, the delegate for the Newton branch, in South Lanarkshire, Mick McGahey, future Area President and NUM Vice-President, moved a resolution calling for ‘an overall Scottish plan for industrial development to offset Scottish dependency on the heavy industries’. His speech cited the recent construction of Ravenscraig steel strip mill in Motherwell, North Lanarkshire, which provided 6,000 jobs. Ravenscraig’s significance lay in its contribution to establishing new manufacturing activities, with the production of strip steel creating up to 20,000 jobs in related industries and the impetus for aircraft and automotive manufacturing to develop in Scotland. McGahey argued NUMSA should favour ‘the development of new industries, but also a position where such industries could be linked directly to the heavy industries’, providing coal with a future in a more industrially balanced Scottish economy.\footnote{National Mining Museum Archives (hereafter NMM)/NUMSA Minutes of Executive Committee and Special Conferences from 18\textsuperscript{th} June 1956 to 5\textsuperscript{th} to 7th June 1957, p.780.}

As coal mining employment shrank, the NCB was restructured with increasing authority over investment and closures passed to London headquarters, Hobart House. This was combined with the development of automated and externally administered production systems from the early 1960s, including the later development of the Mine Operating System, MINOS, which established ‘closed loop computer auto-control’ and delivered production data directly to senior management.\footnote{Winterton and Winterton, ‘Production, Politics and Technological Development’ in Modern Europe ed. Melling and McKinlay (Cheltenham,1996) pp.134-6.} The adoption of increasingly capital-intensive production methods created renewed pressures to concentrate investment and manpower in the most productive coalfields in the English Midlands, which alongside falling demand for coal, accelerated the rundown of the Scottish coalfield.\footnote{Ashworth, The History of the British Coal Industry volume 5 (Oxford, 1986) pp.87-102, 264-5.} These centralization tendencies were divergent with trends towards ‘administrative devolution’ in the operation of U.K. industrial policy visible in the establishment of the Scottish Development Department in 1962.\footnote{Harvie, No Gods and Precious Few Heroes (Edinburgh, 1993) p.62.}

Opposition to remote control and the intensifying rate of coal job losses during the 1960s coalesced in mounting hostility to pit closures. A Colliery Official and Staff Association representative summarized this discontent at a Colliery Consultative Committee meeting between management and trade unions preceding the closure of Gartshore 9/11 in North Lanarkshire during 1968. He argued that the imposition of closures via programmes drawn up in London represented a threat to democratic procedure and local employment: ‘It used to be that the Colliery Manager had to plan out his own Pit, then Area officials took control of this and now we find that the planning for the Pit is done 500 miles away. Handouts were all right, if unavoidable, but men wanted to work’.\footnote{NRS/CB/300/14/1/Minutes of Special Consultative Committee Meeting of Gartshore 9/11 Colliery Consultative Committee Held in Grayshill Office on Thursday 18\textsuperscript{th} January, 1968.}

It was within this context of heightened industrial contraction that NUMSA became a proponent of devolution. The Area moved a resolution to the 1968 STUC conference calling for a Scottish Parliament. This marked a departure from the support for a unitary British state which had characterized the mid-twentieth century Scottish labour movement, and paved the way for the STUC’s role as a leading campaigner for devolution between the 1970s and 1990s.\footnote{Phillips, The Industrial Politics of Devolution (Manchester, 2008) p.38.} NUMSA’s records indicate the Area embraced a political standpoint centred on utilizing national autonomy to stem deindustrialization. At the 1978 NUMSA conference McGahey made the case for a ‘yes’ vote in the forthcoming ill-fated referendum on a Scottish Assembly, stressing the need for an “Assembly that will enable us to plan and develop the
The cultural interaction of class and nation which underpinned NUMSA’s support for devolution were at their most visible in the annual Scottish Miners’ Gala, which reprised traditions associated with coal mining locales in a national context. The formation of the NUM and NCB between 1945 and 1947 established a distinct Scottish mining industry through the presence of a devolved NUM Area and NCB Division within novel, unitary, British structures. The gala, which was inaugurated in the year of nationalization, 1947, has the hallmarks of an ‘invented tradition’. Hobsbawm defined this as:

A set of practices normally governed by overtly or tacitly accepted rules and of a ritual or symbolic nature, which seek to inculcate certain values and norms of behaviour by repetition, which automatically implies continuity with the past.

Like Hobsbawm’s examples of the FA Cup final and the Queen’s Speech, the gala deployed ‘invented practices’ which claimed to embody the bona fide traditions of an imagined community. The gala projected a united Scottish coalfield in congruence with the traditions of smaller territorial communities. Thus, the national event had activities characteristic of local celebrations including a parade followed by races, football and boxing, pipe and brass band competitions as well as a ‘Coal Queen’ competition.

Figure 1: ‘Miners’ Gala Day 1969’


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147 NMM /Minutes of Executive Committee and Special Conferences 27th June 1977 to 14th/16th June 1978, pp.609-10.
148 NMM/NUMSA Minutes of Executive Committee and Special Conferences 8th July 1946 to 11th June 1947 pp.12-13.
151 NMM/NUMSA Minutes of Executive Committee and Special Conferences from 27th June to 14/16th June 1967 p.18.
The gala deployed these traditions with a novel purpose. It was held out with the coalfields, in the Scottish capital city, Edinburgh, where the NCB’s Scottish Division and NUMSA were headquartered. Brendan Moohan who entered coal mining in 1982, following his grandfather and father who were both NUM activists, recalled the gala as a major annual event which showcased the industry’s size and presented a unified Scottish coalfield identity:

As a child, everybody went to the gala day and it was huge and it would be at Holyrood [Park]. And it was enormous, and there was races, and there was the boxing ring, and the various boxing clubs would be involved. I remember the men very often wore suits on that gala day. I can also remember the banners, thousand, thousands of people representing their pits and their villages with their banners, and there would be brass bands.\(^{152}\)

The Scottish Miners’ Gala paralleled the development of the Durham Miners’ Gala as the ‘political project’ of an NUM Area leadership.\(^{153}\) It served as a key institution and symbol of a Scottish mining community by facilitating the ‘imagining’ of a collective. The politics of the Scottish gala differed from the ‘labourist’ character of the Durham event, reflecting the predominantly Communist orientation of NUMSA’s leadership between the 1940s and the 1980s, but it similarly brought together politically diverse elements under the banner of the Scottish miners. For instance, the 1969 gala saw Joan Lester, a junior minister in the Wilson government, speaking on a platform alongside North Vietnamese trade union officials.\(^{154}\) Both can be seen at the head of the demonstration in figure one. Antony Rooney recalled Mick McGahey, then NUMSA’s President, and Tony Benn, sharing a platform in 1977. The gala was an occasion which ‘brought everybody together at the mining communities’, including individuals like himself from mining families who had become active trade unionists in other industries as coal mining employment contracted.\(^{155}\)

The gala shared Scottish nationalist, and Unionist, contexts. It was embedded within the social democratic infrastructure of the British labour movement and the nationalized industry, symbolized by the presence of speakers from across the U.K., and the support the Coal Industry Social Welfare Organisation offered in arranging sporting events.\(^{156}\) Thus, a strand of ‘Unionist-Nationalism’, placing Scottish national identity within a Unionist framework, is apparent. Like Morton’s analysis of nineteenth century municipal associational culture, this Unionism had a basis in the traditions of coalfield communities, and via the gala, was given a Scottish national one.\(^{157}\) However, NUMSA’s support for devolution adds a different dimension. This was grounded in ‘utilitarian’ rather than ‘existential’ nationalism, centring on stemming deindustrialization through greater Scottish industrial policy autonomy.\(^{158}\) Yet, a distinct Scottish identity was asserted through pipe bands and Highland dancing competitions, alongside the characteristic British coalfield iconography of banners and brass bands.\(^{159}\) Thus, ‘cultural “raw material” for nationalism’ served an agenda provoked by the uneven economic development of British capitalism rather than romantic nationalist aspirations.\(^{160}\)

\(^{152}\) Brendan Moohan, interview.


\(^{154}\) NMM/National Union of Mineworkers (Scottish Area) Minutes of Executive Committee and Special Conference from 24th June 1968 to 18/20th June 1969, p.192.

\(^{155}\) Anthony Rooney, interview with author, Morrisons Café, Bellshill, 24th April 2014.

\(^{156}\) NMM/NUMSA Executive Committee Minutes July 1982-July1983, p.430.


\(^{159}\) NUMSA Minutes of Executive Committee and Special Conferences 8th July 1946 to 11th June 1947 pp.12-13.

The decline of the Scottish Miners’ Gala during the late 1980s, as the industry shrank towards marginal significance and privatization, was emblematic of the erosion of coalfield associational culture. This survived the contractions of the 1950s and 1960s, which was met by both support for industrial diversification and opposition to increasingly remote control over colliery closure and investment policy within the NCB that stimulated calls for increased Scottish political autonomy. The gala projected local traditions onto a national context, playing a crucial role in the imagining of a Scottish mining community. Its complex framing between a social democratic unionist-nationalism and a distinct Scottish identity illustrates the cultural salience of the forces which structured Scottish industrial politics after 1945. The gala’s demise, along with the apparatus of the nationalized industry in which it was embedded, is indicative of the economic forces which have loosened the Union since the 1980s.

‘A great reversal not so much of business structure as of attitude’.\textsuperscript{162} The campaign behind the introduction of general limited liability in England

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Freedom to set up a limited liability company – that is, a company whose members have no liability for its debts beyond the nominal value of their share-holding – was first made generally available in England under the 1855 Limited Liability Act, subsequently incorporated into the 1856 Joint Stock Companies Act. Before this, anyone wanting to set up a limited company needed a parliamentary Act or a charter from the Board of Trade; thereafter, as summarized by Philip Cottrell, ‘joint stock companies with limited liability could be formed for most purposes by the simple process of registering a memorandum of association signed by seven shareholders’.\textsuperscript{163}

Historians have puzzled over this sudden liberalization, which came after decades of inaction, and it has become almost \textit{de rigueur} to endorse Cottrell’s rider that ‘it is extremely difficult to account for this sharp and dramatic change’.\textsuperscript{164} Previously unremarked sources show that one key reason why the change happened is that three men decided to make it happen.

Hopes of commercial law reform received a boost from the composition of the new Parliament that met in the autumn of 1852. This had an unprecedentedly high number of lawyer-MPs – something which excited expectations amongst lawyers themselves. London’s Law Amendment Society held a conference to formulate plans, after which the \textit{Law Review} saidoptimistically that: ‘we shall indeed be surprised if ... a bill is not brought in, fully discussed, and probably carried, establishing ... the principle of limited liability’.\textsuperscript{165}

At first it seemed that surprise would be called for. On 22 November the Marquess of Clanricarde expressed disappointment in the House of Lords that limited liability was not on the agenda for the new session.\textsuperscript{166} Two weeks later however, discussion sparked into life when William Brown – ship-owner, Liverpool MP and long-standing opponent of limited liability – raised the subject in the Commons. On 7 December he tabled a request that all papers relating to a recent charter-application by the London, Liverpool and North American Screw Steam-ship Company be made public. He sympathized, he said, with the Board of Trade’s difficult task, in contending with ‘contradictory views’, but trusted that it would uphold the principle of unlimited liability in a field well-served by private enterprise and refuse the charter.\textsuperscript{167}

Board of Trade President Joseph Henley clearly felt his hand was being forced by Brown’s request. Expressions of sympathy would be more convincing, he said, if not accompanied by actions which made his task more difficult. He disagreed with Brown’s tactics and his denigration of this case – an ‘exceptional ... proposal to open a steam communication with Canada’.\textsuperscript{168} While it was \textit{sub judice}, no papers would be released. Other speakers supported this, and Brown withdrew his motion.

\textsuperscript{162} C R Fay, \textit{The Economic Journal}, June 1948, p274.
\textsuperscript{163} Philip Cottrell, \textit{Industrial Finance 1830-1914} (London and New York, 1980), p41
\textsuperscript{164} Ibid., p54.
\textsuperscript{166} The Exhibition (Sydenham) debate, House of Lords, 22 Nov.1852, \textit{Hansard}, vol 123, c276.
\textsuperscript{167} North American Screw Steam-ship debate, House of Commons, 7 Dec.1852, \textit{Hansard}, vol 123, c1075.
\textsuperscript{168} Ibid., cc1076-7.
From Board of Trade records and newspapers we can see how conflict over the proposed new steamship company had reached this point. The original list of provisional committee-men submitted to the Board on 16 October 1852 gave only five names, but six weeks later these had been joined by a further fifteen.\footnote{\textit{London, Liverpool, and North American Screw Steam Ship Company} (London, 1853), pp2 and 17} They included Robert Lamont, a Liverpool-based Scottish ship-owner who brought with him a Canadian shipping contract, and experience with screw-propellers. Ship-owner Samuel Cunard protested to the Board that the company had ‘only introduced this Canadian contract as a pretext for obtaining the charter’.\footnote{\textit{Ibid.}, p30.} The charter-application included a proposal to operate screw steamers on the New York/Liverpool route, where Cunard had hitherto enjoyed a monopoly, backed by a British government mail contract. Cunard’s objections were supported by articles in the Liverpool press\footnote{\textit{Liverpool Albion}, 4 Oct.1852; \textit{Liverpool Mercury}, 10 Dec.1852, pp6 and 17 Dec.1852, pp7.} and memorials from other ship-owners and Chambers of Commerce. The North American company mustered its own supporters in return, and claimed that Cunard had orchestrated a campaign of opposition. Both sides accused the other of seeking a monopoly.

Cunard pulled no punches in his attempts to combat the new company. He told Henley that the sole aim of its ‘grasping directory’ was ‘to ruin me’ and ‘destroy all opposition, being aware that individuals cannot stand out against them with limited liability’.\footnote{\textit{London, Liverpool, and North American Screw Steam Ship Company}, pp57 and 61} In contrast, he talked of his own ‘duty’ in fulfilling a government contract. Running through the claims and counter-claims was railway-capitalism, and its expansion into sectors connected by steam or infrastructure. Cunard complained that the projected company had ‘received a subsidy from an American railroad company’, and was himself required by Henley to answer allegations of having injured the Great Western Steamer company.\footnote{\textit{Ibid.}, pp16, 53 and 55.} Railway contractor Samuel Morton Peto’s activities were also pulled in, in the form of the North of Europe Steam Navigation Company, recently denied a steam ship charter. Lamont submitted evidence claiming to show that ship-owners only mobilized opposition when threatened by railway interests. These were the only concerns with enough financial clout to scare them.

The North American Screw Steam-ship charter dispute thus represents a pivotal clash between two generations of capitalists. This was partly a straightforward question of age: Cunard was 56 at this time, Brown 68, and Lamont a relatively youthful 33. More broadly, it was a clash between traditionalists arguing that capital should be raised on the strength of a name (backed by personal liability), and those wanting to draw on a potentially wider pool of investors, protected by limited liability, as in railway-finance. With hindsight, it is not surprising to see this was brought to a head in a shipping dispute. Shipping/railway skirmishes had been going on for some years,\footnote{As catalogued in \textit{London, Liverpool, and North American Screw Steam Ship Company}, pp69-84.} and the North American case involved a host of concerns commonly invoked in limited liability disputes: national and colonial development, public service, Ireland, American competition, large infrastructure companies and technological efficiencies driven by steam. Above all though, it involved very high stakes. Moralizing featured in this as in every other discussion of limited liability, but it was capital that forced the issue. Specifically, the huge amounts needed for the ever bigger shipping companies looking to exploit new technology. In letters sent to the Liverpool press, Lamont complained that a cartel between Cunard and the American Collins line (for which Brown was the Liverpool agent) was blocking access to capital:

\[\ldots\text{it is notorious in the commercial world that men of fortune being also businessmen will not embark in any joint-stock company unless their liability is limited by charter of incorporation . . . . The proprietors of the Cunard and Collins companies are well aware of}\]
this fact ... [The] violence of their opposition stems from knowledge that failure to obtain a charter would ensure them a near-monopoly.\textsuperscript{175}

In what followed, political chance took a hand. Shortly after Brown’s Commons request, Cunard wrote to Henley to express his ‘[mortification] that the present government have ... expressed so strong a determination to injure me’.\textsuperscript{176} It seems Henley had given verbal approval for a charter for a Canadian line at least. The North American company held out however, for a charter covering the full package of routes requested, including the contentious New York/Liverpool route. This strategy came unstuck. On 19 December 1852, just two days after Cunard’s letter, Lord Derby’s minority government fell, and Henley was replaced at the Board of Trade by Edward Cardwell, an intuitive conservative on limited liability (and, until the recent election, a Liverpool MP). Against mounting complaints from Lamont, Cardwell re-opened discussions and Cunard renewed his protests with fresh purpose. On 22 February the North American Screw Steamship company’s charter was refused.

By this time, the company was anticipating rejection. Rumours had reached them of Cardwell’s intention to suspend charter-grants in favour of a broader policy review, and though they protested that this should not affect their application, the continued delay did not augur well. Cardwell had set out his position in a January memorandum to the Cabinet, which made clear his aversion to limited liability.\textsuperscript{177} The Cabinet included individuals who agreed and disagreed with him\textsuperscript{178} but no one had any objection to a Commission of inquiry, and on 21 February 1853 Cardwell announced his intention to introduce one. Meanwhile, he thought it ‘desirable to be guarded’.\textsuperscript{179} The following day, the Board’s rejection letter was sent to the North American company’s solicitors.

This had repercussions beyond any that Cardwell could have foreseen. The immediate one was that the company re-submitted its application with a proviso that it would not operate on the contentious New York/Liverpool route. This was refused. A further application, in the name of the hastily-formed Canadian Steam Navigation Company, then requested a charter for the Canadian route alone – something the applicants said Henley had already approved, as the default option.\textsuperscript{180} This was also refused, on the grounds that they had earlier said it would not be feasible to pursue the Canadian route in isolation. Lamont then faced a challenge in fulfilling his Canadian contract, which he did by persuading wealthy backers to accept a Canadian company work-round. He was now however, too furious at his treatment at the hands of the Board of Trade to take it lying down. He later recorded his response when ‘smarting under the injustice’:

\begin{quote}
[I]Immediately after the refusal of the charter, the author and his solicitor, the eminent and well-known Mr EW Field, of Lincoln’s Inn, formed a league at the cost of many hundreds of pounds to the author to agitate the country and Parliament for an alteration in the law of partnership. This league, to which the author acted as honorary secretary, was composed principally of members of Parliament and men of genius. A systematic agitation and education of the mercantile community, by means of newspaper articles published...
\end{quote}


\textsuperscript{177} Cardwell, ‘Limited Liability’. Confidential memorandum to the Cabinet, 14 Jan.1853, Gladstone papers, BL MS Add 44570, 169.


\textsuperscript{180} ‘We fully understood that the question to be decided by Mr Henley was only between the extended or restricted charter, and we were prepared to accept the latter if he should refuse to recommend the former’, Letter to Cardwell, 10 March 1853, \textit{London, Liverpool, and North American Screw Steam Ship Company}, p95.
periodically in all parts of the three kingdoms, and also by the circulation of pamphlets upon limited partnerships, was resorted to.181

In a letter sent to the Board of Trade in later life, Lamont gave further, colourful details of the league’s formation, and how it now proposed to go about its task:

Mr Field told Mr Cardwell in my presence, when the latter communicated his decision [to refuse the Canadian charter] to me, that he would never rest until the law was altered, nor until every Briton had freedom to trade with his Capital – as was his Birthright, just as he pleased – with Limited or unlimited liability ... Mr Field and I commenced an agitation on the day Mr E Cardwell refused me the charter, by together going down to the House of Commons, and forming a league [whose members] were to send to me in Liverpool each at least once a month a paper on Limited partnerships, I undertaking to get the same inserted in the leading papers in the United Kingdom, from John O’Groats to Lands’ End and from Belfast to Cork. This I did, and Lord Palmerston had one on his Breakfast Table every Monday morning – [until] we fell foul of Mr Cardwell and Mr WE Gladstone on the subject – for Gladstone was as far behind the age as his Peelie brother Cardwell (sneaks all, in my opinion!) ... This agitation continued for four or five years, costing me at least £500 – aye more – although no one – except Mr Field and Mr Robert Lowe ... knew who was pulling the strings and paying the expenses.182

The Canadian charter-refusal thus brought a capitalist, a lawyer and a politician together in a concerted effort to achieve change. Historians have noticed public comment now increasing, though not known why. The league was not however, about to be content merely with increased noise-levels. Lamont claimed that ‘when completed [it] comprised many MPs’, of whom he named Joseph Hume and Sir Seymour Fitzgerald, one a radical and the other a Conservative. Fitzgerald, a barrister, was one of the 1852 intake of lawyer-MPs. Another, who would play a key role, was Robert Collier. Norwich MP Edward Warner was also a reliable supporter, and in the pamphlet he wrote to discharge his own league obligation gave an indication of its priorities. Official inquiries (of which there had already been several) were all very fine, but ‘not likely to result in much practical good, until public opinion is formed, and can be brought to bear upon Parliament’.183 Not all league-members were MPs or lawyers – Lamont also named brewer Fowell Buxton, whose nonconformist/philanthropic background was typical of many.184 The focus of attention was however, political action, and the focus of that undoubtedly Lowe, who ‘on many occasions met with’ Field and Lamont and ‘gave most valuable assistance’ to the league – a version of events later endorsed by Lowe himself.185

Once we know of the league’s existence, we can look for evidence of what it did. John Forster at The Examiner acquired and used a comprehensive set of limited liability pamphlets, surely sent by the league.186 One of the few voices raised against it was that of Edward Cox, editor of the Law Times, who loathed limited liability and Lowe in equal

181 Robert Lamont, The Principal Sources of England’s Greatness. A Retrospect, being reminiscences of the origin, progress, and great extension of screw steam shipping, and also of the origin and enormous growth of limited liability joint stock companies since the law was altered permitting such companies to be formed in the United Kingdom. (London, 1888), pp16-17.
182 3 July 1880 letter to Thomas Farrer, Board of Trade, BT 22/34/3.
184 BT 22/34/3.
185 In an 1889 letter Lowe confirmed that Lamont gave ‘the true doctrine on the subject’ in The Principal Sources [p19]. Lamont reproduced the letter in a draft Memorial To the Merchants, Under-writers, Bankers (Limited Especially), Screw-steam ship Owners and Traders of the United Kingdom, SOAS, Mackinnon papers, PPMS1, 142, f14.
186 Forster papers, V&A, F 37 A11, D8 and K 11.
measure. If Cox is to be believed, *The Times* now blocked any attempt to oppose limited liability in its pages.\(^{187}\) The league had mixed success with City figures and political economists, but this is unlikely to have worried them unduly. The opposition of monopolistic ‘great capitalists’ was the dominant theme of lobbying, and public pronouncements show little interest in the niceties of economic argument. They were primarily concerned to emphasize the key points of a case, as a barrister or politician might. Most obviously, they were concerned to *win*.

We owe knowledge of the league’s existence to Lamont, and he deserves the last word here. In old age, he tried to publicize past achievements, in a bid to raise money, and the results have ended up in a number of archives. He saw the irony in how this had played out, in saying: “but for the severe reverses of fortune [I have] experienced the world would never have known, possibly of the above facts”.\(^{188}\)

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\(^{187}\) *Law Times*, 26 April 1856, p57.

\(^{188}\) Mackinnon papers, PPMS1, 142, f14, printer’s proof.
Who had the right to fail? Insolvency regulation in German entrepôts, 1850-70

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I. Introduction
Bankruptcy poses a predicament to societies: strict creditor-protection might result in harsh bankruptcy rules that discourage entrepreneurial activity. Debtor friendly bankruptcy laws, on the other hand, could deter creditors from lending money in the first place. Full enforcement of property rights and collateral can enhance the credibility of financial instruments. Yet enforcing everything at the same time can become self-destructive.

The various German states of the nineteenth century found different solutions to this dilemma. The present paper is part of my PhD, in which I endeavour to analyse and compare those historical bankruptcy laws. This paper focuses on the free cities in the North: Hamburg, Bremen, and Lubeck.

I am going to argue that merchants in those cities created specific rules that helped them settle their peers’ insolvencies and lowered transaction costs for members of that community both within and outside bankruptcy. To be sure, merchants still dreaded bankruptcy. Yet the insolvency regulation in those port towns exhibits a remarkably pragmatic stance on the problem of bankruptcy – at least for some.\textsuperscript{189}

II. Institutional Framework

(1) Bankruptcy as a club good?
German towns were administered and governed as an amalgamation of clubs. Guilds, parishes, and other corporatist bodies were the core organizational units and pillars of a city’s self-administration.\textsuperscript{190} Despite a number of reforms in the Napoleonic era, these bodies continued to play a vital role throughout the nineteenth century.\textsuperscript{191} When dealing with the North German city-states it would be misleading to assume a modern notion of statehood.

These corporatist bodies performed vital functions for the community: regulating the labour market, organizing poor relief, arbitrating disputes amongst its members, and providing important infrastructure.\textsuperscript{192} The merchant organizations usually administered the local Bourse and sent merchants as lay judges to the commercial court. Whether or not this was the best way of organizing a municipality remains a different question.\textsuperscript{193} But it is certainly worth enquiring about the role these clubs played in regulating the issue of insolvency.

\textsuperscript{190} Whitman, \textit{The Legacy of Roman Law in the German Romantic Era: Historical Vision and Legal Change}, (Princeton, 1990), pp. 7-9, 71-81.
Economic theory suggests that club goods are impure public goods. They provide goods, which would be too expensive to be produced privately, and their consumption remains confined to a predefined membership circle. Their existence and form is determined by two variables: the size of membership and the size or quantity of the good produced. 194

Legal frameworks and dispute settlement mechanisms can be provided as club goods. Every legal framework builds on scale effects. It only works if it can comprise enough people or cases to become ‘relevant’. The costs of running the system need to be spread across a large enough membership. 195 However, membership needs to be confined or else production of the good becomes prohibitively costly. Every member added to the club will increase production costs. What precisely these costs are depends on the good in question.

(2) Bankruptcy and local credit markets

What was the club’s ‘good’ in our case? What did merchants view as the primary task of their bankruptcy framework? On the one hand, a lenient treatment of insolvent debtors could have literally discrediting effects on the city’s reputation as a trading place. In 1785 the Lübeck Bergenfahrer, one of the city’s corporatist bodies, wrote to the city council:

As it is the case that the prosperity and reputation of this good city rests on trust and credibility, (...) commerce must suffer, if one does not repay honestly what one hath borrowed (...) [we] deem it necessary that fraudulent bankrupts be punished (...) so that our local Bourse does not fall into disregard with guests and our diligent merchants shall not lose access to their credit.196

On the other hand, actors knew that bankruptcy was a concomitant of entrepreneurial activity. Bremen’s city council called bankruptcies a ‘ubiquitous phenomenon’ of a port town. 197 According to Johann Georg Büsch, the director of the Handelsschule in Hamburg, a high number of bankruptcies was an indicator for high entrepreneurial activity at a place.198

Many merchants were simultaneously creditor and debtor; members of the mercantile community collaborated and depended on each other. 199 Thus, every bankruptcy of one member subsequently affected a range of further members. Johann Friedrich Hach, a law professor in Lübeck, compared bankruptcies to little stones, which, when thrown into water, created eccentrically expanding rings.200 An ‘uncontrolled’ bankruptcy threatened to shake credit networks and disturb ‘trust and credibility’.

Both councilmen and jurists were acutely aware of the difference between a ‘proper’ insolvency on the one hand and short-term liquidity problems on the other hand. The former was an economic problem, where the business-model proved inherently unprofitable; the latter was a financial problem, but once overcome, business could still thrive. The fear that bankruptcies could disrupt local credit markets led councilmen to view it as a vital task of the law to create a filtering mechanism to distinguish between viable and unviable firms. Reorganizing a merchant’s debts could serve the city’s interests better than liquidation and court action. To quote Johann Friedrich Hach again:

194 Buchanan, ‘An Economic Theory of Clubs,’ Economica 32/ 125 (1965), 1-14
196 Petition of the Bürgerschaft to the city council, 1785 (without day or month), Archiv der Hansestadt Lübeck, Bergenfahrer, Fallitenordnung 1796.
197 Staatsarchiv Bremen, D.11.a.5 Berichterstattung wegen heimlicher Accorde, Minutes of the City Council 31.03.1797 and 25.01.1798.
198 Büsch, Versuch einer Geschichte der Hamburgischen Handlung nebst zwei kleineren Schriften eines verwandten Inhalts, (Hamburg, 1797).
200 Hach, Johann Friedrich, ‘Gedanken über das Fallitenwesen in Lübeck’, in Archiv der Hansestadt Lübeck, 05.4 Gemeinnützige Gesellschaft 05.02 Einzelne Vorträge.
Every bankruptcy diminishes the general and public wealth; the bequeathing Burgher becomes a consuming dweller, and quite often he loses both his capacity and desire to contribute directly to public life (...)\(^{201}\)

In essence, merchants worried about the negative externalities of bankruptcy, its impact on the costs of borrowing and lending and thus on the single most important artery of commercial ventures in those towns. The club’s ‘good’ was a bankruptcy regime that tried to minimize these negative externalities under the condition, that membership was confined and easy to monitor.

(3) The insolvency regulation in Hamburg, Bremen, and Lubeck

Focusing on the three northern Hanse towns, I should like to highlight four institutional characteristics that strike me as particularly important: First, bankruptcy laws in these towns allowed for more than one procedure. They discarded the ‘one fits it all’ rule. If a debtor declared his insolvency, the default rule was to appoint a commission of at least two senators who would summon creditors, appoint an administrator and oversee the ensuing bargaining. If parties could agree on an amicable settlement, their job was done. If parties failed to agree, the case went into formal procedure at court, which usually meant liquidation.

Debtors below a certain threshold of debts were considered ‘petty cases’ and were conferred to the so-called Dielenverfahren.\(^{202}\) The name stems from the custom that these cases were decided by one of the city’s mayors, in a condensed time frame and at the vestibule of his home, the Diele.

The second feature concerned the hierarchy among creditors. It is a widely acknowledged function of bankruptcy laws to help avoid costly battles over the distribution of value among creditors. Bankruptcy codes often prescribe a catalogue of ‘equitable distribution’ among parties. While Prussian and Saxon law protected certain claims in bankruptcy by way of granting them absolute priority, the bankruptcy law of the free cities curtailed this privilege of securities.\(^{203}\) This came to the advantage of unsecured creditors.\(^{204}\)

This latter point tied directly into the third feature: the laws’ emphasis on amicable out-of-court agreements, accords. A sticking point was the question of how an agreement was reached.\(^{205}\) By unanimity or by a simple majority? The Hanse towns opted for the latter. The majority was defined as both majority of voting creditors that together also commanded the largest share of claims. The municipal statutes already knew the concept of a ‘forced accord’. If a debtor could promise more than 40 per cent to his senior secured creditors, 30 per cent to the junior secured creditors and 20 per cent to the unsecured creditors, the accord was adopted automatically.\(^{206}\)

Last but not least was the eligibility question. It was not determined by an explicit definition but rather composed of dispersed prerequisites. The distinction between petty cases and ‘normal’ cases, as mentioned above, was part of this. Citizenship was another barrier. If a debtor had foreign creditors, they needed a local citizen to represent them in the proceedings.\(^{207}\) The single most important prerequisite for gaining access to the bankruptcy ‘infrastructure’ was membership in one of the corporatist bodies. The so-called Kaufmannschaften or Commerzdeputation, legacies of the older merchant guilds,

\(^{201}\) Ibid.
\(^{202}\) Der Stadt Hamburg Neue Falliten-Ordnung (Hamburg, 1823), [henceforth NFO], Art. 109.
\(^{204}\) NFO, Art. 47.
\(^{206}\) NFO, Art. 50 No. 1.
\(^{207}\) Ibid., Art. 4.
administered and supervised the system. The Schütting, in Bremen the house of the Kaufmannschaft, in Lübeck the residence of the Schonenfahrerkompanie, was the place where insolvency cases were displayed on public boards, and, in case it ended in a liquidation, assets were publicly auctioned by registered brokers.

III. Empirical evidence

Court records, though fragmentary, allow us to test some of these qualitative observations. The Commerzdeputation in Hamburg, which also administered the local Bourse, kept a list of all insolvency cases in town, both out-of-court agreements and formal bankruptcy procedures. Unfortunately, records for the time 1837 to 1850 are missing. More detailed records of individual court procedures can be found in the Hamburg Staatsarchiv.

Figure 1 shows absolute frequencies of bankruptcy cases as recorded in the books of the Commerzdeputation. Following the crisis in 1857, the city council briefly suspended the traditional bankruptcy law until summer 1858 to implement a special rescue mechanism. Figure 2 draws on these records to compare formal court procedures with settlements. Frequencies are given in relative terms, weighed by the city’s population. Until the middle of the 1850s, settlements dominated. In contrast, only 0.3 formal court procedures per thousand inhabitants took place in 1850.

Figure 1: Absolute frequencies of bankruptcies in Hamburg, 1800-70

Source: Stiftung Hanseatisches Wirtschaftsarchiv, Safebestand der Commerzbibliothek, S/599 122 a-d blau.


Figure 2: Out-of-court settlements and formal procedures, 1826-70


Taking a closer look at the settlements helps examine whether the institutional framework indeed facilitated solution to bankruptcy. Figure 3 plots a histogram of recovery rates that were recorded for settlements in the abovementioned record books. ‘Recovery rate’ is defined here as the value realized through the administration of assets and paid back to creditors. Focusing on cases that actually paid something back to their creditors shrinks the original sample from some 8,000 cases that were recorded in total in the record books, to 564, only 7 per cent. The dividend that was paid in settlements only reached an average of 15.14 per cent. This figure was far below the threshold of 40 per cent that had been set for a Zwangsvergleich, an accord to which creditors were legally bound to give their consent. This finding indicates that the lion’s share of all accords was concluded voluntarily. Creditors did not have to agree to settlements below 40 per cent. But they did nonetheless.

Figure 3: Recovery rates from out-of-court settlements

Source: ibid.
The law primarily targeted the city’s mercantile group. This becomes visible upon a closer look at the occupations as given in the court records. The category ‘merchant’ (Kaufmann) was the largest cohort, followed by ‘dealer/shop-keeper’ (Händler/Krämer), then ‘craftsmen’ (Handwerker), and ‘manufacturer’ (Fabrikant). They stood out as a group. Table 1 below groups merchants together with shopkeepers and manufacturers into ‘businessmen’ on the one hand and everyone else into ‘the rest’ on the other hand. Cases of the former took longer to settle and paid back smaller amounts to creditors. Both the mean and the median for the recovery rate are substantially lower for businessmen than for anyone else.

Table 1 Distribution of occupations in the sample of court cases from the Hamburg commercial court 1850-1870 and descriptive statistics

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<td>mean median</td>
<td>mean median</td>
<td>mean median</td>
<td>mean median</td>
</tr>
<tr>
<td>‘Businessmen’</td>
<td>686</td>
<td>62,727 24,200</td>
<td>45 38</td>
<td>17.58 9.50</td>
<td>33 26</td>
</tr>
<tr>
<td>The Rest</td>
<td>272</td>
<td>20,346 11,582</td>
<td>37 35</td>
<td>22.56 14.00</td>
<td>30 23</td>
</tr>
</tbody>
</table>

IV. Interpretation and conclusion

The bankruptcy regime in the northern German Hanse towns could be described as a filtering device. It provided a variety of procedural rules and substantive norms to distinguish between a viable and an unviable firm, a fraudulent debtor (which would subsequently be punished) and an honest debtor; to distinguish between members of the mercantile community and petty cases of town dwellers of lower ranks. A number of hurdles ensured that only ‘appropriate’ cases had access to the system. Criteria of eligibility included full citizenship, membership of the Kaufmannschaft and a certain size and respectability of business activity.

The system offered different paths out of bankruptcy and left the decision over reorganization versus liquidation to creditors. Higher authorities only intervened to the extent that members of the city council oversaw the bargaining and appointed an administrator of the bankrupt’s estate. There was quite a bit of overlap of personnel between the city council, the merchant guild and the commercial court. In essence, the system ensured that merchants could settle cases amongst ‘peers’.

The empirical evidence supports this interpretation. An examination of the record books of the Hamburg Commerzdeputation shows that settlements used to be the most frequent form of bankruptcy in town up to the 1860s. In the majority of those settlements, creditors voluntarily agreed to a substantial haircut. In the sample of court cases, manufacturers, merchants, and shopkeepers stood out as a group. On average, they accumulated the highest amounts of debt and simultaneously paid back the smallest rates to their creditors.

The beneficiaries of this system were members of the merchant community when trading with each other. The insolvency regulation allowed them to enter a settlement procedure easily and minimize the costs of bankruptcy. Financial difficulties did not necessarily trigger expensive court procedures. The decision over liquidation and reorganization was left to insiders. And enforcement of accords and monitoring of both the debtor and other creditors was made easy in the club character. Local credit markets probably benefited from such a framework that was designed to lower transaction costs. This is what some of the sources mean when they highlight the link between a bankruptcy regime and ‘access to credit’. Further research should attempt to unearth more quantitative evidence to support the claim that merchants in Hamburg or Bremen could borrow at lower cost than elsewhere.

210 Staatsarchiv Hamburg, 222-3 B1 Handelsgericht, Register Vols 1-7.
Historical development of the Chinese Shanxi piaohao (remittance firms), 1823-1920

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1. Introduction
The Shanxi piaohao was a type of Chinese financial institution established and managed by merchants living in China’s Shanxi province. As the largest Chinese indigenous financial institutions, these piaohao were the survivors from a series of political upheavals and played important roles in the Chinese financial market for many decades. However, when the 1911 Revolution broke out it fundamentally halted their development. Moreover, the intrinsic risks in their business structure that began to emerge in the 1900s also accelerated their decline and in the 1910s they risked being eliminated altogether.

From an extensive dataset that I have compiled, I first estimate the annual business volume, revenue and profits of the piaohao from the 1840s to the 1900s. Moreover, by describing their losses during the 1911 Revolution my paper spots the devastating impact of this revolution on the piaohao. Last but not least, from analysing changes to the piaohao business, income, and expenses structures overtime, the paper also identifies potential risks in their business structure which hastened their fall. All these analyses have been overlooked in previous studies due to the scarcity of data and are the contributions of this paper to scholarship.

2. New archival evidence and its findings
Previous researchers on the piaohao more or less made assertions on the basis of scattered data and anecdotal evidence. Lack of data prevented any comprehensive study of the piaohao, in particular on their historical changes. In order to explore the development trajectory of the piaohao, I have collected more than 1,200 business letters from an archival book, ‘Archival Materials of the Shanxi Piaohao’ (Huang, 2002) and gathered 20 monthly and annual balance sheets referring to the piaohao from the Advanced Library of Asia Studies, University of Tokyo.

Through coding the information from the piaohao letters, I have compiled a dataset with 30,000 entries regarding their daily operations between the 1840s and the 1900s. This dataset covers the names of the piaohao clients, the amounts and types of the silver they dealt in, the places that their drafts were sent and also the fees they charged, etc. Moreover, by organizing their balance sheets, my paper also found changes in the piaohao bookkeeping methods. This unique dataset not only allows me to undertake thorough analyses on the piaohao but also fills some data vacancies in Chinese banking history.

Besides the contribution of the data, another area of significance in my study is its new discoveries on the business of the piaohao. From their letters, I initially identified the interactions among their three types of remittance draft: original drafts [交], loan drafts [收], and inverse drafts [逆]212 By combining the original drafts and loan drafts, the piaohao lent free capital in original drafts to capital demanders in the form of loan drafts. Designing inverse drafts empowered them to mobilize silver from a capital abundant place to capital short place without shipping silver, thus reducing transaction costs.

211 The 1911 Revolution is an uprising which ended the Chinese imperial system and established a republic government in China.

212 An ‘original draft’ refers to a client who gives silver to branch A and can receive it in branch B; A ‘loan draft’ refers to a client who borrows from branch A for remittance to branch B, and will pay it back to branch A in future; an ‘inverse draft’ refers to a client who borrows from branch A for remittance to branch B which is paid back to branch B in the future.
Most of the data used in this paper are from the Ri Sheng Chang (RSC) piaohao. The reasons for selecting this piaohao are that it was not only the first and one of the largest Shanxi piaohao of its time, but its activities were also adequately recorded from its early establishment in the 1840s to its bankruptcy in the 1910s. Moreover, since all the piaohao used guilds to share business information which was sometimes documented in the RSC letters, from these records I have found that other piaohao adopted similar business strategies with the RSC. Furthermore, from the years when the Shanxi piaohao were set up and closed, it can be seen they rose and declined as a group. Therefore, the historical development of the RSC to some degree reflects the development of other piaohao.

My paper acknowledges that inferences made from a case study can sometimes be difficult to generalize. However, in view of the limited primary sources a case study may be the most effective way to illustrate the business picture of the Shanxi piaohao.

3. Historical development

3.1 Business structure

Figure 1 illustrates the business structure of the RSC in the 1840s, 1850s and 1900s in sequence. The size of each stacked column is the proportion of different businesses, and the figure next to the column is the value of the business. From figure 1 it can be seen that remittances are consistently the backbone for the piaohao. As time went on, loan business increased its share from 1 per cent in the 1840s to around 15 per cent in the 1900s. In contrast to the rise of the loan, the deposit share kept relatively constant over time. From the values of these business practices, it can be found all these three types of business grew over time.

Figure 1: Business structure for the RSC in the 1840s, 1850s and 1900s (tael)\(^{213}\)

![Business structure for the RSC in the 1840s, 1850s and 1900s](source)

Source: Compiled based on the RSC piaohao annual balance sheet for 1849 in one unnamed branch, 1852 in Qingjiangpu, 1853 Jiangxi, 1856 Suzhou, 1906 Xian, Kaifeng, Hangzhou, Guilin, Guangzhou, Changsha, Xiangtan, Guangzhou and Chongqing branches (collected in the Advanced Asia Studies Library, University of Tokyo)

3.2 Income and expenses structure

Besides business structure, based on its balance sheets my paper also depicts the RSC annual income and expenses structures in figures 2 and 3 respectively.

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\(^{213}\) The unit account currency in Qing China is silver tael (tls hereafter).
From figure 2 it can be found that the RSC’s revenue came from received interest income, remittance service fees, silver weight and purity disparities income and other incomes. Among these incomes, received interest and remittance service fees took up 62 per cent and 28 per cent respectively of the total income in the 1840s and occupied 42 per cent and 33 per cent respectively in the 1850s. Besides these two types of income, income from silver weight and purity disparities and other incomes together occupied 8 per cent and 25 per cent of the total income in the 1840s and 1850s respectively.

From the 1860s, income from remittance service fees increased abruptly to 99 per cent while other types of income disappeared. This change can be explained by the change by the RSC of classification of the income sources. From their business letters and balance sheets, my paper has found that in the 1840s and 1850s, the RSC combined the interest earned from loan drafts and loan business together and designated them ‘received interest’. However, from the 1860s, to make their letter writings quicker, they separated the two and ascribed the interest from loan drafts to the remittance service fees. This is why the remittance service fees soared. In the 1900s, with an increase of loan business (see figure 1), income from the received interest income appeared again with a share of 13 per cent, but the remittance service fees still had the largest share of 85 per cent.

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214 This income classification change can be further evidenced by figure 1. In the 1860s’ balance sheet, there was no record of any loan and deposit business, and thus no interest income or expense was documented.
Figure 3: Expenses structure for the RSC in the 1840s, 1850s, 1860s and 1900s

Source: ibid.

Figure 3 shows the expenses structure of the RSC, from which it can be found that there were eight types of expenditure, namely, property rents, board expenses, paid interest, paid interest on remittances [贴费], bad loan amortization et al. \(^\text{215}\) In the 1840s there were five types of expense which included 40 per cent paid silver weight and purity disparities, 22 per cent paid interests, 20 per cent board expenses and 17 per cent property rents. Bad loan amortizations occurred in the 1850s, with a share of 3 per cent. Increasing shares in property rents, paid interest and board expenses also replaced expenditure on paid silver purity and weight disparities in the 1850s.

As with the income structure, in the 1860s, the piaohao separated paid interest on original drafts from paid interests on deposits. This change made their paid interest on remittance climb from zero to 40 per cent. Moreover, board expenses also increased their share by 10 per cent. In the 1900s, expenses on postage, banquets, and office operations occurred, with a share of 5 per cent. Furthermore, paid remittance interest grew further from 30 to 70 per cent. From the real values of these expenses, it can be found that, over time, all expenses increased in amount. Combining the values in figures 2 and 3, it can be obtained the ratio of expenses/income grew from 0.22 to 0.78 between the 1840s and the 1900s.

3.3 Remittance

After illustrating the piaohao business, income, and expenses structures, figure 4 shows the annual remittance, loan, and deposit volume changes for all the Shanxi piaohao from the 1840s to the 1900s. From this it can be found that overall, the Shanxi piaohao lived through three troughs. The first occurred in 1860-4, when the Taiping Rebellion (1852-64) and the Nian Rebellion (1851-68) broke out.\(^\text{216}\) As soon as these two upheavals died down, the business of the piaohao recovered and then steadily increased until the First Sino-Japanese War (1894/5) slightly affected them. Although their business shrank during the war, they revived soon after the war ended. But in 1900/1, these piaohao encountered another fall when the Boxer Rebellion (1900/1) broke out.\(^\text{217}\) This impact on the piaohao disappeared after the rebellion was suppressed, and at the same time the piaohao entered the last stage of their development which lasted until the 1911 Revolution took place. As soon as the revolution broke out, their business fell into gloom and many of them went bankrupted.

\(^\text{215}\) Board expenses represent expenditure on employees’ food, accommodation and salaries.

\(^\text{216}\) The Taiping Rebellion (1850-64) was an anti-Qing regime rebellion in southern China. During more or less the same period, the Nian Rebellion (1851-68) broke out in central China.

\(^\text{217}\) The Boxer Rebellion (1900/1) was an anti-imperialist uprising which took place in northern China.
Over time, its three types of business show similar fluctuations. From the 1840s to the 1900s annual remittance doubled its figure from 110 million tls to 252,337 million tls and annual loans rocketed from 1.8 million tls to 47 million tls. Unlike the remittance and loan business which experienced substantial increases, deposits grew by only 4.7 times from 1.8 million tls in the 1840s to 8.7 million tls in the 1900s.

Figure 4: Annual remittance, loan, and deposit volume changes for all the Shanxi piaohao, 1840s-1900s

![Graph showing remittance, loan, and deposit volume changes for Shanxi piaohao, 1840s-1900s]

Note: Unit silver taels 1,000
Sources: Compiled based on business correspondence of the RSC piaohao 1840s to 1900s, see Huang (2002 pp.833-1077.).

Besides business volume, my paper also estimates the annual revenue and profits for all the Shanxi piaohao during the 1840s-1900s and figure 5 shows the results. It can be found that as with their business, these piaohao experienced a similar rise and decline in their revenue and profits. From the 1840s to the 1900s, the piaohao annual revenue increased 16 times from 1.5 million tls to 25 million tls. Far from a big jump in annual revenue, their annual profits increased only three times from 1.4 million tls to 4.4 million tls, and this could be attributed to growing expenses (see figure 3).

Figure 5: Annual revenue and profits changes for all the Shanxi piaohao, 1840s-1900s

![Graph showing annual revenue and profits changes for Shanxi piaohao, 1840s-1900s]

Note: Unit silver taels 1,000
Sources: Compiled based on business correspondence of the RSC piaohao 1840s to 1900s see Huang (2002 pp.833-1077); RSC piaohao annual balance sheet for 1849 in one unnamed branch, 1852 Qingjiangpu, 1853 Jiangxi, 1856 Suzhou, 1906 Zhoujiakou, Changsha, Xiangtan and Chongqing branches (collected from the Advanced Asia Studies Library, University of Tokyo)
3.4 Sudden collapse and risks in their business structure

While the piaohao were enjoying a business expansion brought about by China’s increasing importing and exporting trade, the 1911 Revolution broke out, abruptly disturbing their development. Unlike previous upheavals, the 1911 Revolution occurred overnight and quickly spread nationwide. The scale of this uprising hardly gave the piaohao any time to prepare, and massive looting and atrocities brought them huge losses. Table 1 summarizes the property and cash losses reported by twelve Shanxi piaohao during the revolution. It shows that on average, each piaohao lost a cash reserve of 111,325 tls and properties valued at 30,857 tls. In total they lost 1.6 million tls in cash and properties. Combining this figure with the annual profits of the piaohao (see figure 5) it can be found that the value equalled one-fourth of all the Shanxi piaohao annual profits in the period 1900-9.

<table>
<thead>
<tr>
<th>Property</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min</th>
<th>Max</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver in cash</td>
<td>111,325</td>
<td>94,397</td>
<td>8,900</td>
<td>304,750</td>
<td>1,335,896</td>
</tr>
<tr>
<td>Properties</td>
<td>30,857</td>
<td>24,043</td>
<td>0</td>
<td>77,200</td>
<td>308,570</td>
</tr>
<tr>
<td>Sum</td>
<td>137,039</td>
<td>100,253</td>
<td>8,900</td>
<td>349,000</td>
<td>1,644,466</td>
</tr>
</tbody>
</table>

Sources: Compiled based on ‘The joint letter of the Tian Cheng Heng and the other eleven Shanxi piaohao to the Beiyang Government’, 30th September 1913, Ministry of Finance Archive, Beiyang Government; see Huang (2002, p.488.).

Besides the losses from looting, bad loans and the continuous withdrawal of deposits also worsened the piaohao situation. Table 2 describes their loan and deposit business during the 1911 Revolution; it shows that on average each piaohao reported 1.7 million tls of deposit and 2.2 million tls in loans. From their reports to the government from late 1911 to 1913, less than 10 per cent of their loans had been recovered. For a piaohao which had about 1 million tls paid up capital, a loss of this kind could be devastating. Facing the risk of elimination, these Shanxi piaohao turned to the Beiyang government for help. But their lack of connection with this newly established government dimmed their hope. Although these piaohao tried to unite together and establish a joint stock bank, the lack of capital finally made them incapable of surviving. By the 1920s, only eight piaohao were in operation, and in the 1930s, no more than two were left.

<table>
<thead>
<tr>
<th>Business</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit</td>
<td>1,792,265</td>
<td>498,617</td>
<td>3,050,576</td>
<td>25,100,000</td>
</tr>
<tr>
<td>Loan</td>
<td>2,250,664</td>
<td>507,442</td>
<td>3,519,494</td>
<td>31,500,000</td>
</tr>
<tr>
<td>Total</td>
<td>4,042,929</td>
<td>1,006,059</td>
<td>6,554,504</td>
<td>56,600,000</td>
</tr>
</tbody>
</table>

Sources: ibid.

4. Conclusion

The above analyses show the historical changes in the piaohao business, income, and expenses structures. It also estimates the annual business volume, revenue, and profits for all the Shanxi piaohao and discusses the reasons for their decline. It can be found that the Shanxi piaohao developed in an atmosphere of turbulence. Although they survived from a series of upheavals, the 1911 Revolution had a devastating impact on them. Besides political turmoil,
rising expenses and a narrowed deposit base became a potential risk for them and accelerated their decline. These analyses and findings are consistent with the findings of contemporary scholars who described the history of the piaohao qualitatively.

5. Appendix

Table A1: the Number of Shanxi piaohao at different periods

<table>
<thead>
<tr>
<th>Period</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1840s</td>
<td>15</td>
</tr>
<tr>
<td>1850s</td>
<td>17</td>
</tr>
<tr>
<td>1860-4</td>
<td>16</td>
</tr>
<tr>
<td>1864-9</td>
<td>16</td>
</tr>
<tr>
<td>1870s</td>
<td>26</td>
</tr>
<tr>
<td>1880s</td>
<td>24</td>
</tr>
<tr>
<td>1891-3</td>
<td>25</td>
</tr>
<tr>
<td>1894/5</td>
<td>25</td>
</tr>
<tr>
<td>1896-9</td>
<td>25</td>
</tr>
<tr>
<td>1900/1</td>
<td>26</td>
</tr>
<tr>
<td>1902-9</td>
<td>26</td>
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<tr>
<td>1910-9</td>
<td>8</td>
</tr>
<tr>
<td>1920-9</td>
<td>2</td>
</tr>
</tbody>
</table>

6. References

The colony, the club and the corporation: the persistence of gentlemanly capitalist networks in India

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I

On examining the history of Indian industry, it is possible to plot how groups of indigenous manufacturing elites emerged in the nineteenth century during the British Raj via Anglo-Indian agency – the exchange of emerging technology, finance and political patronage. Existing literature on the industrialization of British India accrues to form a compelling narrative of what Cain and Hopkins (1993) call the ‘imperial purpose’,220 which they extend and elevate with their ‘all-embracing’221 concept of gentlemanly capitalism.

Central to Cain and Hopkins’ definition – and correspondingly central to their critics’ divergences in the surrounding debate – is the role of the metropole versus the so-called ‘periphery’. Considering India as an ‘Extension of the Gentlemanly Order’,222 they address, in short, the British metropolitan adaption to India and its imposition on India. Notwithstanding the glibness of the word ‘periphery’ to denote all of Britain’s imperial possessions outside the metropolitan economy, it is perhaps the dominance223 of City interests in recent historiography of imperial history that permits gaps in the literature. The notion of a bilateral evolution of gentlemanly capitalist ideals in India, though alluded to by Cain and Hopkins’, was first rendered in depth in the work of Harlow and later Bayly. Bayly’s Indian Society and the Making of the British Empire (1988) and Imperial Meridian (1989) use the concept of colonial hybridity224 to further expound upon Harlow’s analysis of developing institutions that subsumed previous Mughal ones and gradually involve certain indigenous communities and castes. Accepting Cain and Hopkins’ definition of gentlemanly capitalism to prevail until 1830,225 Bayly’s institutional analysis of social relations and gentlemanly behaviour in India largely ends here.

Daunton’s critical analysis reassesses Cain and Hopkins’ concept, softening the class lines between industry and City due to ‘direct functional connections between gentlemanly capitalist and industrialist’.226 These are particularly relevant when considering commercial interests in the ‘periphery’. Bringing gentlemanly values at the forefront, the institutional analysis can be extended from the late nineteenth century onwards, by closely examining the network of increasingly powerful colonial establishments that remained in the control of those same ethnic communities and families, and (like British nobility) passed hands down the family line. Specifically, we examine the persistence of gentlemanly behaviour by delving into the stories of the large-scale Indian industrialists who took on British values and developed their family businesses under British patronage – thus becoming ‘the brown Englishmen’.227

223 Various; see A.Porter (1990) for a summary.
226 Porter (1990) p.268
Using primary evidence collected from 27 elite interviews (with Indian business leaders from former colonial-era industrialist families, their companies’ senior management) and numerous archival sources (national, provincial and corporate data) in Britain and India, this research uses the vehicle of corporate narratives to demonstrate socioeconomic persistence of gentlemanly ideals amongst powerful industrialist dynasties in India today. The full dataset for this research covers 15 such Indian families of the Bombay Presidency region in depth, however for the purpose of this short paper we present within the broader context of Indian industry, a case study focusing on the industrial evolution of one such family enterprise – the Mafatlal group.

II
The mid-nineteenth century brought a tangible will for Anglo-Indian collaboration amongst the British establishment, which exported eighteenth-century British aims and values via the colonial masters. Cain and Hopkins describe this phenomenon – how being ‘able to merge their own rent-seeking and capitalist purposes’, the latter took to Indian paternalism. The trend for inclusivity and progressiveness is evident from a top-down analysis. Governor-General Lord William Bentinck pioneered this mission to ‘raise a middle class of native gentlemen’ as agents for social change and industrial development. As Thomas Babington Macaulay considers, those ‘ … who may be interpreters ( … ) a class of persons Indian in blood and colour, but English in taste, in opinions, words and intellect’.  

The colonial encouragement – and often, direct British patronage – of indigenous industry ensured gradual dissemination of newly developed industrial processes and technologies from Britain to India following the 1813 amendment of the East India Company Charter. Indian families from specific trading communities – usually Parsi, Marwari, and Gujarati – became the means by which imperial organizations slowly stimulated early capitalism in India, and established colonial Bombay, Madras and Calcutta as commercial centres of trade while the Manchester ‘millocracy’ established Bombay’s industrial production of cotton textiles. These families based on existing trade relations with the East India Company, were able or willing to work within British institutions. In a manner inconsistent with existing models of imperial strategy in tropical areas, Indian trading families retained ownership of joint stock companies and enjoyed close connections with the British establishment at various levels.

One early such example is the Parsi Wadia family, who adopted emerging textile technologies for their flagship company Bombay Dyeing (1879), built upon an existing relationship with the East India Company in heavy industry trade and shipbuilding. Like many of the indigenous businesses of era, the Mafatlal family’s corporate story begins with more informal associations with British expatriates who enabled business establishment and – crucially, technology transfer, which was a steep barrier to entry in the nineteenth century. In

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230 Thomas Macaulay Papers, Minute on Education, National Archives, Delhi.
234 Including the Wadia, Tata, Mafatlal, Birla, Singhania, Thackersey, Siriram, Ambani, Mahindra, Goenka, Modi Ralli, Dalmia, Lalbhai, Sarabhai, Walchand, Piramal, Kirloskar, Makanji, Thapar, and Apte families.
1905, cotton peddler Mafatlal Gagalbhai of Nadiad, Gujarat, founded his first textile mill – Shorrock Spg & Mfg Co. – based on a friendship with Lancashire-based Arthur Gordon Shorrock, who managed a small defunct mill in Ahmedabad. A descendant of Eccles Shorrock (India Mill, Darwen Lancashire), he had close familial ties with Lancashire-based machinery manufacturers and could obtain technology on highly advantageous terms.

Strikingly the Mafatlal story has at its core the will for social mobility, both on the British and Indian sides. The early twentieth century was a period of ‘transition and upheaval’ for textile trade in India. Diminishing local acceptance of Anglo-Indian cooperation was countered by the substantial financial fruitfulness for both parties. Before the Swadeshi movement gained momentum, a partnership like the Mafatlal-Shorrock one would be considered ‘prestigious’ for Indians (Englishmen being seen as associated with the British establishment, as well as offering high-technology products) and crucially for both parties rendered class and caste designations less relevant. Much like their British technology collaborators of north England, the Indian industrialist families were largely outsiders to the social elites of the Hindu caste system – either like the Mafatlals, of trading or agricultural backgrounds or like Parsees, outside the system itself. Mafatlal Gagalbhai, endowed with ‘only his ingenuity to rise above his circumstances’, used his humble kanbi community background to raise finance for the shrewd partnership. Shorrock meanwhile benefited from dropping away from the socioeconomic stigma of the nouveau-riche Northern industrialist to which Cain and Hopkins refer. With reference to Indian industry, the white man in India – regardless of industrial background – was the new ‘gentleman’, willing and able to pass the baton to his upward-moving Indian counterparts.

These Anglo-Indian ties evidently persisted; during the height of the independence movement, the British establishment remained close to the Indian gentlemen, even seeking their counsel on matters of political unrest. Lord Zetland, Secretary of State for India wrote of Ahmedabad industrialist Kasturbhai Lalbhai:

I have always found Indians peculiarly susceptible to personal friendship and I think it does make a great deal of difference to them to find themselves on terms of personal friendship with Englishmen, however great may be their difference on political and commercial questions.

III

In a manner beyond mere westernisation, the cotton culture pandered to decidedly English ideals, from ‘christened’ mill names to the club culture. Amongst others the Mafatlals owned Shorrock Mill, Standard Mill (previously owned by the Parsi Tata family, who were very closely aligned to the British administration and of whom several enjoyed British honours), New China Mill, New Union Mill, and Sassoon Mill (the latter two purchased from the Sassoon family, ‘Anglophiles … [who] … tried to set up, with some success, as members of the English nobility, with country estates and townhouses, dancing attendance on the English Royal family’). Gita Piramal, of the Piramal family, along with collaborator Margaret Herdeck describes how by the 1930s, Gagalbhai Mafatlal could be seen ‘in suave clothes, … present[ing] a vastly changed personality from his early Ahmedabad days.

238 Cotton Town – Blackburn Central Library Archives
240 ibid. 181
241 ibid.
242 ibid. 181
243 ibid.
244 Cotton Papers, India Office Records and Private Papers, British Library.
245 ibid.
246 Interviews with Respondents A,B,C and D; Mafatlal Group.
Dedicated application to a mastery of the English language, frequent trips to European countries and minute attention to social niceties helped Mafatlal entrench himself and his family in Bombay society.\(^{248}\)

The prestige of exclusivity of being an industrialist brought a networking culture recalling Cain and Hopkins’ gentlemanly capitalism. This is perhaps most tangibly seen in the notion of having membership to Bombay’s historical colonial clubs. Club membership had – and continues to have – implied perceptions of establishment and tradition, and British association. Asked about the prestige surrounding Indian industry, one interviewee describes: It’s exactly like … ( … ) It’s like being a member of the Willingdon Club. ( … ) And … most of the new people are not members of the Willingdon Club. Even though they have ten times more money. They wouldn’t be allowed. It’s like … England! Exactly like England. Like the gentlemen’s clubs. Money doesn’t matter. It is … being part of the gentry and you know, the old rich. It has its own value systems and … if you see the old world in India today – the old families and the new families – the old families have a certain way of doing things, sticking to tradition.\(^{249}\)

Echoing the sentiments on value systems that the English aristocracy and City elites placed on industrialist wealth in the North, it is evident how formal Anglo-Indian institutional arrangements in Indian industry enabled the transfer of more than merely technology.

Moreover, the club culture was in India accompanied by institutional clubbability – a hybrid of formal and informal networking, existing familial and community-based ties and British value systems and elite constructs amongst Indian society. This preserved clubbability bolstered and transcended formal colonial business institutions and norms.

The interviews demonstrate how clubbability seeped into specific and ‘very important’\(^{250}\) corporate alliances amongst Indian industrial families that go beyond simply the age, size or prestige of the textile houses of Bombay. These networks were community-based, reflected community interests, and dominated trade associations and access to finance in Indian industry. Other than the Millowners’ Association of Bombay, an interviewee describes membership of the two rivalling teams of representation ‘in those olden days’\(^{251}\) – namely the Associated Chambers of Commerce in India (ASSOCHAM) and the Federation of Indian Chambers of Commerce and Industry (FICCI). He explains, ‘FICCI was predominantly Marwari-oriented and ASSOCHAM was what we call the brown Englishmen. We were ( … ) one of the few groups which were in both ( … ) so we kept our hands with both the Marwaris and the Associated Chamber [which] normally had the Tatas, Mahindras, all the brown Englishmen’.\(^{252}\) FICCI was considered ‘more Indian and … [with] different views on how to expand India in the sixties and seventies’.\(^{253}\)

Most crucially, these cultural – and political – divides amongst Indian industrialist groups demonstrate via establishment of banks in the early twentieth century how finance as well as technology, was private and networked in ‘a cosy club.’\(^{254}\). The interviews depict how the Mafatlals ‘got together with’\(^{255}\) United Commercial Bank, set up by Birlas and other Marwari families such as the Bangurs, while the Tatas, Khataus and around five other families were at the helm of the Central Bank of India. This evidence questions the possibility of building upon Cain and Hopkins’ socioeconomic concept and venturing into ideas about industrial competitiveness\(^{256}\) and Kaldorian ideas of capital accumulation. Established

\(^{248}\) ibid. 185.

\(^{249}\) Interviews with Respondents A,B,C and D; Mafatlal Group.

\(^{250}\) ibid.

\(^{251}\) ibid.

\(^{252}\) ibid.

\(^{253}\) ibid.

\(^{254}\) ibid.

\(^{255}\) ibid.

\(^{256}\) S.Mishra (1978) ‘Industrialisation in India’ in *Social Scientist* (6:8) pp.49-64.
networks fostered over time, Chandra argues, have always demarcated accessibility by firms to key resources; these persisting networks are comparable with late eighteenth-century British elite ideals of gentlemanly business conduct and productivity in the midst of a transition from feudalism to industrialization. From such a perspective, the idea of self-governed industrial progress for India might appear hampered by a colonial hangover in institutional formation. This, it can be argued has significant implications for analysing the post-Swadeshi debates of the twentieth century and the optimality of colonial institutional influences in fostering sustainable technology-driven industrial growth.

The culmination of the direct rule in India and the abolition of the zamindari system of landlordism in 1947 did not signify the breaking of formal and informal institutional ties between Indian industry and governing elites. Rather, colonial hybridity bequeathed India a manufacturing structured upon informal networks defined by colonial norms, upon which the license raj prevailed. Though many industrialist families (especially FICCI group) were strong proponents of the independence movement, evolution from British Raj to License Raj was resoundingly unwelcome, citing how ‘India went into a period of lull’ due to advanced bureaucracy and labour relations problems. Existing informal relationships were, ‘one fine morning’, formalized – and not always accurately fitting naturally evolved customs of the British era. The interviews demonstrate that for these larger family companies established in their supporting social institutions and capital networks, licenses did not adversely affect turnover; the power of existing relationships and reputations still rendered licenses ‘tailor-made’. However the nuanced character of business relations necessarily altered. British India certainly created a long-enduring nexus between government and industry, but one interviewee deplores, ‘[back then] then there was some … dignity’ while after License Raj, ‘you have to suck up to [governments] and grease their palm’. Persisting British values of gentlemanly behaviour come to the forefront here, raising questions about the role and legacy of these families in post-License Raj India.

IV

Examining the corporate story of the Mafatlal family in its wider context, the findings show that within the broader context of Indian manufacturing, historically Indian business culture reflects a specific colonial social institution – the British ideals of gentlemanly capitalism. The data reveal how prominent industrialist families, established during the colonial era, have evolved in formal and informal British-inherited ‘club’ networks, exclusive social links, and Anglo-Indian agency to access commercial resources. Though gradually evolving with new technology and the end of the license raj, this type of clubbability and network-driven business conduct persists in various ways. The analysis adds to the conversation about gentlemanly capitalism in the ‘periphery’ in the historiography of imperial history, and offers considerable implications for contemporary research about networks, barriers to entry and accessibility by firms to technology, finance, and skilled labour.

260 Interviews with Respondents A,B,C and D; Mafatlal Group.
261 ibid.
262 ibid.
263 ibid.
The organization of stock exchanges from a property rights perspective: Berlin and London in comparison, c.1860-1914

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Introduction
The last two decades have seen dramatic changes in the constitutional design of most stock exchanges worldwide, usually summarized under the heading of ‘demutualization’. This notion refers to the transformation of exchanges traditionally organized as cooperatives into joint stock corporations, often with their own shares being listed. However, many accounts of recent events often seem to miss the complexity of property rights structures in historical stock exchanges, supposing that prior to a ‘wave of demutualization’ starting in the 1990s most exchanges were organized as cooperatives which largely enjoyed monopoly power. We thus contribute to this discussion by comparing the distribution and evolution of property rights in two of the most important stock exchanges of the pre-1914 world. The paper first stresses the diverging paths taken by both financial exchanges in Berlin and London over the course of the nineteenth century. In order to explain these different developments, the paper then draws on a formal model developed by Hart and Moore in 1996 which identifies heterogeneity in membership and the intensity of competition as two crucial explanatory variables for a stock exchange’s overall organizational design. Our empirical analysis corroborates the theoretical argument, showing that stock exchange membership was indeed much more heterogeneous in Berlin than in London.

The model
Oliver Hart and John Moore (1996) published their model on exchange organization when the demutualization process described above gained momentum. In its essence, the model applies the authors’ general theory of incomplete contracts, developed earlier in a series of seminal papers, to the design of financial exchanges by opposing two ideal organizational forms. In a ‘members’ cooperative’, it is the members who own and control all the exchange’s assets and decisions are taken on a democratic basis, with each member having one vote. ‘Outside ownership’, instead, means that an external investor, whose only interest consists in maximizing his profits, owns the exchange and exerts control. Both these types thus represent the extremes on an organizational continuum running from complete overlap between members and owners on the one hand to strict separation between ownership and membership on the other. In a simple pricing model, the authors then demonstrate that with an increase in heterogeneity among members outside ownership becomes more and more efficient compared to the cooperative form. To that end, it is supposed that exchanges can choose from a set of different investment options, with each project corresponding to the needs of a particular group of members. As a cooperative decides by democratic vote, it can reach the first best solution if, and only if, preferences among members are equally distributed. Then, according to the median voter theorem, the preferences of the median voter, who defines the outcome of the vote, also correspond to the preferences of the average member. An outside owner, instead, will not consider average preferences but rather opt for the investment project that matches the needs of that group of members with the highest willingness to pay. This only constitutes a second best solution. When the distribution of preferences becomes more skewed, however, the relative efficiency of outside ownership steadily increases, because the

\[264\] See Zanotti (2012) on details.
median voter’s preferences more and more deviate from the average. Then a switch in a financial exchange’s organizational structure from the cooperative form to outside ownership can indeed be an efficient response to an increasingly heterogeneous membership. In a second step, the authors also show that the same result holds true when competition between different exchanges becomes more intense.

The evolution and distribution of property rights in Berlin and London

While we can draw on quite detailed knowledge about the evolution of the London Stock Exchange’s organizational structure,265 the Berlin case has rather been neglected by historical research so far. In London, ownership and membership have traditionally been separated. Thus, the ‘Trustees and Managers’ represented the proprietors who owned the shares of the stock exchange company and who were responsible for maintaining the exchange’s facilities, whereas the ‘Committee for General Purposes’ was elected by the members of the exchange and put up the rules and regulations for daily trading. Membership was strictly limited to two main groups: brokers who executed their outside customers’ orders and ‘jobbers’ or ‘dealers’ who were only allowed to trade with brokers and who were supposed to stand ready in order to ‘make a market’ in particular securities. Each of these two groups of members had its particular source of income, with brokers demanding commissions from their customers and jobbers earning the so called ‘spread of the market’ by trying to sell their securities at a higher price than they themselves had bought them. Competition among brokers and jobbers respectively should then prevent any one group from obtaining monopoly power. Proprietors, instead, got an annual dividend on their shares of the exchange. This dividend, in turn, was basically generated by the entrance and subscription fees that each member had to pay.266 This overall structure which assigned property rights to members and owners prevailed throughout the nineteenth century. However, in 1876 an important step towards stronger vertical integration was undertaken. Henceforth, only members were able to become shareholders of the stock exchange and, at the same time, each member should at least hold one share. As the passing over of shares in practice made only little progress, due to very restricted turn-over, regulations were again tightened in 1905.267

In Berlin, it was the merchants’ corporation (Korporation der Kaufmannschaft), the central representation of the city’s commercial elite founded in 1820, who traditionally owned the stock exchange building and who was in charge of its financial administration. At the same time, though there existed a formal surveillance by the Prussian State, the merchants’ corporation whose members mainly used the stock exchange’s facilities also supervised daily business. Consequently, ownership of the exchange and self-government of traders were clearly integrated in the beginning. Nevertheless, the Berlin exchange was more or less open to the public. Every merchant, whether he was a member of the corporation or not, could thus enter the stock exchange building and carry out his business there – as long as he paid for an entrance ticket.268 But perhaps the most outstanding difference to the London Stock Exchange

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266 Since 1854 every member paid a one-time entrance fee as well as an annual subscription. Both fees were increased several times during the second half of the century; between 1870 and 1901, entrance fees rose from £50 to £500 and annual subscriptions from £10 to £40. Though annual dividends could somewhat vary, this development, together with the steady increase in membership, allowed proprietors to gain considerable dividends, which lay between £3 and £6 per £12 share throughout the 1880s and 1890s. See Kynaston (1983), pp. 50-1, 72-3. Hence, it becomes clear that the London Stock Exchange was a for-profit enterprise which contradicts the idea of Pirrong (2000) that, historically, stock exchanges were only not-for-profit organizations.
267 The complete abolition of ‘dual control’, however, would only be reached after the Second World War.
268 Contrary to the London Stock Exchange, the Berlin merchants’ corporation levied entrance fees in a way that, in sum, they matched expenses. Thus, the Berlin stock exchange was rather a not-for-profit undertaking. However, the remaining profit-and-loss-accounts also show that operating the stock exchange allowed for generating considerable income, as users of the exchange’s facilities not only had to pay for entrance, but also for additional services like telegraphic messages.
was the fact that commercial banks were allowed to directly use the exchange’s facilities. They were, indeed, the most important players in the Berlin stock market, not only channelling their customers’ orders into the market, but also carrying out dealings on their own behalf. The issuance of new securities was regularly provided by Berlin’s biggest banks, like the Deutsche Bank. With the passing of the Stock Exchange Act in 1896 state authority began to strengthen, as the law installed official representatives at each German exchange. When in 1902 the Prussian Ministry of Commerce founded a new chamber of commerce, it also delegated the supervision of the stock exchange to this new organization. The Berlin merchants’ corporation, however, continued to own the buildings. This meant the separation of ownership, administration and membership in Berlin, when in London one tried to overcome this phenomenon.

**Empirical evidence on membership structures**

Following the Hart and Moore model, a crucial explanation for these diverging paths taken by both exchanges can be found in their respective membership structures.269 Again, the London story is already well known. Though both groups did overlap, there was always a large portion of members who did not possess any shares of the stock exchange (figure 1). When in 1876 the Deed of Settlement was altered, the number of proprietors nearly doubled from 268 to 502. However, there were already more than 2,000 members at that time. Members and owners only began to converge, when membership was restricted more seriously after 1905. Thus, in 1913 almost half of 4,855 members were also proprietors of the exchange (2,366). Membership structure itself, however, did not change significantly. Though it seems that after the turn of the century jobbers were in a slight majority, whereas brokers had dominated in number until then, the ratio between both groups was rather balanced. But what is more, there was no fundamental conflict of interest among members themselves, but rather between existing and potential future members. So, members always agitated for limiting membership, as they feared that their number might increase faster than the overall trading volume. Proprietors, instead, were keen on raising membership figures in order to make their income rise.

![Figure 1: Members and Proprietors of the London Stock Exchange, 1870-1913](Image)

*Sources:* Kynaston (1983); Michie (1999); Guildhall Library, MS 19297.

269 In the full version of the paper we will also discuss the competitive environment of both stock exchanges in detail.
The picture is different for Berlin. As the Berlin stock exchange was not organized, contrary to London, as a private club but as a semi-public establishment, we should refer to its visitors as ‘users’ or ‘customers’ rather than ‘members’. Within this group of users we can then observe a first fundamental conflict of interest which opposed those users who were members of the merchants’ corporation and those who were not. In addition, however, a second clash of interests occurred among the members of the corporation itself, because only a fraction of them was also engaged in stock exchange business. Of course, members of the corporation who did not use the exchange did not want to pay for it, but, initially, the exchange was only financed by the contributions of the merchants’ corporation. An important change occurred in 1866, when a fundamentally revised version of the rules and regulations of the Berlin stock exchange came into force. From then on, all visitors to the exchange, whether members or not, were charged the same fees. While this regulation mitigated the conflict within the corporation, at least temporarily, it aggravated the conflict between users of the stock exchange that were members and those that were not. Now, non-members who were using the exchange had to pay the same price, but did not have any voting rights, as the supervisory committee of the stock exchange, until 1903, could only be elected by members of the corporation.

When we look at the numbers of the visitors to the Berlin stock exchange in more detail, we can observe a twofold development (figure 2). On the one hand, an increasing number of members of the corporation did not use the stock exchange at all. On the other hand, we can observe that increasingly more non-members became users of the exchange. In particular, the overall rise in visitors to the exchange throughout the 1870s and 1880s was mainly caused by more and more merchants coming to the exchange without being a member of the corporation. This, in turn, means that both conflicts of interest described above were aggravated over time.

**Figure 2: Visitors to the Berlin stock exchange, 1860-1913**

*Sources: Biggeleben (2006); Festschrift (1920); Börsen-Enquete-Kommission (1893); Berliner Jahrbuch für Handel und Industrie; Correspondenz der Aeltesten; LA Berlin, A Rep. 200-01, Nr. 433, 601, 948, 1002, 1158, 1218.*

270 The exact numbers of daily visitors to the exchange have never been registered. Fig. 2 depicts the numbers of entrance tickets sold in Berlin and should be interpreted as a minimum level. Note that numbers include visitors to the commodity exchange, as in Berlin trading in commodities and in securities took place within the same building. An inquiry commission on German stock markets set up at the beginning of the 1890s estimated that about one third of all visitors to Berlin went to the commodity exchange. Few remaining data that differentiate between visitors to both exchanges, in fact, confirm this estimate.
Moreover, taking a closer look on the composition of stock exchange users in Berlin we see not only members and non-members of the corporation oppose each other, but also different professional groups increasingly getting in conflict. It was namely complaints about the big commercial banks monopolizing securities trading in their hands which were augmenting. As a consequence, for example, smaller banks and brokers founded their own interest group, the ‘association for the interests of the stock exchange’ (Verein für die Interessen der Fondsbörse). The bigger banks, instead, gathered in their own interest group, the so called Stempelvereinigung. Therefore, what clearly distinguishes the Berlin situation from its London counterpart is the confrontation of different parties, within the exchange, whose interests ran counter to each other.

Results and outlook
The empirical analysis shows that members of the London Stock Exchange remained a more or less homogenous group, whereas users of the Berlin exchange became increasingly heterogeneous. Therefore, the Hart and Moore model provides a convenient narrative that can explain a large part of the institutional evolution of both exchanges. The separation of ownership and ‘membership’ in Berlin as well as London’s move towards closer vertical integration can thus be interpreted as an efficient institutional response to very different membership structures. Nevertheless, the distribution of property rights in historical stock exchanges is a much more complex issue. Further research should particularly have a much closer look on the microstructures of continental stock exchanges, as the literature is still very much focused on the Anglo-Saxon experience.271 The Berlin stock exchange, due to its rather public character, for example, did not establish property rights in prices for its users, as it was typical for US-American exchanges in the nineteenth-century.272

Sources
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271 Important work in that respect has recently been done by Riva (2007) and Hautcoeur/Riva (2012).
British reserve? U.K. and German investments in sovereign debt, 1870-1913

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This paper investigates the geographical distribution of British and German capital investments made abroad during the first global finance period 1870-1913. Given markedly different patterns of foreign investments, were German or British foreign allocations across different geographic regions optimal from the point of view of a rational investor? By employing modern portfolio theory, and making use of a new monthly database of bonds traded on the London and Berlin markets, this paper takes into account returns, risks and diversification opportunities of securities, making it possible to point out the structure of the optimal portfolio, i.e. how an investor should allocate his wealth among different regions. To determine which market allocated closest to the recommendations obtained from this portfolio analysis the optimal portfolio is computed which is then compared with estimates of actual British and German portfolios. It is demonstrated that while both British and German investment patterns can be interpreted as revealing a bias towards certain world regions, they can also be taken as evidence of rational behaviour.

Capital exports during the first globalization

The period between 1870 and the First World War was an era of global finance where capital was flowing without restrictions. Who were the creditors of the time and where were they placing the capital? As Feis (1930) put it, Europe was the ‘world’s banker’, with Britain at the epicentre of the capital markets, followed by France and Germany which also made massive foreign investments (Obstfeld & Taylor, 2003). These creditor countries directed their capital into similar portfolios, investing for example in railways, public utilities, other sectors and especially government bonds, but the destinations of investments were geographically very different (Woodruff, 1966; Clemens & Williamson, 2003).

Table 1 reveals the distinct pattern of overseas investments made by Britain and Germany on the eve of the First World War.273 British investors show a marked preference for North America, where they placed 35.3 per cent of their foreign investments, while their allocation towards Europe, 5.3 per cent of the total, remains marginal. In contrast German investors held the largest share of their investments – 44 per cent – in European securities and completely ignored Oceania, where Britain committed 11 per cent of their overseas investments.

Table 1: Geographical distribution of foreign investments in 1914 (%)

<table>
<thead>
<tr>
<th>Region</th>
<th>Britain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>5.3</td>
<td>44</td>
</tr>
<tr>
<td>Oceania</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Africa</td>
<td>12.3</td>
<td>8.6</td>
</tr>
<tr>
<td>Asia</td>
<td>17.8</td>
<td>12.1</td>
</tr>
<tr>
<td>North America</td>
<td>35.3</td>
<td>19.8</td>
</tr>
<tr>
<td>Latin America</td>
<td>18.5</td>
<td>15.5</td>
</tr>
</tbody>
</table>

Source: Woodruff (1966)

There are few studies concerned with understanding the geographical distribution of foreign investments and most of them focus on British foreign investments. In part, this is

273 France’s pattern of foreign investments resembles closely Germany’s orientation (Feis, 1930).
because the London capital market was the largest and most liquid market before the First World War and another reason is data availability. Thanks to Stone’s (1999) detailed database on quantities of British capital exports, Clemens & Williamson (2004) investigate the determinants of the geographic distribution of foreign investments made by the U.K. during the period 1870-1913. They first find that the British capital market exhibited a wealth bias – countries with higher GDP per capita received a significantly larger share of British international investments than did poorer countries. Secondly, they provide an explanation of this, concluding that ‘British foreign investment went where it was most profitable – chasing natural resources, educated populations, migrants, and young, urban populations’.

Kennedy (1974) questioned the optimality of British stock market allocations, claiming that the market allocated too much into safe investments (low variance returns). He attributes this to the ‘strong preference for risk avoidance’ of the British investors. Ferguson & Schularick (2006) take up again the discussion on the risk aversion of British financial investors and provide some illustrative insights that they did not place voluminous bets on risky governments and preferred the low risk segment of the market. Furthermore, they argue that given this preference, investing in the Empire seems obvious.

The characteristics of German capital flows pre-WWI are less well explored (Daudin et al., 2010). Thus, a lot of effort has been channelled recently into collecting information on the amounts and direction of capital exports made by Germany. For example, Bersch & Kaminsky (2008) and Esteves (2008) developed new datasets for the period 1883-1913 and show that Germans specialized in lending to European countries. Furthermore, many side with the idea that the geographical distribution of German investments followed political and diplomatic considerations, instead of being driven by economic factors (Feis, 1930). The present work studies the geographical orientation of foreign investments not by concentrating on the ‘pull effects’ (the variables that pulled British/German capital into some countries versus others) but by looking through the lens of portfolio choice. Thus, this paper will take the perspective of an investor who decides on his wealth allocation based on expected returns, risks, and diversification opportunities.

Did the London capital market allow a better allocation of foreign investment than the German one? Were the British exports towards North America excessive? Did Germans invest too heavily in financing their European neighbours? To answer such questions modern portfolio theory is employed, allowing for the investigation of whether the British (and then the German) allocation to different regions was too much than would be justified in a rational decision-making framework.

Modern portfolio theory has been applied previously in other studies focusing on Great Britain during pre-WWI (Goetzmann & Ukhov, 2006 and Chabot & Kurz, 2010) and France (Edlinger et al., 2013). However, their main question was concerned with why so much British domestic savings were channelled towards foreign destinations instead of domestic industries, whereas this study is the first that tries to understand the allocation of foreign investments across the different regions. Furthermore, this is done in a comparative perspective with Germany.

**The framework of portfolio selection and the mean variance approach**

Modern portfolio theory uses portfolio and risk-return analysis and assumes the existence of a rational investor, who only cares about expected returns and their variances. The investor favours higher return means and smaller variances. Minimum variance (efficient) portfolios are portfolios that have the smallest variance for every level of expected returns.

Assuming there are $N$ risky assets to invest in, the investor will construct his portfolio

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274 Stone’s (1999) data on gross British capital exports is broken down by year, destination and by sector.
275 This is in line with Clemens & Williamson (2003) finding that the country risk mattered for the amount of capital countries attracted.
276 See also the unpublished work of Esteves (2008) who disagrees on this point.
by choosing the weights for the risky securities, \( \mathbf{w} = (w_1, w_2, \ldots, w_N)' \) such that the portfolio variance is minimized, i.e.

\[
\begin{align*}
\text{minimize} & \quad \mathbf{w}' \mathbf{\Sigma} \mathbf{w} \\
\text{subject to} & \quad \mathbf{w}' \mathbf{1} = 1 \\
& \quad w_i \geq 0 \quad \text{for } i = 1, 2, \ldots, N
\end{align*}
\]

Where \( \mu \) is the vector of expected returns on the \( N \) assets and \( \bar{x} \) is the required return. The second constraint imposes that the weights sum to one.

The opportunity set of available assets together with the efficient portfolios are illustrated in a mean – standard deviation diagram, where the x-axis is the standard deviation and the y-axis shows the mean return. The set of efficient portfolios form the minimum variance frontier. When a risk free asset is available the diagram includes a straight line, the Capital Allocation Line (CAL), which intersects the y-axis at the risk free rate and is tangent to the minimum variance frontier. The tangency point represents the tangent portfolio, which is also known as the market portfolio. The market portfolio and all the portfolios on the CAL, have the highest attainable Sharpe ratio. These are all optimal portfolios and the investor will select his portfolio depending on his risk aversion.

In the present setting, it is assumed that an investor will decide on how he allocates his wealth based on the past returns of assets over the gold standard period. The risk free asset is considered to be the 2.5 per cent British consol. The portfolio weight of each asset will be positive since I assume short selling constraints. Short selling is not allowed because the analysis involves regional indices and not stocks. What is henceforth termed the optimal portfolio is the one with the highest Sharpe ratio, the market portfolio.

Data

The first analysis is performed using total return series from the London market for 1870-1913. Since the focus of this paper is on the geographic allocation, the data used in uncovering the optimal portfolio on the Eve of the First World War consists of annual returns indices for six overseas regions. Each region has an equity index and a bond index. The regional equity indices are provided by Grossman (2014) who employs a wealthy underlying data of stocks. The bond indices are own calculations using government bonds\(^{277}\) from the Investor’s Monthly Manual.

The data used in this analysis is representative of the opportunity set available to British investors in terms of securities composition as it includes both stocks and bonds. However it is limited to annual returns (thus making analyses over shorter sub-periods difficult), and does not include several assets (particularly from Eastern Europe) which were traded on the Berlin market.

Given these limitations a new dataset is constructed that contains monthly returns of 737 government bonds from 71 countries trading in London or in Berlin during 1870-1913. The London price data draws on Investor’s Monthly Manual\(^{278}\) whereas the data for securities traded on the Berlin stock exchange was personally collected and hand entered from the newspaper, \textit{Berliner Börsen-Zeitung}.\(^{279}\) All available government bond series for each country were collected, and monthly realized returns were calculated.\(^{280}\)

277 The indices consist of unweighted averages of selected government bonds from the respective regions.

278 The dataset for London traded securities was kindly provided by the International Center for Finance at Yale University.

279 I put together the Berlin dataset thanks to the generous grant obtained from the Economic History Association.

280 Since this database was completed, scans of the \textit{Berliner Börsen-Zeitung} have been made available online by the Berlin State Library.
Berlin versus London: optimal portfolios

The new dataset comprising both London and Berlin traded securities has one drawback, in that it consists only of government bonds and excludes equities. However, foreign government bonds were by far the most popular foreign investments among British and German investors. In the case of Britain, roughly half of all capital exports were placed in foreign government securities (Chaboz & Kurz, 2010), and only 8 per cent of foreign securities floated in Germany were equity (Bersch & Kaminsky, 2008). Nevertheless, a comparison of the optimal portfolio for all assets in Britain compared to the new database of German and U.K. bonds reveals little difference.

Figure 1 illustrates the aforementioned mean – standard deviation diagram from the mean-variance analysis for the annual returns of equity and bonds traded in London for the period 1870-1913, which gives the optimal portfolio weights given in table 2, which is compared to that found using the monthly database of returns on bonds only, but including the German returns.

Figure 1: Mean-variance diagram
According to the analysis of the data from both databases, little should be invested in Europe compared to outside the continent: this counts against the ‘optimality’ of German investment patterns. Neither, however, does investing in Latin America appear optimal, counting against the optimality of British investment patterns.

Despite its limitation (the lack of data on equities), the new monthly database allows a more fine-grained look at the optimality of British and German investments by region. Thus, tables 3 and 4 compare actual allocation weights for the U.K. by decade, as well as for the whole period. German allocations are given for the period 1883-97, which is the only sub-period available. The addition of the German data allows investment patterns in Europe to be divided into South & South Eastern and North & Central Europe, since previous work has suggested a German bias towards investments in Eastern Europe in particular.
continuous bias against European assets, no matter what the optimal strategy was, as well as a bias towards Oceania and Latin America.

Turning to the German allocation, the bias towards European securities is again apparent, although it should be noted that in the sub-period but for which there is data on actual allocations (columns 6 and 7), investing in both regions of Europe was relatively optimal. Indeed, German lending was heavily biased towards Eastern Europe in the 1880s at a time when this was indeed relatively optimal, something which is not apparent from looking at the entire period.

Conclusion

The calculation of optimal portfolios of sovereign bonds combining data from both the German and British markets leads to a more nuanced picture of the optimality of the respective lending patterns. British investors appear to have responded fairly well to market signals, and although they also displayed a bias towards certain locations, they do not appear more ‘reserved’ in their investment patterns than the Germans, who displayed a bias towards European assets. A natural extension to this work would be to include data on equities on the Berlin market, and to add Paris to create a more representative ‘universe’ of investment possibilities. This paper nevertheless points towards the importance of including assets not traded on the London market, and using more frequent data so that sub-period may be investigated.

References

Raising capital: Laws, statutes and practices in German corporations, 1870-1930

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1. Does investor protection matter?

The classical agency perspective assumes that corporations are faced with a conflict between shareholders and managers, given that ownership is separated from control. Shareholders are interested in profit maximization, whereas managerial opportunism can present itself in many ways. How can outside investors ensure that they will secure a return on their capital? This question is central to corporate governance. Literature on ‘Law and Finance’ suggests that law could provide a good institutional environment, whereby outside investors are willing to finance firms. A strong investor protection is linked to lower private benefits of control, a dispersed ownership structure and more developed financial markets. By contrast, poor legal protection causes ownership concentration (La Porta et al. 1998). There is not much support for this causation under economic and legal historians. For Great Britain, it has been shown that dispersion of ownership was prevalent in many corporations around 1900, although the British government only enacted new laws strengthening shareholders’ rights in the second half of the century (Franks et al. 2009). Compared with Great Britain, formal investor protection was stronger in Germany, but using LLSV financial measures it was still under modern standards. Although many firms had high rates of ownership concentration, German security markets functioned well at the beginning of the twentieth century (Burhop et al. 2015).

These findings have challenged the extent to which regulation is important for the economic outcome. However, in the historical debate, we still know very little about how legal rules concerning shareholders’ rights were implemented by corporations and what effect they had on the behaviour of market participants. This paper provides a micro perspective of the German corporate governance system by analysing the impact of investor protection at the firm level from 1870-1930. For this purpose, I focus on equity finance. I argue that regulation at the end of the nineteenth century was indeed important for both corporations as well as investors as the government created common governance mechanisms and simultaneously strengthened shareholder rights. Furthermore, private contracts became crucial for solving principal agent problems, as market participants had a significant scope of action. They could change the vertical power relations and restrict shareholders’ rights. Nevertheless, informal mechanisms played an important role when it came to the decision to issue new shares.

The first section of this paper outlines the development of investor protection around 1900, before section 2 shows how corporations implemented such rules in their charters. Accordingly, I collected information on decision making, shareholders cash-flow and control rights for two German large banks (Deutsche Bank and Berliner Handels-Gesellschaft). Finally, based upon one example, section 3 demonstrates the extent to which legal rules had an impact on the praxis. I reconstruct how the Deutsche Bank raised its capital by issuing new shares in 1914 and what objectives the involved parties were pursuing.

2. Investor protection around 1900

‘Law and Finance’ measures used by La Porta et al. show that investor protection was weak in many Western European countries around 1900. In Germany, the anti-director rights index had a score of 1 out of 6, referring to the right to call an Extraordinary General Meeting by at least 10 shareholders introduced with the Common Commercial Code in 1861. Indices of private and public enforcement remained low at the beginning of the century. (Franks et al.
2006). This paper shares the view of legal experts that the LLSV index is not robust measuring investor protection, especially around 1900. The history of companies’ legislation in Germany demonstrates that basic rights encouraging minority shareholders were introduced at the end of the nineteenth century, whereby investor protection was far advanced compared with other countries but evidently below modern standards.

In Germany, prior to 1870 incorporations and capital increases had to be officially approved by the government. The first Companies Act of 1870 removed the concession system and made a two-tier board structure including management and supervisory board compulsory. A decisive step in investor protection was the second Companies Act legislation in 1884 following the ‘Founders’ Scam’ crash in 1873. First, the new legislation clarified the decision making process, whereby the management’s responsibilities included administrative activities, whereas the supervisory board was strengthened as a controlling body. Shareholders explicitly gained the power to vote for major actions at the general meeting such as capital changes, the dismissal of supervisory board members, changes of articles of charters and mergers. For such actions, a majority of 75 per cent of voting rights was needed. Each share should grant the right to vote, whereby small shareholders could not be excluded from attending the general meeting. Besides, they did not have to appear in person, as proxy voting was allowed. A change in voting rights came with the new commercial code in 1897. From then onwards, companies could have different classes of shares with different voting rights, which might have a negative effect on the capital structure. Regarding cash-flow rights, since 1870 investors could claim a dividend and they had the right to vote on profit distribution. Moreover, pre-emptive rights introduced in 1897 were also potentially important. When issuing new shares, corporations had to choose to give existing shareholders the opportunity to purchase new shares before they were offered to the public. The legislation of 1884 also considered the first legal mechanisms against oppression by those controlling the corporation. The regulation of disclosure was quite relaxed. After 1870, management had to publish a balance sheet and, from 1896, a prospectus. Overall, most of these rules were optional and they could be changed by the contractual parties within the charters.

3. Private enforcement of investor protection

The charter of a corporation was created at the beginning by its founders and could only be changed through voting at the general meeting. The first charter of the Deutsche Bank granted the supervisory board significant power in 1870, whereby members were mainly its first shareholders and founders. The management was committed to instructions of the supervisory board. Furthermore, the general meeting was not allowed to vote on capital changes, since this was part of the supervisory board’s competences. Its members could also determine the price for new shares. Besides, a small group of the first shareholders ensure that in case of a capital increase they could buy new shares before offering to the public. The general meeting could vote on modification of the charter. A majority of 67 per cent of votes was needed, as well as approval from the state. Small shareholders were excluded from voting. The regulation of cash-flow rights was in favour of investors, who received a guaranteed dividend of 5 per cent and an extra dividend.

Many articles of the first charter were modified in 1881, 1889, 1899 and 1823. They restricted some competences of the supervisory board and gave more power to management and general meeting. Since the charter of 1881, the supervisory was not explicitly responsible for capital increase. Financing decisions had to be approved at the end of the process by the general meeting. A majority of 67 per cent of votes – subsequently 50 per cent from 1899 – was required. Since 1923, all major actions could only be approved by 75 per cent of votes. In 1889, the management was no longer committed to instructions of the supervisory board. Instead, the supervisory board had the opportunity to issue rules of order and specify for which business transactions and bank loans he must agree. This was a way to strengthen the supervisory board as a controlling body. Nevertheless, in terms of issuing new equity, the
supervisory board still had the power to determine the share price, which was a major issue. For small shareholders, the charters following 1870 included two important modifications: they abolished special rights for a small group of shareholders and, from 1889, the one share-one vote rule was implemented. It is striking that important reforms were made between 1881 and 1899.

Compared the Deutsche Bank, the BHG – which was a partnership limited by shares – authorized the management to govern on its own responsibility. The supervisory board’s main task was to control management’s decisions. Its members had to agree on capital increase, the price for new shares and dividends. Since the 1880s, the right to veto was not specified within the charter, although the supervisory board could instead issue rules of order. The first charter of the BHG was hostile to small investors. The general meeting was only allowed to vote on decisions on new equity for amounts from 30 million. For general changes of the charter, a majority of 50 per cent and management’s approval was obligatory. Shareholders needed twenty shares to cast a vote at the general meeting. The charter of 1884 relaxed this restriction, but one share-one vote was introduced only in 1925. Since the 1880s, the charter finally guaranteed a minimum dividend of 4 per cent and an option for an extra dividend.

Table 1: Vertical power relations

<table>
<thead>
<tr>
<th></th>
<th>Deutsche Bank (1870)</th>
<th>Change to</th>
<th>BHG (1856)</th>
<th>Change to</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Management</strong></td>
<td>Committed to charter and instructions of supervisory board</td>
<td>Commit</td>
<td>On one’s own responsibility</td>
<td>Commit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to charter and rules of order issued by the supervisory board (1889)</td>
<td></td>
<td>rules of order issued by the supervisory board (1880-90)</td>
</tr>
<tr>
<td><strong>Supervisory Board</strong></td>
<td>Decision on capital increase and share price</td>
<td>Decision on share price (1881)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Competences besides controlling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Right to veto</strong></td>
<td>Business transactions and bank credits specified within rules of order (1889)</td>
<td>Capital increase</td>
<td></td>
<td>Not specified</td>
</tr>
<tr>
<td></td>
<td>Share price Dividend If disagreement within management</td>
<td></td>
<td>(1880-90)</td>
<td></td>
</tr>
<tr>
<td><strong>General meeting</strong></td>
<td></td>
<td></td>
<td>Decision on share price (1884)</td>
<td></td>
</tr>
</tbody>
</table>

*Source: own calculations, charters of the Deutsche Bank and BHG*
### Table 2: Voting rights and cash-flow rights

<table>
<thead>
<tr>
<th>Voting Rights</th>
<th>Deutsche Bank</th>
<th>Change to</th>
<th>BHG</th>
<th>Change to</th>
</tr>
</thead>
<tbody>
<tr>
<td>One share-one vote</td>
<td>No</td>
<td>Yes (1889)</td>
<td>No</td>
<td>Yes (1925)</td>
</tr>
<tr>
<td>Requirements of votes for major actions (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital increase</td>
<td>No</td>
<td>67 (1881)</td>
<td>&gt; 30m 50 + Management approval</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 (1899)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>75 (1923)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change of charter</td>
<td>No</td>
<td>67 (1881)</td>
<td>50 + Management approval</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>75 (1923)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>67 + State approval</td>
<td>67 (1881)</td>
<td>75 (1880-1890)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 + Management approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>75 (1880-1890)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(+ Management approval 1928)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash-flow rights</td>
<td>4-6 (1870-1930)</td>
<td>No</td>
<td>4 (1880-1890)</td>
<td></td>
</tr>
<tr>
<td>Guaranteed minimum dividend (%)</td>
<td>Yes</td>
<td>No</td>
<td>Yes (1880-1890)</td>
<td></td>
</tr>
<tr>
<td>Extra dividend</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: Own calculations, charters of the Deutsche Bank and BHG*

### 4. Issuing new equity: case study of Deutsche Bank

The Deutsche Bank was set up in 1870 as a bank for foreign commerce, becoming one of the prominent financial institutions in Germany. Between 1870 and 1930, the bank raised its capital fifteen times. In 1914, the Deutsche Bank planned to raise the capital by 25 per cent to 250 million Mark with the purpose of taking over the Bergisch-Märkische Bank, a regional bank located in Wuppertal. The main motive for the merger was to expand and strengthen competitiveness. The Bergisch-Märkische Bank was influential within the Rheinland-Westfalen region and was well connected with the industry there. As the involved parties made the decision to merge, their task was subsequently to select a suitable structure for the transaction. The management decided to form a syndicate of underwriters who would buy the entire issue and reoffer it to investors. The underwriters were committed to buy Deutsche Bank shares worth 50 million Mark. The Bergisch-Märkische Bank had a share capital of 80 million Mark and 40 per cent of it was owned by the Deutsche Bank. Thus, the Deutsche Bank sold these shares of 32 million Mark to the syndicate. The remaining shareholders of the Bergisch-Märkische Bank had the opportunity to change their shares into Deutsche Bank shares at a ratio of 8:5 and received 30 million Mark in stock. The rest of the 20 million Mark within the syndicate was offered to the existing Deutsche Bank shareholders.

What were the advantages of this procedure? It was favourable to the Deutsche Bank, because the underwriters provided the company with capital and they took the risk that the transaction might be unsuccessful. Besides, the Deutsche Bank made sure that the general meeting of both companies would approve the takeover. The Deutsche Bank held shares of the Bergisch-Märkische Bank, but it was not allowed to vote at the general meeting, since the bank was part of the merger process. After the Deutsche Bank had sold these shares, the syndicate of underwriters became the new owner and could vote in favour of the transaction. The syndicate of underwriters was led by a group of 11 banks, which held 15 per cent of the issue. The first five banks in table 3 had worked with the Deutsche Bank before and had considerable experience in this kind of business. The Deutsche Bank owned shares in 8 of the banks (table 3) and had a significant interest in strengthening business connections with them.
The general meeting of the Deutsche Bank was held some days after the shareholders of the selling company had agreed with the merger. From the beginning, it was clear that a majority of 50 per cent would vote in favour of the takeover. 135 shareholders representing 21.6 per cent of total equity attended the general meeting. Before 1900, the Deutsche Bank stock was widely held, but during the first half of the twentieth century, and especially in 1914, concentration of ownership increased. The largest shareholder was the Bergisch-Märkische Bank, which owed 14.7 per cent of issue attending the general meeting. The three largest shareholders exercised 29 per cent of all votes and the five largest shareholders exercised 41.7 per cent. The leading banks of the syndicate of underwriters controlled 21.7 per cent and the largest shareholders of the syndicate controlled 58.4 per cent. On the whole, 83 per cent of equity at the general meeting was owned by banks. Separation of ownership and control was modest, since all directors combined controlled 17.9 per cent.

Was the transaction favourable to investors? Shareholders of the Bergisch-Märkische Bank had the opportunity to change their shares into new Deutsche Bank shares, which reached a share price of 259 per cent. Additionally, the Deutsche Bank committed to pay out dividends for the previous year. Shareholders of the Deutsche Bank, on the other side, had pre-emptive rights. They had the option to acquire new shares issued by the company below market value. Assuming that all issued shares are taken by the existing shareholders, the Theoretical ex-rights price has been 7 Mark. That implies that shareholders of the Deutsche Bank would make a profit. Furthermore, 9 of the 11 leading banks within the syndicate were shareholders of the Deutsche Bank. This group was involved in the transaction process and private benefits of control were low.

Table 3: Leading banks, syndicate of underwriters

<table>
<thead>
<tr>
<th>Underwriter</th>
<th>Share capital (% of 7.4 million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rheinische Creditbank</td>
<td>13.51</td>
</tr>
<tr>
<td>Essener Credit-Anstalt</td>
<td>16.22</td>
</tr>
<tr>
<td>Hannoversche Bank</td>
<td>8.11</td>
</tr>
<tr>
<td>Lazard Speyer-Ellissen</td>
<td>6.76</td>
</tr>
<tr>
<td>Jacob S.H. Stern</td>
<td>6.76</td>
</tr>
<tr>
<td>Mecklenburgische Hypotheken- und Wechselbank</td>
<td>4.05</td>
</tr>
<tr>
<td>Pfälzische Bank</td>
<td>5.41</td>
</tr>
<tr>
<td>Deutsche Vereinsbank</td>
<td>5.41</td>
</tr>
<tr>
<td>Schweizerische Kreditanstalt</td>
<td>8.11</td>
</tr>
<tr>
<td>Württembergische Vereinsbank</td>
<td>5.41</td>
</tr>
<tr>
<td>Schlesischer Bankverein</td>
<td>20.27</td>
</tr>
</tbody>
</table>
Table 4: Ownership concentration and control, general meeting of the Deutsche Bank, 1914

<table>
<thead>
<tr>
<th>Shareholder</th>
<th>Share capital (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>14.7</td>
</tr>
<tr>
<td>Bergisch-Märkische Bank</td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>29.0</td>
</tr>
<tr>
<td>Bergisch-Märkische Bank</td>
<td></td>
</tr>
<tr>
<td>Jacquier &amp; Securius</td>
<td></td>
</tr>
<tr>
<td>Wilhelm Kuczynski</td>
<td></td>
</tr>
<tr>
<td>C5</td>
<td>41.7</td>
</tr>
<tr>
<td>Bergisch-Märkische Bank</td>
<td></td>
</tr>
<tr>
<td>Jacquier &amp; Securius</td>
<td></td>
</tr>
<tr>
<td>Wilhelm Kuczynski</td>
<td></td>
</tr>
<tr>
<td>E.J. Meyer</td>
<td></td>
</tr>
<tr>
<td>E. Wassermann</td>
<td></td>
</tr>
<tr>
<td>Directors</td>
<td>17.9</td>
</tr>
<tr>
<td>Leading banks of the syndicate</td>
<td>21.6</td>
</tr>
<tr>
<td>Large shareholders of the syndicate</td>
<td>58.4</td>
</tr>
</tbody>
</table>

5. Conclusion
During the second half of the nineteenth century, German companies’ legislation created common mechanisms for governing corporations and introduced basic shareholders rights. The law offered more favourable conditions for small investors; nevertheless most of the rules were not mandatory. Corporations could change the vertical power relations and restrict shareholders rights. By examining the charters of two large German banks I show that most reforms were made according to the new legislation in the period 1880-90. In both cases shareholders rights were improved. While legislation and private contracts were incomplete, shareholders depended on whether corporate insiders or financial intermediaries were acting on their behalf. Alternative institutional mechanisms – syndicate of underwriters – became crucial for corporations as well as investors. This paper offers the first micro-perspective of how German corporations make finance decisions and contributes to the historical debate of corporate governance.

References
An inquiry on determinants of risk: the French money market, 1880-1914

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Supervisor: Professor Pierre-Cyrille Hautcoeur

The recent financial crisis shed light on the cardinal role played by the money market, in the good times as well as in the bad, in providing capital to financial investors. In normal times, this sector is crucial for the markets to get the liquidity they need to operate efficiently. When money holders face panic, they interrupt providing funds to the financial market, provoking freezes and possibly widespread crises.

My paper aims at studying the relationship between the money and financial markets in a long-run historical perspective. In particular, I concentrate on the French reports market between 1880 and 1914. The two main categories of actors in this market were short-term capital lenders on one side, and borrowers who used this money to operate in the financial market on the other side. As a consequence, the price of each report contract depended not only on the general conditions of the money market, but also on the specific features of the securities provided as collateral for each negotiation. The result was a significant dispersion of the rates (representing prices) around the money market reference rate.

This paper studies through a theoretical model, an empirical analysis, and strong archival bases, the determinants of the dispersion of the rates in the reports market. This is done in order to understand the role of different micro and macroeconomic variables in the functioning of this delicate and fundamental keystone of the French financial market of the time.

The main sources used are the official lists of Paris official Stock Exchange, which published prices for all the markets analysed (spot, forward, reports). Prices on reports market were done every fifteen days for the most part of securities and once a month for the safest ones. I therefore decided to perform my quantitative analysis on a monthly basis in order to have a homogeneous dataset, containing all possible sources of variability. Other fundamental sources used are Paris Stock Exchange Yearbooks, containing information about securities and their issuers, and the minutes of Paris Stock Exchange governing body.

I find that not only prices on financial and money markets played a role, but that the specific microstructures of the French official Stock Exchange and of the reports market, as well as corporate finance variables, contribute in explaining the dynamics at work.

The long-term perspective of the paper provides an enlightening insight on the links between the real economy and financial markets and the shocks they may face, with a strong accent on the determinants of risk.

This paper is a fundamental part of my PhD thesis. Future articles will focus on specific moments of French financial history, studying particular cases in which the transmission of liquidity between money and financial markets faced difficulties.
The causes of the Austrian Crisis of 1931

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(f.macher@lse.ac.uk)
Supervisors: Professor Max-Stephan Schulze & Dr Tamás Vonyó

The debacle of Austria’s largest bank, the Credit-Anstalt was a global turning point in the Great Depression. In the months following the announcement of the bank’s losses in May 1931, besides Austria, several other countries in Central Europe and beyond experienced financial distress. These events proved to be a watershed that turned what was previously a global recession into a prolonged depression (Eichengreen 1992).

The historiography holds that the vulnerability of the Credit-Anstalt was the result of three factors. First, the bank’s ambition to hold on to its ‘Konzern’, i.e. its close industrial connections, and hence maintain its universal bank character (Teichova and Cottrell 1983, Schubert 1991, Stiefel 2008, Weber 1991a, Mosser and Teichova 1991) was detrimental to its liquidity because the Konzern tied up the bank’s capital. Second, the bank was dedicated to sustaining its Konzern not only within Austria’s new borders but throughout the successor states of the Austro-Hungarian Monarchy (Stiefel 1983, Weber 2008, Hertz 1933, Schubert 1991, Eigner 1997a, Weber 1991b). The pursuit of regional ambitions reinforced the bank’s low liquidity and weak profitability. Third, to mitigate its limited liquidity and support its regional expansion, the bank excessively exposed itself to short-term foreign capital which contributed to exchange rate risk and maturity risk (Eichengreen 1992, Kindleberger 1986, Cottrell 1983, Teichova 1994, Fior 2006). When in 1931 the Credit-Anstalt announced its financial difficulties, foreign creditors (Eichengreen 1992) or domestic deposit holders (Schubert 1991) started a run on the bank.

The purpose of this paper is to revisit the arguments of the historiography regarding the causes of the Austrian crisis in 1931. The existing literature does not utilize the available data that allow us to properly evaluate these arguments, it does not include the whole financial system into its analysis, and it does not directly address the role of policy-makers in the debacle. To facilitate a re-assessment of the drivers of the crisis, I constructed a rich dataset of macroeconomic indicators for the Austrian economy and collected the balance sheets and profit and loss statements of the entire financial sector bank-by-bank from 1925 until 1933. The dataset is the product of primary research based on archival sources and contemporary statistical publications. It allows me to carry out the most comprehensive investigation to date into the banking crisis that rocked the country in 1931. This paper is thus the seminal quantitative analysis that reconstructs the size, structure, risk level, and foreign exposure of the financial system. In addition, a deep analytical narrative depicts the motivations of policy-makers and their relations to financial institutions, synthesizing the information from archival evidence, primary data, and the existing literature.

My database and analyses confirm the findings of previous research only in part. Contrary to the traditional view, the Austrian financial system was not heavily exposed to foreign creditors and banks’ lending outside of Austria was small. The share of foreign currency creditors peaked at 16 per cent of the banking sector’s total assets in 1927, but declined to 11 per cent in 1928 and 9 per cent in 1929 and 1930.281 Foreign creditors were thus very far from being the most important financiers of financial institutions and their flight started much earlier than 1931. Furthermore, banks’ foreign currency mismatch was not of a magnitude that the Austrian National Bank’s enormous reserves would not have been able to cover. Finally, only a portion of banks’ foreign currency lending left Austria’s borders while the rest was spent domestically. The evidence thus disproves not only the instrumental role of

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281 All of the figures regarding the financial system and individual financial institutions were collected from the Compass Finanzielles Jahrbuch, 1926-35.
currency risk in bringing about the crisis but also the claim regarding Viennese banks’ post-imperial regional ambitions.

Further, in contrast with the literature’s position, financial institutions enjoyed high levels of liquidity during the 1920s. Their lending increased from 2.7 billion to 4.6 billion Austrian Schillings (AS) between 1925 and 1930 and close to one-third of their total assets were liquid. To sustain the high liquidity level, banks actually raised their capital domestically and the Konzern was undoubtedly their largest financier. Therefore, instead of immobilizing banks’ capital, as the literature claims, the universal banking structure was, in fact, a source of very reliable and cheap capital until 1929.

Nevertheless, the literature’s argument on universal banking does apply from July 1929 when the Konzern became a liquidity absorber for the financial system. As the economy descended into a recession, industrial performance deteriorated and intra-Konzern lending dried up. By then, the Credit-Anstalt had 27 per cent of the financial system’s total assets under its roof, and with this amounting to 150 per cent of the total annual revenues of the state budget and 16 per cent of GDP, the bank was simply too big to find other financiers sufficiently large to assure its liquidity.282 It collapsed because it could not find a new liquidity source to continue financing its oversized and cash-deprived Konzern. In turn, it pulled down the Austrian economy with itself.

Universal banking is the culprit
Austria inherited large industrial structures and a peculiar form of industrial financing from the times of the Austro-Hungarian Monarchy. Prior to World War I, industrial capacities serviced the demand of the whole Empire and that of vibrant international trade. The country’s industrial development was financed through universal banks which were active financial supporters of start-ups and growth capital through shareholding as well as lending (Good 1984, Rudolph 1976). The close connection between banks and industry were further enhanced through board representation (Eigner 1997b). Universal banks thus had their own Konzern: an industrial network that they founded, financed and were personally linked to.

In the postwar years of diminished domestic demand and international trade connections saddled by political animosity, Austria’s large industrial capacities, originally fit for the whole Empire, became redundant (Mosser and Teichova 1991). However, besides the industrial lobby, there were two other stakeholders who were adamantly against the liquidation of these old structures: the political class and financial institutions. The political class had a vested interest against liquidations since these would have led to an increase in the unemployment level and may have started a chain of bankruptcies in the economy. Authorities had no means to handle such challenges as the fixed exchange rate and capital mobility tied their hands when it came to stimulating the economy (Obstfeld 1997). To avoid an increase in the jobless rate and the subsequent political instability, the political class was committed to sustaining former industrial structures. Reducing the size of industry was similarly anathema to the universal banks. Being owners as well as lenders of these companies, they would have lost their invested capital and incurred substantial losses through liquidations. A smaller industry would have also entailed smaller universal banks, i.e. the loss of banks’ economic clout that came with size. Therefore, universal banks, just like the political class, had a deep-rooted interest in maintaining old and excessive industrial structures.

Figure 1 illustrates just how important the Konzern was for universal banks. The diagram on the left shows the equity and liability side of Viennese banks’ aggregate balance sheet where domestic creditors are indicated with pink bars. The diagram on the right decomposes domestic creditors and shows that intra-Konzern lending accounted for 33-49 per cent of large banks’ financing. This illustrates that universal banks acted as centres of

282 Own calculations based on Compass, Statistisches Handbuch, WIFO, 1965.
redistribution for their Konzern: they collected the cash generated by the liquid parts of the
Konzern and they distributed this money as loans amongst the low performers or those that
needed credit to grow. Profitable Konzern members hence became banks’ domestic creditors,
ensuring their high liquidity during the 1920s.

Figure 1: Structure of the equity and liability side of large banks aggregate balance sheet

Theoretically, using the resources of the good performers of the Konzern, banks could
have reorganized the operations of the weak performers or could have eventually liquidated
them. Banks as well as the political class were the key guarantors that this did not happen.
There were no appreciable write-offs on Konzern-owning banks’ financial statements. The
intra-Konzern redistribution was, however, a precarious game that was sustainable only as
long as the well performing members of the Konzern produced enough surplus cash to finance
the ailing members. Once the Konzern became a net cash absorber, a scramble for new
liquidity started and only those universal banks could remain standing which had access to
sufficiently large volumes of liquidity from other sources to shore up the weak performers.

The three universal bank failures in the second half of the 1920s illustrate that there
were significant differences across these banks in terms of the performance of their Konzern
and their access to liquid capital. In 1926, the Unionbank and the Verkehrsbank and in 1929,
the Boden-Credit-Anstalt failed. The first two were merged into the third, while the third was
absorbed by the largest bank, the Credit-Anstalt. The three banks failed due to the low
performance of their Konzern but their past loss-making was not acknowledged in write-offs.
The political class was an active supporter of hiding past losses and ensuring the survival of
the failed banks’ Konzern within the absorbing entity. Through this they could avoid
liquidations as well as the write-off of depositors’ capital. When the Credit-Anstalt became
the ‘absorber of last resort’, authorities provided it with implicit and explicit guarantees to
ensure its continued liquidity.283

However, government support was enough only for deferring the collapse by a year.
From July 1929 the recession of the Austrian economy became general and the availability of
intra-Konzern financing declined. Figure 2 shows the annual change in universal banks’
external financial resources between 1926 and 1930. The data reveal that before 1929 the
aggregate Konzern positively contributed to institutions’ capital. In 1929 and 1930, however,

the resources available from banks’ industrial connections substantially declined and became net negative.

Figure 2: Annual change in large banks’ liabilities, million AS

The low performance of their Konzerns made Viennese banks effectively insolvent by 1929 and it was not a question of whether but when these institutions would experience a crisis. This depended on their options to find new liquidity. However, new financing sources became increasingly limited. Figure 2 shows that foreign creditors had been leaving since 1928 and their rise in 1930 was insufficient to compensate for the loss of intra-Konzern financing. Only other financial institutions, namely savings banks (Sparkassen) remained as potential financiers which had a sufficiently sizeable aggregate balance sheet to support the universal banks. They substantially increased their lending to the large banks in 1930 but this was not a reliable resource due to the deepening recession. Large banks had run out of options to mask their insolvency behind new liquidity.

As all potential sources of liquidity ran out, the only remaining source was the state. When in early 1931 it became clear to the management of the Credit-Anstalt that the pyramid scheme that the banking sector had become could no longer be maintained, they turned to the authorities for support. They did this not because they lost the trust of their foreign or domestic financiers and the capital flight gave them no other choice. They were forced to do it because there was no new liquidity behind which they could have hidden the years of insolvency. The financial system’s carefully maintained façade of stability broke down and the run on the bank started.

Concluding remarks
The path which led Austria to the crisis of 1931 was not for its economic actors to choose; they simply had no alternatives. Desperate authorities were trying to find means to stimulate
the economy in an increasingly hostile political environment. The fixed exchange rate system and capital mobility promoted by international organizations, and the latter’s close surveillance of government finances demanded restrictions on public spending and borrowing. The social and political situation, however, required authorities to spend in order to maintain economic stability. Relying on the banking system to sustain the country’s ailing industry was the only feasible alternative for clandestine economic stimulus. Viennese banks, on the other hand, had to find a viable business model after having been squeezed out of much of Central Europe and deprived of former market networks. They could not allow their Konzern to go under and their industrial base to shrink because that would have threatened the remaining purpose of their existence. Banks and authorities were hence united in their goal to sustain the old industrial structure at all costs. The unfortunate outcome was that this eventually pulled down the banking system.

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A collective approach: Commonwealth central bankers and the Second World War

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Histories of the Second World War rarely touch on the role played by the commonwealth central bankers. Commonwealth financial history from the 1920s to the 1950s is dominated by the Great Depression and the Sterling Area Crisis. Where banking co-operation is addressed, it is in discussions of the Bank of International Settlements or the emergence of the Bretton Woods institutions. However the Bank of England and the commonwealth central banks in Australia, Canada, Eire, New Zealand, and South Africa each play a central part in their respective countries during the conflict, indirectly steering their economies. Their own international network within the context of the commonwealth but beyond the confines of the state is a key part of that history. This paper examines the public role of those from a sample of the commonwealth central banks and their international relationships during the Second World War.

The role of dominion banks

By the time the South African Reserve Bank (SARB) formed in 1921, the Bank of England (BoE) saw an important role for central banks in the Dominions. The vision was of: “a chain of central banks in our various Dominions and their cooperation with each other and our own Central institution and those of other countries [was] of the greatest importance to the smooth working to the smooth work of the world’s financial machinery.” 284 Australia already had an institution that was evolving into a central bank in the Commonwealth Bank of Australia (CBA). The financial crisis that began in 1929 and continued for the commonwealth dominions in the form of low commodities prices for much of the 1930s meant that Reserve Bank of New Zealand (RBNZ 1933), Bank of Canada (BoC 1935) and Central Bank of Ireland (CBI 1939) would all emerge during the decade.

In each case, the Bank of England provided key advice and personnel to ensure that they remained the dominant influence in banking. The Governor for this period, Montagu Norman, had worked with Gibson from the CBA to establish the Neimeyer mission to Australia in the 1930s.285 Similarly, when the Macmillan Commission examine the possibility of a central bank in Canada, Norman lent two experts from the bank.286 In both cases, public opinion in the dominions weighed against the BoE, which chose to keep their presence discreet in order to preserve financial orthodoxy and enhance the scope, stability and prestige of the sterling area.

While the BoE was no longer visible, their mark on the shape of what a central bank should be was indelible. Much of their new role revolved around interest and exchange rate management, with most having significant reserves of sterling in London, and all but Canada within the Sterling area itself and committed to its success. Over the course of the war, each bank in turn worked with their governments to establish exchange rate controls, manage the value of the currency in favour of the war effort, and keep interest rate pressures at a suitable level to help control overheating wartime economies.287

284 Drea 2013, 61.
285 Kirkby 2012.
286 Cain 1996.
287 Sayers 1956.
In Norman’s model, a central bank was also required to maintain an international network for gathering information, and provide advice in a policy context. Towers, Governor of the Bank of Canada, explained this to the Canadian Parliament in 1939:

The fact that there is a central bank in Canada makes it possible to achieve cooperation with the central banks in other countries. There is much which can be done in the way of interchange of information. Business conditions in a country’s main markets have an important bearing on domestic trade. A central bank which contented itself with a knowledge of home affairs and turned a blind eye to developments elsewhere would not be fulfilling its duty to its own people. The central banks of other countries constitute an excellent source of information. They can often provide facts rather than surmises. Cooperation along these lines is therefore extremely helpful, and can be developed by arrangement between central banks. Obviously, cooperation on any matter of high policy must be dictated by the views of the government of the countries concerned.\(^\text{288}\)

In practice, this gave the central banks the opportunity to garner outside advice, collaborate on international policy, and exert a subtle influence over national economic policy in service of international need.

**The banks, the bankers, and national public policies**

The role of the economist as adviser in the Second World War as typified by Keynes is well known. Professional economists were employed by each of the dominions to provide advice, often seconded to committees that were set up to direct wartime economic policy. Wood, U.K. Chancellor of the Exchequer, set up a consultative council including economics experts from universities to reinforce the treasury. Other economists that were already serving as public servants in financial or treasury roles, including as national statisticians, were also dragooned to serve on these committees, and these formed the bulk of the Canadian Economic Advisory Council.\(^\text{289}\) Australia would have both university experts and public servants on their Financial and Economic Committee.

All three nations also included recruits from their central banks in their central advisory committees, and their subsidiary committees on savings and industry. In the United Kingdom, Catto from the BoE would serve in an equally important advisory role as Keynes, though he would be far less visible. Towers would be taken as an advisor by the Canadian government, and bring with him a number of young economists from the BoC. Australian Financial and Economic Committee (FEC) would include Prof. L.F. Giblin, from the CBA board and Melville, the CBA economist. In turn, when the committee was expanded in 1939 they brought in Coombs, a young economist working at the Commonwealth Bank. Giblin later noted that Melville’s appointment ensured: “mutual understanding and the co-ordination of central bank and / government outlooks. One result was that the Bank was well informed about and interested in government policy in the making. This was one of the influences which contributed to the continually closer collaboration of government and Bank throughout the war”.\(^\text{290}\)

In all cases, their advisory roles would extend to providing policy advice on issues only tenuously linked with the exchange or interest rates. Melville would later comment that their role was not just to look at the problems of financing the war, but of organizing the economy within the overall macroeconomic context.\(^\text{291}\) This would include taxation, price control and rationing as mechanisms to increase savings and wartime bond uptake or channel resources toward war needs, and also later on postwar proposals. As the Chancellor’s financial advisor, Catto urged significant wartime controls and economic reforms, and

\(^{288}\) Fullerton 1986, 312-3.
\(^{289}\) Bryce 2005.
\(^{290}\) Giblin 1951, 262.
\(^{291}\) Cornish 1993, 450.
proposed solutions to problems created by a Sterling imbalance with India. Towers would
mastermind the Air Empire Training Scheme and ‘billion dollar gift’ proposals, as well as
providing significant advice on mutual aid and later heading the war bond campaign.292

The influence of those from the CBA would extend directly to those in government.
Like Norman in the United Kingdom, Giblin would visit the Treasurer on a daily basis to
provide advice, particularly on the introduction of a uniform income tax in 1942. Giblin,
Melville and Coombs were behind Australia’s push to see an international full employment
policy as the key dividend of peace, and commit Chifley first as Treasurer and later as Prime
Minister to pursuing this on an international level. Coombs would become Chifley’s closest
advisor, considered too valuable to be seconded to the Washington embassy as their resident
economist, to the disappointment of Keynes.293 During the course of the war Coombs would
become more influential within the bank and public policy circles, and would be appointed to
the CBA board, become Rationing Commissioner and then Director of Postwar
Reconstruction. After the war, he would return to the CBA in the role of Governor.294 At one
remove, the Secretary to the Treasury, Sheehan and his deputy, McFarlane, would also be on
the Board of the CBA. The CBA ties to power  were close, and they fulfilled Norman’s
requirement of giving direct advice to policy makers, though Norman himself would be
sidelined with the ascension of Churchill.295

International connections
From the beginning of the conflict, the BoE saw a role for themselves and the dominion
banks. They were brought in on the initial planning for imperial defence finance, and were
already in close communication over the exchange problem from 1938.296 They were also
well-placed to provide advice to other central banks in the commonwealth. Cobbold had been
sending Empire weekly cables to an increasing list of dominion recipients since 1930.
Correspondence with individual bankers and those seconded to government advisory roles
would increase during the war, providing advice on aspects relating to the specifics in each
country, from minor issues of shipping through to larger issues of taxation and banking
controls. The BoE would also provide a conduit to share information from other central banks
relating to effective policies on prices, savings and loans, as well as keeping the central banks
updated on the latest position of the sterling area.297

Those seconded from the dominion banks would also look for advice among their
banking connections. Towers already had connections with the BoE, who had mentored him
during his early years as governor, including Osborne and Peacock. Towers correspond
extensively with his bank connections overseas, providing literature that they could use to
model war loan campaigns or pricing controls. He also kept his connections updated on
monetary policies in the United States, which he was better placed to observe within the
Dollar Bloc. By the end of the war, this correspondence would extend to, and influence, not
just those in the Bank of England, but also those associated with the other dominion banks.298

Advice would also be offered and exchanged as those from banking backgrounds
increasingly met on an international basis. Towers would travel extensively to negotiate the
terms of his proposal which would become the ‘billion dollar gift’ to the United Kingdom,
renewing contact with those in the BoE. Coombs would travel extensively to meetings on the
shape of postwar finance, and be present in meetings between Chifley and Acheson regarding

294 Coombs 1981.
295 Boyle 1967, 311.
297 BoE Archives, OV181, OV13.
298 BoC Archives, NWFC fonds, Commonwealth financing.
the settlement of lend-lease arrangements. Some would be sought for international roles in the future, with Towers approached to head the BoE, IMF and World Bank.299

Banking connections would also be used to gather other international sources of policy advice. Melville would use the Commonwealth Bank’s London Manager to establish a link with Kalecki, an economist whose ideas on encouraging savings via price control and rationing rather than taxation he would champion and get adopted by the FEC. The CBA would also contract another of Keynes’ critics, Balogh, “to provide a weekly letter on current events and financial and other matters of interest to a central bank”.300 Balogh’s letters would be used by CBA board members Giblin and McFarlane, as well as Melville in shaping their ideas on taxation and controls, though their source would not be disclosed until well after the end of the conflict.

Reflections
It could be argued that the Second World War is actually the peak of central banking influence in the commonwealth. Those associated with the banks were no longer resented in the dominions as they had been during the 1930s economic collapse. Instead, commonwealth central banks provided significant wartime support to those in government, helping to shape policy, as well as minimizing the dislocations caused by movements to a total war economy. However bank involvement is also often indirect, in the form of borrowed expertise, influence and connections, with the bankers more important than the banks themselves. Their role is overshadowed by the momentous events of the conflict itself, the larger personalities who lead the wartime governments, and the vast changes to the national and economic systems that resulted. However this growing sense of collective identity based on connections as commonwealth central bankers does provide the knowledge, expertise and influence that will be brought to bear when the international economies in the commonwealth become embroiled in the sterling area crisis that was to follow shortly thereafter.301

References
Bank of England Archives: Correspondence with Commonwealth Bank of Australia (OV13); Empire Weekly Cables (OV181).

300 Mann 2015, 31
301 See McKenzie 2006.


**Competition law, competition policy, and the London clearing banks, 1946-79**

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**Introduction**

Competition policy has emerged relatively recently in the U.K. According to Wilks, ‘the consistent prosecution of competition policy is a postwar phenomenon’, while Kay identifies 1948 specifically as the year in which the U.K. first adopted a competition policy. In that year the Labour government enacted the Monopolies and Restrictive Practices (Inquiry and Control) Act 1948, thereby establishing the Monopolies and Restrictive Practices Commission. Its origins lay in the aftermath of the Second World War, and Wilks contends that the ‘inspirational goal’ of competition policy was to hasten the achievement of full employment, one of the central aspirations of postwar British politics and a pillar of the postwar consensus. The term ‘competition policy’ was not, however, widely used by politicians until the mid-1960s. One of the earliest Hansard references to it occurred in October 1966 in a debate on ‘redeployment’. In the debate the Conservative MP for Cirencester and Tewkesbury, Nicholas Ridley, stressed the need for a policy that would express protect and ensure competition: “A competition policy is something one must watch continuously and pursue continuously. This is the way to force inefficient firms to be efficient and to shake out labour … which should not be where it is”.

What was the scope of competition policy? In 1978 Roy Hattersley, the then Secretary of State for Prices and Consumer Protection, presented a Consultative Document to Parliament setting out the findings of a review of monopolies and mergers policy. The working party carrying out the review had been chaired by Hans Liesner, the then Chief Economic Advisor to three government departments: Industry, Trade, and Prices and Consumer Protection. The Consultative Document defined ‘competition policy’ as policy in relation to four areas: monopolies, mergers, restrictive trade practices, and resale price maintenance, together with a residual generic category that they referred to as ‘other uncompetitive practices’. Each of these structures or practices were potential obstacles to competition. In clearing banking, given that the banks were not ‘resellers’ of banking products and services, policy in relation to resale price maintenance was not directly relevant to them. However, the other three areas – monopolies, mergers, and restrictive trade practices

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307 In 1946 there were 11 London clearing banks – the ‘Big Five’ (Barclays, Lloyds, Midland, National Provincial, and Westminster) and the ‘Little Six’ (Coutts & Co., District, Glyn Mills & Co., Martins, National, and Williams Deacon’s).
were highly relevant to competition in clearing banking, and provide a useful framework for analysing competition policy and its impact upon clearing banking in the decades following the Second World War. The focus of this paper is on the third of these obstacles to competition – restrictive trade practices – as exemplified through clearing bank opening hours.

Restrictive practices and banking

The question of restrictive practices became increasingly prominent in competition policy in the 1950s. The Conservatives had defeated Labour at the October 1951 general election, inaugurating 13 years of Conservative government. Prime Minister Winston Churchill appointed Peter Thorneycroft as President of the Board of Trade, a position he held in 1951-7. Under Thorneycroft competition policy began to be subtly but distinctively reconfigured. In 1956 the Restrictive Trade Practices Act established a new Restrictive Practices Court, while at the same time the Monopolies and Restrictive Practices Commission was weakened. Membership of the latter was reduced from 25 to 10 and all members except the chairman were part-time. Barbara Castle remarked many years later in her role as Secretary of State for Employment and Productivity that, as a consequence of the 1956 Act, "its [the Commission’s] inquiries took years. On average, it took four and a half years to produce a report". Wilks argues that the motive for the 1956 legislation was the hostility of business to the Monopolies and Restrictive Practices Commission. The legislation also implied a shift of political emphasis away from the prevention or elimination of monopolies, and towards the prevention and elimination of restrictive practices.

The Restrictive Practices Act 1956 did not, and was not meant to, address clearing bank restrictive agreements because it pertained to the supply of goods only and not to the supply of services. It was not until the Fair Trading Act 1973 that agreements relating to services were covered by competition law. Nevertheless, certain restrictive bank practices were coming under scrutiny well before the enactment of the Fair Trading Act. These practices included banks’ collective agreements over pricing and opening hours, and their control over access to membership of the Bankers’ Clearing House. The organization through which these practices were collectively agreed was the Committee of London Clearing Bankers. Bank opening hours as a restrictive practice is now explored in further detail.

Opening hours

The London clearing banks operated uniform hours and, as with collectively agreed prices, these were subject to agreement by the Committee of London Clearing Bankers, on which the chairpersons of the clearing banks were represented. Even after the enactment of the Fair Trading Act 1973, however, opening hours were not challenged by the Office of Fair Trading. In fact, opening hours had become even more restrictive from July 1969 because in 1968 the clearing banks had decided collectively that they would close on Saturdays from 1 July the following year. This agreement between the banks went against the grain of competition policy.

The possibility of banks closing on Saturdays had been discussed seriously since 1964, as a result of the difficulty of recruiting and retaining staff. The uniform opening hours for the clearing banks at that time were 27 hours per week. They opened from 10.00 a.m. to 3.00 p.m. from Monday to Friday and from 9.30 a.m. to 11.30 a.m. on a Saturday. Notwithstanding their uniform opening hours, the clearing banks were divided on the issue of Saturday closing. Duncan Stirling of Westminster Bank, for example, advised his counterparts that his own bank was vehemently opposed to Saturday closing because “they believed such a

309 Wilks, In the Public Interest: Competition Policy and the Monopolies and Mergers Commission, 36.
move to be contrary to the national interest at a time when there was an acknowledged obligation to improve efficiency by working harder”.310 A special subcommittee of the Committee of London Clearing Bankers was established to consider the issue, and met for the first time on 4 March 1964. At the first meeting Westminster Bank voiced its opposition while the Midland supported the change, provided that Saturday closing was combined with extended opening hours during the week. The subcommittee was unable to find a solution that could satisfactorily accommodate both the demand from staff for a five-day working week, and the retention of existing hours.311 A new, special subcommittee of the Committee of London Clearing Bankers was therefore asked to investigate the matter further, and in January 1965 it recommended complete closure on Saturdays, with longer hours if required during the week. The representative from Westminster Bank again dissented. The Committee of London Clearing Bankers discussed the possibility of adding around seven and a half hours to Monday to Friday opening to compensate for complete closure on Saturdays: branches would open from 9.30 a.m. to 4.00 p.m. on four days per week and from 9.30 a.m. to 6.00 p.m. on the fifth day. In 1966 the clearing banks promoted a Private Member’s Bill to permit Saturday closing. The Chancellor, however, was not willing to permit a change at this point, preferring instead to await the report on bank charges from the National Board for Prices and Incomes (NBPI).

In due course, in May 1967, the NBPI published its report and noted that the banks had not responded sufficiently flexibly to competition from trustee savings banks, building societies, and the Post Office Savings Bank in respect of their opening hours.312 It concluded that “the present system of uniform opening hours should make way for a more flexible system [that] would better suit the convenience of the public and make for more efficient use of resources”.313 Notwithstanding the report, in September 1968 the chief executives of the Committee of London Clearing Bankers agreed on revised bank opening hours. Branches would be open longer during the week – from 9.30 a.m. to 4.00 p.m., and from 4.30 p.m. to 6.00 p.m. one evening from Monday to Thursday – but would close on Saturdays.314 Accordingly, on 1 July 1969 Saturday closing was introduced. The press release stated that this was because of the difficulty of recruiting and retaining staff.315 In his annual statement to shareholders in 1968, the chairman of Lloyds stated that “it was with regret that we, in common with the other banks, announced on 13 September 1968 that Saturday opening would be discontinued with effect from 1st July 1969 because of the difficulty of recruiting and retaining staff. … We are very much aware of the inconvenience which Saturday closing will inevitably cause to many customers, and we are doing all that lies in our power to alleviate this”.316 In the event, banking opening hours during the week ran from 9.30 a.m. to 3.30 p.m. Monday to Friday, and from 4.30 p.m. to 6.00 p.m. on one day from Monday to Thursday, representing a net increase of four and a half hours.317 It was observed by The Times a few weeks later that Saturday closing had “thrown into sharper focus the growing overlap between the roles of the building society movement and the clearing banks, particularly given that “societies remain open on Saturdays”.318 In his annual statement to shareholders in 1978 the

311 Report for the Board on ‘Banking Hours’ 7 May 1965, Lloyds Banking Group Archives: 9150 Ho/D/Boa/Age/35.
313 Ibid., 55, paras. 163 and 165.
314 Minutes of a special meeting of Chief Executive Officers on 23 Sept. 1968, LMA: CLC/B/029/MS32037/019.
318 The Times, ‘Banking When the Banks are Closed’ 26 July 1969, 13, issue 57622.
chairman of Lloyds Bank referred to an opinion poll that showed that “the more general criticism of banks in the United Kingdom and elsewhere is that our profits are too high and that our service, though still of a good standard, has been impaired by mechanization and limited opening hours”.

It was not until many years later that the hours of business established in 1969 began to change. In 1988 Lloyds announced that it was to extend its opening hours by one hour to 4.30 p.m., the first clearing bank to do so for all its branches. *The Times* noted that “most clearing banks have recently experimented with longer hours in selected branches”. The impact of competition law in bringing about the change had, however, been minimal.

**Conclusion**

Competition policy and competition law played a relatively minor role in the process of introducing greater competition into clearing banking. Where competition policy did impact directly upon the banks – such as in 1968 when the proposed merger of Barclays, Lloyds, and Martin was referred to and rejected by the Monopolies Commission, this was competition policy enforced through the administrative apparatus (the Monopolies Commission) rather than through the judicial apparatus (the Restrictive Practices Court). Similarly, the weakening or elimination of restrictive trade practices in clearing banking came about as a result of pressures other than the law. The NBPI’s report on bank charges in 1967 and the Monopoly Commission’s report on the proposed merger of Barclays, Lloyds, and Martins in 1968 placed banks’ restrictive practices in the spotlight. The catalyst for change in relation to collective pricing was policy development within the Bank of England, which culminated in the new policy ‘Competition and Credit Control’ in 1971. This policy weakened (but did not entirely eliminate) banks’ collective pricing agreements. In the case of entry to the Bankers’ Clearing House and opening hours, these restrictive practices were not eliminated until many years later.

Despite the emergence during the 1960s of an increasingly powerful narrative that clearing banking in the U.K. was uncompetitive, competition policy and law exerted a rather modest direct impact on competition in clearing banking. The counterweights to these two pressures were institutional. First, the authorities themselves were somewhat ambivalent about the introduction of competition into clearing banking, an ambivalence that reflected the fact that the clearing bank cartel brought benefits not only to the clearing banks themselves, but also to the authorities. Moreover, it was not self-evident that the absence of unfettered competition worked against the interests of customers. Second, there was a long tradition of extra-legal regulation in clearing banking, including self-regulation. This tradition shaped the nature of clearing bank regulation but also had a strong bearing on the way in which greater competition was introduced into banking. This tradition was underpinned by extremely high levels of legitimacy in the relationship between the clearing banks and the authorities. Finally, it was not until the 1970s that the postwar consensus began to dissolve. Before its dissolution relatively high levels of employment, the relative power of organized labour (including amongst bank employees), and the desire to avoid conflict in industrial relations acted together as a strong countervailing pressure to the application of formal rules to increase competition in banking.

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320 *The Times*, ‘Lloyds to Open for Extra Hour’ 4 Oct. 1988, 1, issue 63203.
321 The Monopolies and Mergers Act 1965 empowered the Monopolies Commission to investigate actual or potential mergers for the first time.
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‘Has the Euro-Dollar a future?’324 The formative years of the Eurodollar market, 1959-64

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Scholars consider the Eurodollar market a symbol of the re-emergence of global finance in the late twentieth century.325 Since the return to convertibility in 1958 under the Bretton Woods system, the market for expatriate U.S. dollars challenged monetary policies of nation-states to embed the financial market for the sake of domestic economy, in a Polanyian sense.326 Also, the nascent market contributed to the revival of the City of London as an international financial centre. Accordingly, literatures have paid attention to the development of Eurodollars specifically on its origins, new practices by innovative bankers, and the deliberate efforts by the Bank of England to incubate the new market.327

However, this paper contends the following assumptions in existing literatures: first, despite the transnational features of the Eurodollar market, the focus is disproportionately given to the British financial community. Since its inception in the City of London, the market attracted actors from various countries even the Communist bloc. Therefore, the discussions over the market went beyond the square-mile financial district and reached to international financial forums such as the Bank for International Settlements (BIS). Second, examination on the contemporary discussions on the nascent market indicates that the absence of a centralized facility for Eurodollar transactions was a critical feature of the Eurodollar market. Due to the secrecy of banking practices328 and imminent uncertainty in the new practice, market participants had expressed varied and often contradictory ideas, which implied diverged policy recommendations over the development of Eurodollars. Acknowledging the importance of the access to information in characterizing the market as well as projecting a regulatory framework, this paper first examines contemporary contestations over the Eurodollar market within and beyond the City of London and argues the asymmetric information that the Bank of England exploited to obliterate continued efforts to adopt international regulatory framework and control relevant discussions in the formative years of the Eurodollar market. It also implies that often perceived ‘deregulation’ on the international financial market is problematic for it was deliberately sought by certain market participants.

Despite its continued proliferation in the City of London, the Eurodollar market was hidden due to practitioners’ fear of publicity. And rather than monetary authorities, financial journalists such as Paul Einzig began to trail the market’s development against “a remarkable conspiracy of silence”.329 Using the personal ties in the financial community, the press produced multi-faceted features of Eurodollars since 1960, increasingly acquiring authority over discourses concerning the nascent market. In general, City journalists welcomed the new international money market for it would provide the ‘invisible earnings’ to the British economy which had been questioned. Another expectation was that the Eurodollar business would revive London as the international financial centre.330 Despite perturbing effects of arbitrage and speculation that would make monetary policies less effective, Einzig envisioned

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325 For example, see Burn (2006).
326 Polanyi (1957).
328 Poovey (2009).
the proliferation of the market. And these accounts indicate that financial journalists embraced the new phenomenon as a solution to reinvigorate the financial district as well as the international banking business.

Simultaneously, the nascent market attracted attention from the U.S. whose currency was being mobilized in Europe. Yet, the New York Clearing House Association criticized the Eurodollar market to have induced the decline of New York as a centre for international finance. The interest group demanded the elimination of the “straitjacket of Regulation Q”, which encouraged Eurodollar transactions. Yet, the Federal Reserve Bank of New York considered the market would add importance of U.S. dollar as an international currency. In continental Europe, Eurodollars were expected to promote a financial European community instead of tardy progress of the Treaty of Rome which aimed to lift capital controls. International organizations did not overlook the development. For example, an internal report from the International Monetary Fund provided a comprehensive depiction of the Eurodollar market in 1961 and dismissed the proposed danger in the maturity mismatch in Eurodollar lending and understood that the anonymity in such transactions as the rationale for the participation of socialist banks such as the Moscow Narodny Bank. It also observed that the Eurodollar market was becoming a determinant factor in the structure of international interest rates.

These depictions indicate the kaleidoscope of the Eurodollar market by various market actors in the international financial community. Each of them presented discursive representations of the market and implied certain orientation on it. The knowledge was to harbringer contestations over the future of the Eurodollar market including the regulatory framework.

As literatures have suggested, the Bank of England offered a regulatory space that encouraged the proliferation of Eurodollars despite the disturbing effects of ‘hot money’ upon the domestic economy. Its internal report of April 1961 dismissed the possible concern in the Eurodollar market similar to the losses of currency deposits with Russian banks in 1917 and with Germans in 1931 by assuming that “such dangers would be naturally restricted by banking prudence”. By the end of 1961, Einzig claimed that “[T]he surge of business in Euro-dollars … a godsend to the foreign exchange departments of the banks. … There is every reason to believe that the new facilities have come to stay”. However, it did not take long for market participants to question the Eurodollar market, even its existence.

In 1962, the U.S. Federal Reserve allowed American banks to offer higher interest rates on deposit in consideration of the U.S. balance of payments, which would make Eurodollars less attractive. Although the actual effect was small, the perceived vulnerability of the Eurodollar market to the interest rate policy stimulated a controversy concerning its future and even raison d’etre. Charles Hambro of the Hambros Bank told the Bank of England that Eurodollars were “likely to be a temporary phenomenon in the European economy”. An article in Barclays Bank Review also admitted that they were “essentially a

331 Einzig (1961).
335 S811 Mission to Europe, Altman, O.L., The IMF Archives.
336 EID10/19, Bank of England Archives (hereafter BEA). Such a shift in the historical hostility toward ‘hot money’ was shared among Western monetary officials. For example, at a meeting of the Economic Policy Committee of the Organization for European Economic Cooperation in 1961, de Strycker of The Netherlands eloquently expressed that “short-term capital movements must not be condemned a priori. It was only when speculation produced a vicious circle of action and reaction that drastic measures to restore confidence had to be taken”. EEO/EPC:WP3(1990)01, OECD Library and Archives.
338 C48/28, BEA.
short-term problem”. Against such accusations, George F. Bolton of the Bank of London and South America defended the new international money market for it had reached “a situation where hundreds of leading banks of the world are engaged in depositing money with each other”, and “provide Britain with a financial capacity that the sterling system cannot itself generate”. And beyond London, the issue was placed at meetings of European bankers such as the International Institute of Banking and the Annual International Monetary Conference of the American Bankers Association. In these forums, Hermann Abs of the Deutsche Bank blamed central bankers for assisting the growth of Eurodollars, and Carli Guido warned that commercial banks should limit their business in Eurodollars for its impact on the domestic market. Still, the Bank of England firmly stood for the new market.

As the market further expanded attracting many countries beyond Europe, central bankers began to respond to the development for the growing significance of short-term capital movements was an inevitable issue. And the BIS provided a field under which central bankers could share ideas and facilitate the formulation of policy guidelines. In 1961, the club for central bankers shed light on the Eurodollar market in its paper on short-term capital movements. And in June 1962, the BIS called for a meeting of central bank officials to discuss the Eurodollar market with a proposal to collect statistical information for “a clear view of its size and workings”. A new statistic was expected to function as a reference for the better understanding on the market as well as formulation of policy measures. However, as a staff economist of the Federal Reserve Bank of New York warned, obstacles for collecting information from various institutions and the Eurodollar market itself loomed over central banks. First, an approach to reconcile two goals of obtaining useful details for analytical purposes and avoiding an undue burden to participating banks in the survey was necessary. At the same time, the problem of “the large amounts of duplications arising from the pyramiding of deposits” was unavoidable in order to produce a uniform and logical coding system. Also, the identification of ‘end-user’ was problematic for private banks. Most of all, the Bank of England already determined to “be very reluctant to call for details of maturities for fear of giving the impression that it was thought that some banks were not acting according to prudent banking prudence”.

From 6th to 8th October 1962, the central bankers at the BIS discussed (a) statistics of the Eurodollar market (b) general exchange of views on the market. They provided individual statistics of Eurodollar flows within domestic money market but each of them applied different categories to represent the market. A U.S. delegate complained that these figures “had made nonsense of U.S. statistics”. Such fragmented information rendered any assessment of the market practically impossible. To pool information on a unified form, the French suggested a table with a condition of strict reciprocal exchange. It aimed at the London market, the essential centre for Eurodollar business. On the other hand, central bankers did not reach any consensus on Eurodollars, even its definition. While a great deal of attention was paid to “the possibility and consequences of things going wrong somewhere in the market”, no one had a clear idea for policy measures for it was not possible to depict the market. Only did the meeting conclude to pursue “a concerted effort to improve statistical data on the Euro-dollar market by a mutual and reciprocal exchange of information through

341 Ibid.
342 Eid10/21, BEA.
343 1.3(a)3, Bank for International Settlements Archives (hereafter BISA).
344 Ibid.
345 Ibid.
346 Eid10/21, BEA.
the B.I.S.”348 And governors commissioned the BIS to draw a picture of the market with its size in individual country without geographical and maturity information.

Still, such a simple collection was exposed to practical difficulties and resistance from individual central banks. Particularly, the Bank of England was not able to compile required information from its member banks in London. In a letter to Gilbert Milton of the BIS, the British central bank warned that calculated figures varied according to the aim of gathering information. And internally it was reluctant to give more information. Moreover, other central banks were afraid to publish figures of its banks for “it would be contrary to the arrangement under which our banks have agreed to report if their figures were given a wide circulation”.349 While the meticulous efforts by the BIS resulted in annual statistics from 1964, it merely provided estimated size of the market.350 The elimination of duplication from pyramiding of deposits and identification of the ‘end user’ that would induce discussions for a regulatory framework were left unresolved.

In the absence of statutory regulation, the Eurodollar market continued to proliferate. And there were efforts by private bankers to set formal modus operandi for Eurodollar operators in order to tackle the unknown ‘end user’ problem and a bilateral stand-by credit line to ensure prudent transactions.351 Yet, these agreements could not be enforced without support from monetary authorities. Danger could loom over any time.

Then there came troubles in late 1963. The financial squeeze of Hugo Stinnes from Germany and the failure of Ira Haupt in New York substantiated the aforementioned fundamental problems of Eurodollar business. Specifically, the bankruptcy of American dealers alarmed the financial community in London the memory of 1931. Nonetheless, Roy Bridge of the Bank of England dismissed the incident merely “an amber light and caused a number of banks here and elsewhere to review the way they were doing their business”.352 In a conversation with Denis Rickett, Maurice H. Parsons also concluded that the problem in the soundness of ultimate borrowers was “essentially a matter for the banker’s own judgment”.353

The series of defaults was also placed at the BIS governors’ meeting on 6 December 1963. Participants suggested various ideas on the troubles in the Eurodollar market, but once again failed to reach a decision. While the French introduced its plan to introduce a policy on Eurodollar loans, the British strongly rejected the “condemnation of the Eurodollar market”354 and discouraged any attempts for a regulatory framework. At another meeting in the following month, when the contagion from Ira Haupt was successfully contained, governors once again examine the Eurodollar market. While no consensus was reached, “the general view seemed to be that there might be problems in connection with the Euro-dollar market but they were not essentially different from the problems that existed in relation to international short-term capital movements in general”.355 And the result of the meeting concluded a resolution of “Group of Ten: The Euro-Currency Market and the International Payments System,”356 which dismissed the inherent risks of Eurodollars but endorsed their usefulness. While the discussion continued, the BIS’s announcement recognized the Eurodollar market as a part of international money market as Koszul admitted in his speech to the French section of Association Cambiste Internationale – “the market exists and clearly it answers a need”.357

In its formative years, the Eurodollar market had been contested by contemporary market participants at various levels. Each actor presented discursive ideas regarding the

348 Ibid.
349 1.3(a)3, BISA.
351 ASBI, Pratiche, n. 67, fasc. 2, sfasc. 2, Banca d’Italia, and F/2/D/Com/1.5, Lloyds Banking Group Archives.
352 EID10/22, BEA.
353 Ibid.
354 1.3(a)3, BISA.
355 Ibid.
356 6A123/1, BISA.
current status and future of the market suggesting diverged policy recommendations. As the market expanded, it came to be a topic for central bankers at the BIS. And the introduction of a regulatory framework was continuously suggested and possible due to the inherent problems and failure of banks in the Eurodollar market. And as this paper argues, the Bank of England successfully obliterated these efforts by controlling the information and discourses regarding the Eurodollar market as the single authority on the City of London.

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Urban loans to the Crown and the growth of government in medieval England, 1307-51

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Supervisor: Dr James Davis

Throughout the late thirteenth and fourteenth centuries, the three Edwards pursued costly military campaigns against France, Scotland and Wales. Royal income was unable to finance these ventures and the Crown collected taxation, increased customs duties, and borrowed from continental banks such as the Riccardi, Bardi or Peruzzi. Furthermore, the Crown also exploited towns and the mercantile elite by requesting loans for the defence of the kingdom. Recent studies by Lorraine Attreed, Christian Liddy and Mark Ormrod analysed the urban loans forwarded to the Crown between the late fourteenth and early sixteenth centuries.358 Essentially, these studies proposed that urban loans were an innovative royal policy, forged in the immediate aftermath of the collapse of the Bardi and Peruzzi in 1345. However, this paper highlights that Edward III’s reliance upon such fiscal aid was a continuation and expansion of his father’s financial policies. By analysing the loans from Bristol and Norwich, this paper examines the nature of the Crown’s fiscal demands on towns and whether they intensified throughout the early 1300s. It also offers a new interpretation on Edward III’s urban policies. Essentially, the king employed burgesses as Crown officials in the localities throughout the 1330s and 1340s. They owed their enhanced status and income to these positions of authority. With the outbreak of the Hundred Years War in 1337, the Crown exploited these appointments and used them as leverage to negotiate loans.

Between 1307 and 1351, Norwich provided loans totalling £4,279 2d (see table 1) in support of the Crown’s campaigns in France and Scotland, a sum almost double that raised by the citizens in taxation during the same period. Norwich’s loans challenges the long-held assumption that Edward III was the first English monarch to borrow money from towns. Instead, the city forwarded loans worth £133 and £66 to support Edward II’s campaigns in Scotland in 1311 and 1313. Norwich was not alone as Lynn provided £200 and Great Yarmouth also lent £133 in 1311.359 These fiscal demands continued as Norwich lent £200 for the 1322 invasion of Scotland. Edward III requested urban loans long before the collapse of the Bardi and Peruzzi in 1345. For example, Norwich lent £133 to finance the 1335 Scottish campaign. Overall, 22 towns lent around £900 to this expedition, with Norwich providing the second largest sum.

Christian Liddy, Gerald Harriss and Hannes Kleineke have analysed the methods through which the Crown negotiated loans with its subjects during the late fourteenth and fifteenth centuries.360 Henry VI established commissions de mutuo faciendo to approach wealthy individuals and encourage them to lend money for the defence of Lancastrian France. This procedure, however, was not a fifteenth-century phenomenon as Edward III also instructed commissioners to negotiate corporate and individual loans during the opening phase of the Hundred Years War. In 1345, a commission including the archbishop of Canterbury, the treasurer, and chancellor was to ‘treat with merchants and others for loans for the king’.361 An identical commission was established the following year to ‘raise loans for the

359 CPR, 1307-13, p. 348.
361 CPR, 1343-45, p. 487.
king … and to bind him and his heirs … to all customs and subsidies for repayment’. These commissioners summoned the realm’s leading merchants to council meetings to discuss loans for the defence of the kingdom throughout the 1340s and 1350s.

Table 1: Norwich’s Loans to the Crown, 1311-51

<table>
<thead>
<tr>
<th>Lender</th>
<th>Amount</th>
<th>Year</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norwich</td>
<td>£133 6s 8d</td>
<td>1311</td>
<td>Scottish Campaign</td>
</tr>
<tr>
<td>Norwich</td>
<td>£66 13s 6d</td>
<td>1313</td>
<td>Scottish Campaign</td>
</tr>
<tr>
<td>Norwich</td>
<td>£200</td>
<td>1322</td>
<td>Scottish Campaign</td>
</tr>
<tr>
<td>Norwich</td>
<td>£133 6s 8d</td>
<td>1335</td>
<td>Scottish Campaign</td>
</tr>
<tr>
<td>18 Merchants</td>
<td>£548 6s 8d</td>
<td>1340</td>
<td>French Campaign</td>
</tr>
<tr>
<td>William Butt the Younger</td>
<td>£100</td>
<td>29 July 1345</td>
<td>French Campaign</td>
</tr>
<tr>
<td>Norwich Cathedral</td>
<td>£66 13s 4d</td>
<td>Apr.-Nov. 1346</td>
<td>French Campaign</td>
</tr>
<tr>
<td>Roger Hardegray</td>
<td>£800</td>
<td>Nov. 1346-Apr. 1347</td>
<td>French Campaign</td>
</tr>
<tr>
<td>William Butt the Younger</td>
<td>£66 13s 4d</td>
<td>May 1347</td>
<td>French Campaign</td>
</tr>
<tr>
<td>Richard Bytering &amp; Bartholomew de Salle</td>
<td>£400</td>
<td>June-Sept. 1347</td>
<td>French Campaign</td>
</tr>
<tr>
<td>Thomas Prior</td>
<td>£6 13s 4d</td>
<td>June-Sept. 1347</td>
<td>French Campaign</td>
</tr>
<tr>
<td>Roger Hardegray</td>
<td>£1,000</td>
<td>June-Sept. 1347</td>
<td>French Campaign</td>
</tr>
<tr>
<td>Roger Hardegray</td>
<td>£66 13s 4d</td>
<td>June-Sept. 1347</td>
<td>French Campaign</td>
</tr>
<tr>
<td>Norwich Cathedral</td>
<td>£24</td>
<td>Oct. 1347-Apr. 1348</td>
<td>French Campaign</td>
</tr>
<tr>
<td>Norwich</td>
<td>£666 13s 4d</td>
<td>Sept. 1351</td>
<td>French Campaign</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>£4,279 2d</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: TNA, SC 8/170/8475; SC 8/170/8477; E 401/239; E 401/326; CCR 1339-41, p. 423; E 401/382; E 401/385; E 401/387; Foedera, iii, p. 121; E 401/388; E 401/390; CPR 1350-54, p. 143.

Wealthy Norwich citizens, such as William Butt the Younger and Roger Hardegray, attended these meetings and became heavily embroiled in royal finance. In 1345, Butt provided a loan worth £100 for the invasion of France. This was as a form of patronage as the king issued a new charter to Norwich less than two weeks later. But also lent a further £66 in 1347 “for the salvation and defence of our kingdom of England”. Roger Hardegray lent money on three separate occasions to the Crown between 1346 and 1347, totalling £1,866 13s 4d, or 44 per cent of the city’s total loans between 1307 and 1351. He may have raised this capital by borrowing extensively from nobles, lesser merchants or financiers. For instance, in 1350 Hardegray borrowed £133 from John Wyngefeld, the Black Prince’s financial administrator, and a further £456 from the earl of Suffolk the following year.

Given the limitations of the source material, it is difficult to shed much light on the methods through which towns raised corporate loans, let alone the individual amounts each bürger contributed. But an incident at Coventry highlights that royal commissioners were dispatched to the city to collect a loan worth £200 in 1351. They were instructed ‘to assess and levy the same sum on all men of the town having goods of the value of £10’. The townsmen refused to pay the sum and assaulted the king’s officials. Whilst this was by no means identical to Henry VI’s commissions, it did possess similar basic characteristics.

363 Foedera, iii, p. 121.
365 Ibid., p. 201.
both instances, commissioners travelled throughout the counties to encourage urban residents to provide money. However, Edward III’s commissions were remarkably different to those of the later Lancastrian kings. Individual contributions to Coventry’s 1351 loan were based on an assessment of the total wealth of each burgess. In other words, the Crown adopted a similar process to that which it used to calculate individual taxation contributions before 1334.

In a similar vein to Coventry, many towns, religious houses and merchants were initially reluctant to provide loans for the French campaigns. Between 1338 and 1340, the Black Prince appointed three senior royal officials to travel throughout East Anglia and negotiate loans. But far from encountering loyal subjects, the commissioners received a wave of excuses pleading poverty. The burgesses of Lynn were ‘damaged by the sea and by the admirals for their costs that they are embeggared’. The citizens of Norwich replied that ‘they are greatly troubled by payment of their tenths and levies and other charges of the king’s admirals’.366 The Crown was unconvinced by Norwich’s excuse as a group of burgesses provided a loan worth £548 in 1340. Finally, Robert Bumpstede junior of Norwich refused to contribute to the city’s 1351 corporate loan because his involvement in the 1337 Wool Scheme had left him deeply out of pocket.367 There was clearly a degree of apathy from towns and religious houses towards the king’s request for loans during the 1340s. Nevertheless, Norwich’s loans highlight that there was a gradual evolution in the Crown’s fiscal policies towards towns during the early 1300s, stretching back to the reign of Edward II. Edward III simply adopted and developed his father’s embryonic strategy. The outbreak of the Hundred Years War and the collapse of the Italian banks only transformed loans into a more systematic and frequent royal demand on towns.

Bristol lent money to the Crown in 1345, 1347 and 1351 to finance the Crecy campaign and the siege of Calais (see table 2). The town only raised £1,027 for these expeditions and, to place this in perspective, Norwich provided almost four times this sum. Instead, Edward III requisitioned ships from the town to transport the army to France. Unlike their Norwich counterparts, Bristol merchants refrained from proffering corporate loans and made personal contributions. From 1345 to 1351, 43 different Bristolians lent individual sums ranging from £333 to 100s. Edward III negotiated these loans at merchant assemblies and council meetings. For example, 26 Bristol merchants lent money to the Crown in the summer of 1347, 19 of whom were present at a merchant assembly only a few weeks earlier. These individuals financed the Crown’s campaigns in France partly because they sought to protect their commercial links with Gascony. This is best illustrated by the loans worth a total of £200 provided by five Bristol merchants in 1345-6, one year before the king’s general plea for fiscal aid. As news filtered through of Edward III’s success at Crecy, the Bristol elite were increasingly willing to become embroiled in royal finance to safeguard their overseas economic interests.

<table>
<thead>
<tr>
<th>Lender</th>
<th>Amount</th>
<th>Year</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group of 5 Burgesses</td>
<td>£200</td>
<td>1345-6</td>
<td>Crecy Campaign</td>
</tr>
<tr>
<td>Group of 27 Burgesses</td>
<td>£332 13s 4d</td>
<td>1347</td>
<td>Siege of Calais</td>
</tr>
<tr>
<td>Group of 17 Burgesses</td>
<td>£495</td>
<td>1351</td>
<td>Defence of English lands in France</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>£1,027 13s 4d</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: TNA, E 401/383; E 401/388; E 401/407.

A study of these financiers reveals that they were drawn from Bristol’s governing elite. Robert Gyen was the mayor, bailiff and MP before he made three separate contributions worth £466. John Horncastle and John Wycombe, both prominent civic officials, forwarded two loans each worth a total of £40 and £46 respectively. But perhaps the most unusual

367 TNA, C 81/1710/53.
contribution was Juliana Turtle’s loan of £26 in 1347. Juliana was the wife of Roger Turtle, one of Bristol’s wealthiest residents. During the early 1300s, Turtle was the mayor, bailiff, customs collector and MP for the town. He regularly attended merchant assemblies and lent £66 to the 1346 Normandy campaign. However, by 1347 he had grown disillusioned with the Crown’s persistent requests for money. He ignored a royal writ requesting his attendance at a council meeting and his wife was thus forced to make a loan on his behalf.368

Given the fiscal pressure on Edward III’s administration, it is unsurprising that these loans were very rarely repaid directly in cash from the Exchequer. The Issue Rolls record details of all money paid out of the Exchequer and provide an accurate overview of royal expenses. However, there are no instances in these documents whereby any of the Bristol and Norwich loans were repaid in such a manner. Instead, Edward III preferred to reimburse loans from the customs. For example, the Crown issued tallies to the Norwich elite immediately after they lodged a loan worth £666 13s 4d in 1351. They were instructed to present these tallies at any port throughout the realm where the customs officials would subsequently reimburse them from the ‘customs and subsidies of wool, hides and wool-fells’.369 The 17 Bristol burgesses who provided £495 in the same year were also issued with identical tallies granting them assignments from the customs. This policy added a further level of security for the merchants and encouraged them to provide loans as they could be relatively confident of receiving prompt reimbursement. Furthermore, this may also explain why Bristol merchants, unlike their Norwich counterparts, forwarded personal loans. Bristol was a customs town and the merchants could therefore receive repayment without having to lobby the Crown at Westminster or travel to other neighbouring ports. During the early 1350s, Edward III employed two Bristol merchants, John Cobyndon and Walter Frompton, to the customs administration within the town.370 Cobyndon provided loans in 1347 (£10) and 1351 (£20), with Frompton also contributing £13 in 1351. Both merchants provided generous personal loans because they could effectively reimburse themselves from the customs. But from the perspective of the wider Bristol community, the appointment of two local merchants to the customs administration was a further statement from the Crown that their loans would be repaid. Norwich, however, was not a permanent customs location. Therefore, burgesses who provided personal loans were forced to seek repayment from neighbouring ports, the closest of which was Yarmouth. The competition between the two towns may have discouraged Norwich merchants from forwarding individual loans because their local rival may have obstructed their repayment. In addition to assignment from the customs, Edward III also reimbursed towns by granting them new charters or through temporary reductions in their fee farm and taxation payments. Bristol received a charter in 1347 and Norwich did likewise in 1337 and 1345, years in which both towns lent money or wool to the French war.

A closer inspection of the Bristol and Norwich financiers reveals that many were already employed by the Crown long before they provided loans. Before he lent £66 in 1345, Roger Turtle of Bristol had been appointed as a customs collector, a Justice of the Peace, and a tax collector. Robert Gyen provided three loans worth £466, but he had already served as a Justice of the Peace, a water bailiff and the deputy to the king’s butler. Other Bristolians such as John le Spicer, John Wycombe, Thomas Albon, John Axebridge, John Horncastle, John Neel, Philip Thorynton and Thomas Tropyn were employed as royal officials throughout the 1330s and 1340s. All these individuals subsequently provided loans for the defence of the kingdom. A study of the Norwich financiers reveals similar conclusions. Edward III employed William Butt the Younger as a customs collector and a commissioner in 1335. Both Butt and Thomas de la Rokele, another royal financier, played a pivotal role in the management of the wool scheme in East Anglia in 1337. The king appointed Roger Hardegray to a commission in 1343 to investigate claims that merchants were smuggling

368 CCR, 1346-49, p. 360.
369 CPR, 1350-54, pp 142-43.
wool. Edmund Cosyn also contributed to Norwich’s loan in 1340, but he had been previously employed as a commissioner in 1338.

The emergence of the Edwardian ‘war state’ was fundamental to the evolution of Crown-town relations and royal finance in pre-Black Death England. It created new opportunities for burgesses to rise in royal favour and experience greater influence on the national stage. The Crown’s preoccupation with military concerns placed intense pressure on the royal officials who dispensed justice throughout the realm. By the late 1330s, they were assigned duties associated with the conflict in France and their positions in the localities were vacant. Edward III thus relied on burgesses to serve as commissioners and fulfil the previous responsibilities of the Crown officials. Edward III’s disastrous financial situation in the 1340s required him to develop his father’s policy of requesting urban loans. However, contemporary legal doctrine prohibited kings from coercing their subjects to provide such fiscal aid. Instead, Edward III placed pressure or leverage on them to do so. Essentially, many townsmen were faced with an ultimatum in the 1340s: either lend money to the king or risk losing their royal positions. In the end, they decided that it was in their best interests to support the French campaigns and suffer a short-term financial loss. Only Robert Bumpstead junior of Norwich and John Torrington of Bristol refused, both of whom were not subsequently employed by the Crown. The early stages of Edward III’s reign marked a transformation in Crown-town relations and the growth of government. The king actively promoted the urban elite and included them in national government. But the king was also extremely calculating and canny in his approach towards towns. Edward III exploited his ties with leading burgesses and used their positions as leverage to force them to support his campaigns in France.
Exploring the shipman’s basket of goods: using history and economics to understand our medieval maritime communities

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Supervisors: Dr Craig Lambert, Dr Helen Paul & Professor Chris Woolgar

During the fourteenth century, England’s seafarers formed the backbone of the country. Without the complex trade networks that English seafarers created, England would have been completely cut off. This makes seafarers an important aspect of medieval English life, and yet apart from research by Maryanne Kowaleski, Craig Lambert and Andrew Ayton, there has been very little work done on this occupational group.

As a whole, this project explores this group by comparing known mariners identified in foundational records to the names of mariners recorded in tax data. Numerous foundation records were used, including navy payrolls taken from the Exchequer, which record the wartime requisitioning and payment of merchant ships; and custom accounts taken from the Chancery, which record charges on maritime trade. These records often give the name of the ship in question, its homeport, and its shipmaster. These pieces of information allow connections to be made with the tax records. This method of matching has proved successful in previous studies. These studies have focused on the comparison of tax data, based on levels of moveable wealth, with records relating to naval and maritime commercial activity. While these studies do make large strides in analysing the socio-economics of fourteenth century seafarers, they do not use a basket of consumables to do so, which is what will set this paper apart. A basket of consumables and services is defined as ‘a hypothetical group of different items, with specified quantities of each one meant to represent a “typical” set of consumer purchases, used as a basis for calculating how the price level changes over time’. The hope is that this article will begin the process of evaluating seafarers’ standard of living, much like Christopher Dyer, John Hatcher, and Mark Bailey did for other occupational groups.

Arguably, the three most significant events of the fourteenth century were: the Great Famine at the beginning of the century, the onset of the Hundred Years War in 1337, and The Black Death through the middle of the century. My research aims to discover the socio-economic impact of these events on seafarers as a whole. Existing research by David L. Farmer, as well as Henry Phelps Brown and Sheila Hopkins, has examined the effect of the Black Death upon the real incomes and living standards of peasants and builders. This paper will use the Phelps Brown/Hopkins (PBH) basket of consumables, for reasons outlined below, to examine the average purchasing power of shipmasters and mariners.

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Academics such as Dyer\textsuperscript{374} have suggested that the estimated cost of the PBH basket of consumables is too high during the middle ages. Phelps Brown and Hopkins built their basket of consumables from the accounts of priests during this period. Dyer, while agreeing with this logic, raises issue with the fact that: ‘two priests with an income approaching £20 were a good deal wealthier than any craftsman. They paid no rent, and their household contained a single servant, not a wife and a brood of hungry children’.\textsuperscript{375} He further explains his caution by considering the priests’ diet as compared to craftsmen:

If we assess their diet in terms of the ratio between cereal products (bread, pottage and ale) and other foods (companagium, that which goes with bread) we arrive at a figure of 55:45, whereas building craftsmen in the fifteenth century received from their employers diets with a ratio of 60:40, and earlier the figures were probably nearer to 70:30.\textsuperscript{376}

Farmer’s basket, on the other hand, seems to have been well received, though underused and neglected.\textsuperscript{377} For the fourteenth century, Farmer’s data might be the better choice if just looking at source material, as he uses documents from all across the country (or at least south of the Severn and the Wash).\textsuperscript{378} However, the PBH basket has data for each year of the fourteenth century, making it ideal for tracking changes in the purchasing power and real wages of shipmasters. With Dyer’s concerns in mind, it was important to determine by how much this basket over estimated, by comparing it to another basket of consumables created by Farmer.\textsuperscript{379} It was thought that Farmer’s basket would be far less expensive than Phelps Brown and Hopkins’, however, it was instead found that the PBH basket is on average lower than the Farmer basket (figure 1).

Since the PBH Index was calculated year to year and the Farmer basket of consumables was calculated as decadal averages, it was essential to compare both indexes on the same scale. This required not only finding decadal averages for the PBH Index, but also converting the Farmer basket into the same index as Phelps Brown and Hopkins.

\textsuperscript{374} Dyer, p. 220.
\textsuperscript{375} Dyer, p. 220.
\textsuperscript{376} Dyer, p. 220.
\textsuperscript{379} Farmer, III, p. 447.
Phelps Brown and Hopkins calculated their basket of consumables as an index, to better compare it to the real wages of builders, and so the same approach has been taken for the Farmer basket. In the Phelps-Brown/Hopkins Index, the years 1451-75 were averaged, and the rest of the data was normalized against this period; the years 1451-75 were determined to be the most stable. To do the same for Farmer’s data first required the average from 1451-75. To find this, the decadal cost of the basket (converted from shillings to pence) was plotted on a graph from Farmer’s data in four different ways. This ensured that where each point was plotted within its decade did not affect the final outcome. Therefore, each data point was plotted at the beginning of the decade, the middle of the decade, and the end of the decade; the overall average from 1450-80 was also calculated. For these three methods, a linear equation was used to generate a value for the years in between each point. For example, from 1435-65 the equation found is:

\[ y = -2.6x + 4145.2 \]

and from 1465-95 the equation found is:

\[ y = -0.568x + 1168.4 \]

with ‘x’ being the year in question and ‘y’ being the value of the basket. Through the use of these equations, a value was determined for each of the years between 1451 and 1475, and through these an average value for the period was calculated. These were: 322.37 d. for the beginning, 320.31 d. for the middle, 318.99 d. for the end, and 319.20 d. for the overall average of 1450-80. Calculating the 1451-75 average in these different ways allowed more certainty when converting Farmer’s data to an index to compare it against the PBH Index. From the values above, it is clear that there is little difference between the various methods used. The ‘middle’ average was used, as this value lies within the range of the other calculated averages.

This idea was explored further by testing the sensitivity of the final index values to the average value used. It was not until a 10 per cent change in the 1451-75 average used that the Farmer basket index ever dipped below the PBH Index (figure 2). Farmer’s original data only shows a 10 per cent variation in total across the period, and so it is unlikely that the index values calculated would off by more than 10 per cent.

Figure 2: Farmer Index calculated with 5% and 10% errors concerning the 1451-75 average used. These are compared to the Phelps Brown/Hopkins Index

Figure 1 shows that the calculated index for the Farmer basket was actually higher than the PBH basket index. This goes against the expected outcome; as highlighted above, the PBH basket has often been thought to be over-expensive. The difference between the two indexes is not great, however, and the two indexes track each other well, suggesting that both indexes reflect real changes. Though the data has a low resolution, the two broad peaks reflected by both indexes roughly coincide with the Great Famine and Black Death, and the minimum between these peaks occurs just after the start of the Hundred Years War. The PBH basket has data from every year of the century, rather than the decadal averages that Farmer uses. Being able to track changes in the real wages from year to year, rather than over a decade, is more beneficial for this study, which is why the PBH index is used.

Using the real wage information for builders and labourers provided by PBH, the original prices of the basket were calculated for each year. This in turn allowed real wage data to be determined for shipmasters and mariners (figures 3a & 3b). The basket of consumables price was found by taking the wage amount and dividing it by the builders’ real wage index. For example, in 1304 builders were paid 3.5 d. per day and the builders’ real wage index value is 62; therefore:

\[
\left( \frac{3.5\text{ d.}}{62} \right) \times 100 = 5.65 \text{ d.}
\]

Once the monetary cost of the basket had been calculated, the real wage index values for shipmasters and mariners could be found by normalizing their wage data against the price of the basket. For example, in 1304, mariners were paid 6 d. per day, and so their real wage for this year could be calculated as follows:

\[
\left( \frac{6\text{ d.}}{6.65 \text{ d.}} \right) \times 100 = 106.
\]

Figures 3a and 3b compare the real wages of builders, labourers, shipmasters, and mariners to contrast their purchasing power throughout the fourteenth century. These are plotted against the yearly PBH Index in figure 3a, while in figure 3b the periods in which shipmasters earned more than the basket cost are depicted by the filled in areas. Shaded bars reflect from left to right: the Great Famine, the start of the Hundred Years War, and the Black Death.

Figure 3a
The results of this analysis are interesting. It can be seen in figures 3a and 3b that, overall, those living in the middle ages did not have much in the way of disposable income; neither mariners, labourers, nor builders were ever paid enough to meet the needs of the basket of consumables. Shipmasters, on the other hand, were sometimes paid enough to not only buy the items in the basket, but to also have some money left over, as shown in figure 3b. Bailey questions whether or not the trends seen after the Black Death actually began in the years leading up to it. While this article only brushes the surface of what can be explored here, even a cursory glance shows that shipmasters’ purchasing power was beginning to grow stronger in the years leading up to the Black Death, rather than as a response to it.

There were two periods where the disparity between purchasing power and the price of a basket is seen clearly: the Great Famine of 1315-20, and the Black Death (which began in 1348 and did not fully abate until 1371). Both of these periods appear to act as great levellers, as shipmasters’ purchasing power was severely diminished, bringing them closer to the builders, mariners, and labourers. One explanation for this might be that those who were poor could only lose so much purchasing power, while those who were richer had much more to lose when their money could not get them as far (figure 4). After the Famine, the price of wheat sky-rocketed, severely and suddenly slashing purchasing power. The same thing happens after the Black Death: while wages went up, so did the cost of food. This is something, however, which requires further study. Furthermore, there is a period of consistently high prosperity for shipmasters from 1338-47, which correlates to the start of the Hundred Years War. This period shows the peak of shipmaster purchasing power. When comparing the effects of the Great Famine and Black Death, it is interesting that while the impact of the Black Death lasts for longer, the decline in real wages during the Great Famine actually has a higher magnitude.

Bailey, p. 223.
Figure 4: Differences in purchasing power between shipmasters and other occupations

Figure 4 depicts the changing relationship between shipmasters’ real wages and other occupations. This shows how much difference there was in a given year between shipmasters, builders, labourers, and mariners.

There is more to be said about this information than can fit within this paper, but this has been intended as a precursory search into this information. Despite the assumed outcome of the comparison between the PBH basket and Farmer’s basket, the Phelps Brown and Hopkins basket consistently plotted lower than that of Farmer. With both indexes matching well over the fourteenth century, they both have their merits and are equally viable. Going into this study, it was expected that builders and shipmasters would be on the same socio-economic level; however, using the Phelps Brown and Hopkins index to reconstruct real wages revealed that shipmasters were considerably better off than builders, mariners, and labourers. On the other hand, it appears that shipmasters were affected relatively worse than the other occupations during the Great Famine and the Black Death. Furthermore, from the period between the start of the Hundred Years War through to the start of the Black Death show that both shipmasters and mariners benefited from the war, with shipmasters’ purchasing power reaching its peak through the whole century and mariners earning as much as builders only during this period.

On the whole, little work has been done on shipmasters and mariners in the fourteenth century, particularly concerning their socio-economic status in the general community when linked with real wages and standards of living. It is therefore essential to continue this work by comparing shipmasters and mariners to other members of society, in order to gain a better perspective of their place. Do shipmasters only appear to be rich when compared to builders, labourers, and mariners? Or are they actually in the middle of the socio-economic hierarchy? This can be examined through comparisons to Dyer’s work on standards of living in the middle ages. Furthermore, it would be interesting to see whether the purchasing power of other societal groups, on the same level as shipmasters or higher, felt the economic pressures of the Great Famine and the Black Death, as it appears shipmasters did.
Works cited


A revolt of class struggle? Reflections on the causes of the 1381 Peasants’ Revolt

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The 1381 Peasants’ Revolt has been long placed among the most dramatic episodes in the history of medieval England. However, its causes remain matters of controversy. Although highly contested, the weight of historical scholarship since the nineteenth century suggests that it was the strained hostile relationship between peasants and landlords that was the most important factor underlying the outbreak of the revolt. In this prevailing view, in spite of favourable economic conditions for peasants and labourers created after the Black Death by a scarcity of labour and an abundance of land, traditional serfdom and seigniorial rule still loomed large in the three decades prior to the revolt. The landless class suffered intensified oppression from the landed and their attempts to improve their economic and legal status met with little success. Nineteenth-century historians first developed this conceptualization, exemplified in Thorold Rogers’s argument that the cause of the revolt was ‘the incidents of villeinage, and the dissatisfaction felt at revived oppression’. 382

In more recent decades this interpretation of the revolt has been enhanced largely through the efforts of a group of historians commonly labelled as the ‘Birmingham School’. Rodney Hilton, a notable historian of Marxist persuasion maintained that antagonism and conflict between the ruling landed class and the ruled peasantry was exacerbated by the lords’ oppressive reaction during the three decades after the Black Death and accounted for the open revolt in 1381, and summarized his position by pronouncing that ‘judging both by [the rebels’] actions and their demands it was serfdom and those things that flowed from it which baulked largest in their grievances’. 383 Although recent members of the ‘Birmingham School’ have been somewhat more restrained in their pronouncements, their belief in the importance of serfdom and the class struggle between landlords and serfs has remained staunch. Christopher Dyer’s studies of the rural risings in the counties of Essex, Hertford, Kent and Suffolk, for instance, painted a picture of lord-tenant tension between c.1350 and 1381. He attached great importance to serfdom and seigniorial oppression as a major cause of the revolt despite listing other causes, such as the dissatisfaction with the government and the grievances incurred by frequent taxation and unsuccessful wars. He concluded that ‘out of the diversity of (rebels’) motives […] emerged ideas and actions hostile not just to serfdom and servile tenures, but also the very existence of lordship’. 384

Herbert Eiden’s studies on the local revolts in Essex, Kent, Suffolk and Norfolk, adopted a similar approach to Dyer’s and reached an almost identical conclusion that the rebels’ grievances ‘had a common target: unjust and bad exercise of lordship on the manorial, communal and governmental level […] (which) cannot be distinguished – or even separated – from the expression of discontent in London’. 385 This paper, based on a study of the uniquely comprehensive series of records of the revolt in Cambridgeshire and the Isle of Ely, aims to challenge the dominant narrative elaborated above and suggest that the revolt was caused by a wide miscellany of interconnected factors with a special emphasis on the importance of political issues and that there is a much less significant and direct causal link than is

commonly thought between serfdom or the so-called ‘seigneurial reaction’ and the revolt.

The revolt in Cambridgeshire and the Isle of Ely was an intense but relatively brief affair. It principally spanned just two weeks with the great bulk of the action taking place in mid-June. The earliest recorded outbreak of violence was on 9th June at Cottenham and the revolt reached its peak on 15th and 16th June with substantial and widespread violence in the whole region. But thereafter the disorder began to decline rapidly as a force led by Henry le Despenser, Bishop of Norwich, came to the county. Bishop Henry, the principal suppressor of the revolt in East Anglia, pushed on to Cambridge, probably on 18th June, and restored order there successfully. The collapse of the revolt here was quickly followed by the end of uprisings and riots in other parts of the region.

Table 1: Rebellion and disorder in Cambridgeshire and the Isle of Ely

<table>
<thead>
<tr>
<th>Incidents</th>
<th>Named Rebels</th>
<th>Victims Institutions</th>
<th>Victims People/households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambridgeshire</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>56</td>
<td>224</td>
<td></td>
</tr>
<tr>
<td>Cambridge</td>
<td>14</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Newmarket</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Royston</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>No info. on location</td>
<td>0</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Isle of Ely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>6</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>Ely</td>
<td>6</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>85</td>
<td>365</td>
<td>9*</td>
</tr>
</tbody>
</table>

Relevant sources from all surviving archives have been grouped together to provide the most precise information on the central themes of the revolt. As can be seen in table 1, there were 85 violent incidents, 365 named rebels and 56 named victims. With incidents spread over large areas of the shire, Cambridgeshire and the Isle of Ely clearly suffered great turmoil and disorder in mid-June 1381. Figure 1 reveals that the course of the revolt was characterized by an extreme concentration of violence in mid-June, in particular the three days of the 15th, 16th and 17th. The distribution of the places known to have been affected by the revolt is vividly exhibited in map 1. Although it reveals no definitive geographical pattern we can observe a concentration of rebellion in the areas of south-west and north-east Cambridgeshire and the south of the Isle of Ely.

Figure 1: Chronological distribution of incidents
Map 1: *Violent Incidents in Cambridgeshire and the Isle of Ely in 1381*

In the course of the disorder the rebels committed a variety of violent acts and the major forms of their malefactions are presented in table 2, which provides a quantified overview of a total of 85 violent incidents and 56 victims. The different forms of violent acts can be also ranked in importance according to the frequency of their occurrence. It is immediately apparent that the destruction and looting of property estates were by far the most prevalent transgressions, followed by extortion and personal injury, whereas all other forms of offences, including killings and the destruction of documents were surprisingly rare.

**Table 2: Forms of violent acts**

<table>
<thead>
<tr>
<th></th>
<th>Destroying documents</th>
<th>Damaging property and looting</th>
<th>Personal violence</th>
<th>Extortion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Manorial Court Rolls</td>
<td>Other institutional documents</td>
<td>Damaging property</td>
<td>Looting</td>
</tr>
<tr>
<td>Number of occurrences</td>
<td>5</td>
<td>3</td>
<td>27</td>
<td>50</td>
</tr>
<tr>
<td>% of all violent incidents</td>
<td>5.90%</td>
<td>3.50%</td>
<td>31.80%</td>
<td>58.80%</td>
</tr>
<tr>
<td>Number of occurrences</td>
<td>8</td>
<td>58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of all violent incident</td>
<td>9.40%</td>
<td>68.20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of victims</td>
<td>4</td>
<td>3</td>
<td>17</td>
<td>30</td>
</tr>
<tr>
<td>% of all victims</td>
<td>7.10%</td>
<td>5.40%</td>
<td>30.40%</td>
<td>53.60%</td>
</tr>
</tbody>
</table>
As elaborated above, the dominant explanatory model of the 1381 English Revolt emphasizes deep-seated and longstanding social conflict in medieval society and stresses that the grievances behind the uprising, although complex and diverse, represented the general hostility of the commons to the rule of the whole landed class. These generalizations, however widely-shared, rest on relatively shallow empirical foundations as in the studies that promote them there is an absence of a comprehensive and quantitative study of the targets of the rebels. By contrary, this paper, based on a wide range of sources, provides an in-depth analysis of the background of all the victims of the revolt in Cambridgeshire and the Isle of Ely, showing that, overwhelmingly, they were not attacked simply because they were landlords or because they were rich. In fact, if the actions of the rebels are taken to indicate their motives, then serfdom, seigniorial oppression and crude class warfare were of little consequence.

The largest category of victims consists of 22 individuals who held various types of official position before June 1381, ranging from sheriff (4), Member of Parliament (4), justice or juror at the commission of the peace (9), royal escheator (2), royal bailiff (1), and poll-tax collector (17). Local office-holders, who often held more than one position, not only comprised 39.3 per cent of all victims but were the subject of 55.3 per cent of all acts of violence. Such a high proportion of violent actions against these office-holders clearly reflects widespread popular grievances against them, and an investigation of the positions they had undertaken sheds a piercing light on the origins of the dissatisfaction. Two functions in particular were prominent – tax collection and commission of the peace: of the total 22 persons, 17 had been tax-collectors and 9 justices or jurors of the peace. The vital importance of these two activities as the root-cause of so much intense public grievances accords with the general history of pre-1381 England, as central government implemented a series of unpopular and often oppressive policies on the commons in the third quarter of the fourteenth century, including frequent and novel taxation and the enforcement of laws designed to hold down wages which were strengthened in the decade before the revolt.

Despite the prominence of corporate landlords in the county, only nine institutions can be identified as having been subjected to attacks. These institutions and their affiliations comprised 25 per cent of total victims in Cambridgeshire, and suffered 23 separate attacks, which accounted for 27.2 per cent of total violent incidents. Evidence shows that the vast majority of these corporate victims were concentrated in the two towns of Cambridge and Ely and that the violent confrontations there largely derived from preceding local conflicts. For instance, the University of Cambridge and its associated bodies and staff were subject to the attack of a large flock of rebellious townsfolk in Cambridge. Indeed the university’s bad relationship with the townsfolk was long-standing and deep-rooted, and similar conflicts had flared up many times before the revolt. The resentment among the townsfolk appears to focus on the extensive privileges that the university enjoyed in the town which was demonstrated in the rising when the university’s charters and documents were burned and its masters and fellows were forced to agree to new terms with far more restricted powers.386 The major causes of the revolt in the town of Ely bear a close resemblance to those that fuelled the rising in Cambridge in that the wrath of the townsfolk was directed against institutions, in this case the abbey and bishopric that exercised power over them and curtailed their independence.387 As for the remaining victims, their characters and careers and the underlying reasons behind their targeting cannot be conclusively established due to an absence of evidence, but it is still possible to make some tentative observations. As in similar risings in different places and times in history, the breakdown of law and order led to many criminal acts that were unconnected with the higher aims of the movement. Despite the small number of episodes whose causes cannot be firmly established, it has been shown that in the vast majority of

386 TNA JUST 1/103, m. 4d, 5, 5d, 6, 6d, 8d, 9; Rot. Parl. iii, 108.
387 TNA JUST 1/103, m. 10, 11, 11d.
cases, including all of the most important, the motives of the rebels’ actions can be clearly discerned. It is shown that the Cambridgeshire rebels and rioters were driven by a wide range of motives, including antagonism towards both national and local government policies, longstanding animosity driven by preceding local disputes or conflicts as well as grievances against seigniorial lords. However, setting aside the risings in Cambridge and Ely, which are best seen as episodes in the longstanding struggles of burgesses to throw off restraints, one of the most striking findings to emerge from a comprehensive statistical analysis of the victims and of the actions of the rebels in the region is the scarcity of attacks on the great landowners for their oppressive seigneurialism and the relative insignificance of serfdom as a motive for violence. To be specific, only five incidents of violent acts can be related to manorial rule and in total they touched only three landlords, namely the bishopric of Ely, the priory of Ely and the prioress of Ickleton, who together constituted a tiny proportion of Cambridgeshire’s landlords and a small minority of the total victims. Even though Cambridgeshire was a highly manorialized county containing a number of the great landowners who have traditionally been viewed as being heavily oppressive towards their peasants, only the church of Ely experienced serious unrest amongst its tenants, whereas the rest of those great seigneurs, in particular ecclesiastical ones such as Ramsey Abbey and Crowland Abbey were not subject to any attacks from the tenants of their estates in the region. This general observation echoes the view of two early historians, who argues that in Cambridgeshire ‘the revolt was neither against the religious bodies nor the landed classes’.388

Instead the political grievances of rebels stand out as a dominant motive and are exhibited starkly by the activities of ringleaders. The most notable and notorious ringleader in the county was John Hanchach. As shown in map 2, he marched very long distances during the revolt with his band, carrying out attacks on at least 12 targets at 11 places.389 The vast majority of those victimized at his hands had serious levels of political involvement, including John Sible, Thomas Haselden, Edmund Walsingham to name just a few. Moreover, it is pertinent that this great agitator was himself an affluent free landholder.390 Curiously all the incidents which Hanchach instigated occurred at localities other than his native village. Why did an affluent man march far away to go after lords with whom he seemed to have no direct relationship? All the clues lead towards a conclusion that his rebellious activities were primarily simply motivated by strong political grievances. A similar pattern can be identified in the actions of several other itinerant rebel leaders, such as John Saffrey, John Cook and Geoffrey Cobbe, whose marching routes are also shown in the map. A noticeable feature of these three rebel leaders is their targeting of political figures and their high economic and social standing within local peasant communities that they can all be identified as free peasants holding sizeable wealth.391

389 TNA JUST 1/103, m. 3, 4, 5, 5d, 6d; CP 40/493, m. 314; CP 40/503, m. 312d.
390 TNA E 357/8, m. 27.
A study of what the rebels actually did and to whom in the revolt of Cambridgeshire and the Isle of Ely clearly shows the diversity of their motives and aims, among which political antagonism stands out as the primary unifying theme and there are no reasons to believe that the attacks were generally directed towards serfdom or manorial lordship. These findings are in stark contrast to those drawn from other studies on local revolts and prevailing interpretations of the Peasants’ Revolt of 1381 in general. The ‘bad lordship’ of which contemporaries and historians complained is better expressed as ‘bad government’, at both a national and a local level, and the ire of the peasantry as directed not primarily against bad manorial lords and serfdom but against unpopular government officials and servants. As Michael de la Pole, the new Chancellor of England, stated in his address to the Parliament which met at Westminster in October 1383: ‘the acts of disobedience and rebellion … towards the lesser servants of the king, such as the sheriffs, escheators, collectors of the subsidies and others of the same type, were the source and chief cause of the treasonable insurrection … This insurrection … was firstly a rebellion against the said lesser servants, then against the great officers of the kingdom and finally against the king himself’. \(^{392}\)

Land securities and industrial finance in seventeenth-century West Country: a new use of probate records

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England’s early shift from primary to secondary and tertiary sectors and its significance for modern sustained economic change is now widely recognized (Thirsk, 1978; Broadberry, 2013; Shaw-Taylor et al., 2014). The critical shift from agriculture to manufacturing, the evidence now seems decisive, took place over the course of the seventeenth century (Shaw-Taylor et al., 2014). Important as it is, much of this new research has been descriptive and shows the shape rather than mechanisms of economic change, i.e. it shows that the change occurred from agriculture to manufacturing prior to 1700 but not how it took place in the first instance.

I focus on financial and legal mechanisms. By targeting a specific class of middlemen and entrepreneurs, and by making a novel use of their probate data, I provide quantitative evidence on the financial and legal mechanisms behind the shift away from agriculture to manufacturing. The resulting evidence shows the decisive importance of low quality, land-based credit instruments such as chattel leases, conveyances, and tripartite leases in spurring industrial activity in the region. It further shows that, contrary to suggestions of ‘negative feedback’ in pre-industrial manufacturing (Mokyr, 1999), the increase in total capital stock of the West Country clothiers points towards a slower but sustained growth based on a positive feedback between land rents and manufacturing profits. To the best of my knowledge, this is the first use of probate data to aggregate the manufacturing and financial capital of a specific class of middlemen and industrial employers in order to estimate the scale as well as the mechanism of the shift away from agriculture to industry.

While the need for examining the financial sources of manufacturing has been previously flagged, and the link between industrial finance and land mortgage has been studied for the classic period of industrialization (Crouzet, 1962; Hudson, 1986), the finance of industrial activity for the seventeenth century remains virtually unknown. This is surprising given the vast non-quantitative studies of agricultural improvement and increase in rent incomes in the seventeenth century (studies on the circle of Samuel Hartlib, for example).

Historical background

Alderman Cockayne’s project is a well-known episode of policy failure in English economic history (Friis, 1927). In 1614, James I was faced with a fiscal crisis. To raise Crown revenues, he was advised by an important government debt-holder and City of London merchant, William Cockayne. Cockayne’s main business was exporting textiles to the Baltic and importing munitions from Hamburg. He advised James to raise customs revenue by banning export of all undyed textiles and start up a native dyeing industry. If the English manufacturers could dye textiles within England, the argument went, they could cut out the middlemen in Amsterdam and Antwerp and sell their product at a cheaper price directly in the European/Mediterranean markets. Increase in market size would then lead to increase in customs revenue and industrial employment. Faced with a fiscal crisis, James agreed. An act of Parliament was issued in 1614 to ban export of undyed textiles. The results were disastrous. The Netherlands and France responded by declaring an embargo on all English textiles. Widespread unemployment ensued in the manufacturing districts of England from 1619 onwards. English clothiers and dyers lacked the necessary knowledge, skills, and

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393 ‘West Country’ includes three counties of Wiltshire, Gloucestershire, and Somerset. Most textile manufacturing was located along the Bristol Avon which traverses these three counties.
workforce to create an indigenous dyeing industry. Textile manufacturing in formerly important regions, such as the Weald of Kent, never recovered from the impact of embargo (Zell, 1994).

One area that suffered initially but ultimately responded successfully to this depression was the Avon valley in the West Country. The textile entrepreneurs of this area – whose probates I analyse here – responded by manufacturing a new type of luxury item specific to the West Country called ‘Spanish Medley’, or ‘Fine Spanish’ (Mann, 1971). This was likely an imitation of the kind of luxury product already being made in Rouen, but it did require learning new skills and working with new material. Using merino wool, cochineal, indigo and other tropical dyes, the clothiers created a luxury woollen fabric to compete with silk and cotton velvets. It competed successfully in the European markets from the 1640s onward. Regional specialization paid off for the textile industry. Along with such increase in light worsted manufacture in Yorkshire, the success of Spanish cloth from the West Country contributed to the national recovery of the textile industry as well as paving the way to industrialization.

Sources, data construction, and methodology

This paper is based on a new sample of 255 probate inventories of West Country textile entrepreneurs collected, transcribed, and entered by the author. It covers the period 1600-1730. The probate dataset used here is part of a larger database of seventeenth-century manufacturers/financiers that I am currently constructing. To make the sample more representative, I combine the PCC inventories of wealthier clothiers filed in London with the inventories approved locally by the diocesan clerks.394

Probate inventories have been used to estimate agricultural productivity (Thirsk, 1978; Overton, 1979, 1984; Allen, 1998; Overton & Campbell, 1994), consumer behaviour (Shammas, 1990), material culture (Bermingham & Brewer, 1995; Karababa, 2012), indebtedness (Muldrew, 1998; Ogilvie, 2012), and pre-industrial credit networks (Muldrew, 1998). I use probate data in a new way. I exploit probate inventories as a source for analysing financial and manufacturing capital owned by the same individuals. The motivation is to aggregate micro-level data on total capital stock of clothiers and construct a statistically convincing picture of macro-economic change in the West Country.395 A general misconception about probates is that they do not provide evidence on land ownership. This is not entirely true. Since the chattel lease – the physical paper which provided the legal evidence of interest in land or land based assets such cash crops and coal – was technically a moveable estate, it was listed in the probate inventories.

Using probates in this fashion has a distinct advantage over other sources. Hearth tax records, for example, can be used to estimate the overall increase in industrial activity, but they do not show any mechanisms through which economic change might have occurred. Besides, they are not relevant for the main manufacturing section of the period: textiles. Unlike household goods that were usually valued in aggregate form (the entire contents of the kitchen, for example), the working capital employed by my sample of clothiers was valued at the individual level. The total amount and type of wool, yarn, cloth at the mill, and the value of stock in London, Amsterdam or Smyrna markets is listed individually in the probates.

To do an OLS regression, I construct four variables. The independent variables I construct include total capital in circulation, loans and bonds due to the individual, cash and plate at disposal at the time of death, and the value of annual rent income from chattel lease. The main variable of interest is annual rent income in the form of chattel lease. This is based on the assumption that, among other things, clothiers used rent income from chattel mortgage

394 Clothiers were identified from the Prerogative Court of Canterbury wills in The National Archives, PROB 11. The PCC inventories themselves are scattered throughout the PROB classification. For the diocesan records, I have used Wiltshire and Swindon Record Office (Chippenham) and Hertfordshire Record Office.
to finance their manufacturing operations. The variable ‘Manufacturing Capital’ has been constructed by adding the value of total wool, yarn, and finished products sitting in distant markets like London, Amsterdam and Izmir. I run an OLS regression for fixed annual rent income, amount of debts owed to the individual, and his total capital in circulation.

The purpose of this statistical analysis is twofold. Firstly, it shows that there was a class of entrepreneurs simultaneously involved in local manufacturing, finance and agriculture in the Bristol Avon between 1660 and 1730. If we are to understand the shift from agriculture to manufacturing in the Avon valley, we can do so by aggregating the financial, manufacturing and other working capital. Second, it shows that they benefited from a positive feedback mechanism between annual rent income and profits from the textiles manufacturing. The effects of rent income on total estate values are clear. The OLS regression exercise here, of course, should be treated with caution; but the general upward trend within a relatively small group of entrepreneurs is hard to deny. The wealthier families were wealthier by a factor of five to ten relative to the median value of probates (£290.00).

**Change in probate values over time**

Figure 1 shows a general trend in total estate values of the sample between 1600 and 1740. Since probate inventories record wealth at the time of death, the period preceding the death – twenty to thirty years – should be taken as the actual period in which manufacturing activity and chattel rents increased and wealth accumulation took place. By this measure, the period 1640-60 should be considered the crucial period of transition from agriculture to manufacturing in the Avon valley. The upward trend in probate values – in line with other studies of English probates during this time – accelerated after 1660.

![Figure 1: Total value of clothier probates in West Country (£)](image)

All values, for both graphs, are nominal pounds sterling as they appear in the probates.
The same upward trend (figure 2) can be seen in the value of chattel leases and manufacturing capital. The annual value of land securities amongst clothiers expanded significantly between the 1620s and 1680s, declined in the 1690s, and remained low after 1700. Lack of data on chattel leases before the 1640s suggests that clothiers who died between 1620 and 1660, a time of depression in England’s export trade, did not have significant land rents. Still, the above trend lines suggest a strikingly strong correlation between increase in innovative financial techniques and increase in industrial activity during this period.

**Estimation:**

I estimate the causal effects of total manufacturing and financial capital stock on the total estate values of textile manufacturers. The baseline specification is as follows:

\[
Y_{wealth} = \beta_0 + \beta_{mancap} + \beta_{chattel} + \beta_{cash} + \beta_{bonds} + \epsilon
\]

The model controls for all financial and manufacturing capital available to the individuals at the time of their death. \(Y_{wealth}\) is the total probate value, including all household items, land rents, horses, waggons, manufacturing capital, bonds, cash, and various financial instruments. \(\beta_{mancap}\) is the total value of wool, yarn, dyes, and finished stock sitting in London, Amsterdam or Antwerp. The main variable of interest is \(\beta_{chattel}\), the chattel lease, a security interest underwritten by assets such as a cash crops, coal mines, or mortgage of a house. The model is somewhat simplistic OLS and should be treated with caution. Still, as table 1 shows, it does capture a significant portion of capital stock available to these clothiers. It would certainly benefit from testing a suitable IV effect such as distance to navigable rivers.

**Main findings**

Table 1 shows the OLS results for effect of manufacturing and financial capital stock on the total moveable estate and the probit results for marginal effects. Column 1 controls for value of bonds, cash and plate owned by the entrepreneur at the time of his death. Column 2 only controls for circulating capital and chattel rent. The probit column estimates the marginal effects of being local gentry, with £200 as a cut-off point for the gentry status.
Table 1: OLS Estimates of the effects of manufacturing and financial capital on total wealth with Gentry probit

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Total Probate Value</th>
<th>Gentry Status probit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS</td>
<td></td>
</tr>
<tr>
<td>Manufacturing Capital</td>
<td>0.064 (0.097)</td>
<td>0.0003 (0.0004)</td>
</tr>
<tr>
<td>Bonds</td>
<td>1.357*** (0.186)</td>
<td>0.011*** (0.0004)</td>
</tr>
<tr>
<td>Chattel Lease/Annual Rent</td>
<td>1.822*** (0.249)</td>
<td>0.008** (0.003)</td>
</tr>
<tr>
<td>Cash and Plate</td>
<td>2.327*** (0.32)</td>
<td>0.018* (0.01)</td>
</tr>
<tr>
<td>Constant</td>
<td>238.903*** (46.714)</td>
<td>350.473*** (62.739)</td>
</tr>
<tr>
<td>Observations</td>
<td>255</td>
<td>255</td>
</tr>
<tr>
<td>R²</td>
<td>0.679</td>
<td>0.379</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.670</td>
<td>0.369</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td></td>
<td>-60.47</td>
</tr>
<tr>
<td>Akaike Inf. Crit.</td>
<td>130.941</td>
<td>130.941</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>436.044(df=246)</td>
<td>602.434(df=250)</td>
</tr>
<tr>
<td>F Statistic</td>
<td>69.900*** (df=4; 246)</td>
<td>40.81***(df=2;250)</td>
</tr>
</tbody>
</table>

Note: *p<0.1; **p<0.05; ***p<0.01

The somewhat surprising and counterintuitive result from regression is that manufacturing capital – wool, yarn, tools, and finished cloth – did not seem to have a large effect on the total probate values. Financial capital explains most of the variation. In particular, rent from chattel lease and other land based securities, explains 38 per cent of the variation in model. This indicates that the overall cost of raw material and fixed capital required for manufacturing was extremely low.

Conclusion

The focus on industrial capital and land-based finance has important implications for understanding the mechanisms of economic change that eventually led to the industrial revolution. In particular, the example of clothiers who manufactured ‘Spanish’ cloth shows the increasing reliance of local manufacturing employment on competition in international markets. On-going research expands this approach to other manufacturing areas and subsectors in Britain, and for comparative purposes, other manufacturing areas of Europe in the same period. Using actual accounts of production, more attention is paid to the labour intensification and women’s labour in industrial cash crops such as woad.

References:


Broadberry, S., Campbell, Bruce M.S., van Leeuwen, Bas. (2013). ‘When did Britain Industrialize? The sectoral distribution of the labour force and labour productivity in
Spinning places: Women’s work and men’s work in the cotton and silk industries of Bursa and Bombay 1850-1910

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This paper investigates the ways in which gender featured in the shaping of labour markets in Bursa and Bombay between 1850 and 1910. Two sectors are examined in this connection: cotton spinning in Bombay and silk reeling in Bursa, both of which developed in the 1850s in response to the increasing global demand for raw textile material. I argue that gendered meanings assigned to specific manufacturing activities were contingent upon economic and social circumstances driving the supply of labour in both regions. As agricultural pressures drove thousands of peasants to Bombay’s mills, what used to be regarded as ‘women’s work’ became a male-dominated activity; whereas labour scarcity in Bursa created a demand for cheap female labour, meaning, silk reeling remained a woman’s task. The strict gender segregation depressed women’s wages in both regions. However, it also provided an incentive for their participation in waged employment. This paper examines the link between cultural values and economic change in two similar yet rarely compared settings in global labour history.397

Over the course of the nineteenth century, India and the Ottoman Empire – two well-established artisanal production centres of the ‘Orient’ – were gradually integrated into the Europe-centred capitalist world market. Liberal trade agreements with Western powers, together with rapid improvements in transportation and communication, led to a remarkable growth in their share of foreign trade.398 As mass produced textile goods swept their local markets, certain manufacturing activities based on pre-industrial technology such as hand looms declined. At the same time, export-oriented sectors such as the raw silk and cotton trades expanded significantly. Bursa, a well-established silk manufacturing city with easy access to naval trade, was an ideal base for European merchants looking for alternative sources of raw silk. French merchants and entrepreneurs introduced new silk reeling technologies in the city.399 In its first few decades, the industry experienced periods of boom followed by serious production crises. Its output reached record heights towards the end of the century. Between 1890 and 1910, the number of silk reeling workshops (filatures) increased by 50 per cent and the annual production rose from 154 tons to 677 tons.400 At the beginning of the twentieth century, Bursa and its surroundings had 160 filatures employing 19,000 workers in total.401

400 Ibid. 225.
401 Donald Quataert, Workers, Peasants and Economic Change in the Ottoman Empire 1730-1914 (Istanbul: The Isis Press, 1993): 108.
In contrast with Bursa, Bombay had never been a centre of artisanal production prior to the inception of its mill industry.\textsuperscript{402} The city’s commercial expansion was heavily based on the export of raw material, primarily cotton and other raw materials and, from the 1820s onward, opium. The principal markets for Bombay’s raw cotton were China, Western Europe (mainly England) and later Japan. By the end of the century, Bombay’s cotton trade with Europe was increasingly concentrated in the hands of large exporters. The European merchants’ reliance upon Indian brokers for the procurement of necessary contacts and sources also decreased significantly. As a way of hedging against potential losses, local cotton merchants sought an outlet in spinning and weaving raw cotton. At the turn of the century, the Indian textile industry was largely concentrated in Bombay, with an average number of 82,162 hands employed daily in cotton spinning and weaving.\textsuperscript{403}

Despite important contributions from historians who have investigated labour in the Ottoman and Indian contexts, we still know little about the ways in which gender featured in the processes outlined above.\textsuperscript{404} This comparison offers an understanding of the ways in which capitalist sectors influenced gendered meanings of economic activities in two non-European settings. In contrast to major textile centres in Europe, Bombay’s mill population was predominantly male throughout the late nineteenth century. Bursa’s silk reeling workforce, on the other hand, was composed of young women in their teens. I maintain that the difference in gender composition was due to the differing opportunities women had with respect to balancing domestic tasks with employment. As contemporary sources reveal, labour was scarce for the first silk filatures established in Bursa. European observers who travelled to the city in the mid-nineteenth century remarked on the difficulties of finding cheap and skilled labour for the filatures.\textsuperscript{405} This was due partially to the increasing hostility that the local population felt towards the activities of foreign entrepreneurs, as well as the continued existence of sericulture and domestic hand weaving, which provided male peasants with viable alternatives to waged labour in the filatures.\textsuperscript{406} Under the circumstances, filature owners sought cheaper sources of labour power. In Bursa’s rural regions, reeling and spinning were viewed as extensions of women’s domestic duties, activities they performed to subsidize the main household income. Several folk tales justified women’s monopoly over the craft and emphasized their greater levels of skill and innate knowledge.\textsuperscript{407} The secondary economic value attributed to these tasks devalued women’s work and allowed the filature owners to keep wages at the lowest possible level. However, the transition of the task from home to the factory under entirely different terms and conditions cast some doubt on its suitability for women. Major obstacles that stood before women’s employment were reservations amongst Muslim women about working under non-Muslim employers, combining housework and


\textsuperscript{403} S. M. Edwardes and James M. Campbell, \textit{The Gazetter of Bombay City and Island}, Volume 1, (Bombay: Times Press, 1909): 488; Rajnarayan Chandavarkar, \textit{The Origins of}. 244.


\textsuperscript{406} Evidence reveals that handloom silk weaving gained popularity in Bursa’s Armenian neighbourhoods in 1848: Official Letter, 11 November 1848 (13 Zilkade 1264), The Ottoman Archives of the Prime Minister’s Office (henceforth: B.O.A.), C. ML., 215/8889, Istanbul. At the same time, rising tension between ethnic elements of the Empire, compounded by increasing economic hardship experienced by Muslim artisans, contributed to the hostility towards the activities of foreign merchants. For instance, in 1865 locals demolished a filature owned by an Armenian, Fümmüoğlu Kigork. See Official Correspondence, 13 March 1865 (1 Mart 1281), B.O.A., M.V.L., 18/701, Istanbul.

factory work, the presence of male supervisors and the stigma attached to working outside of the home. To circumvent some of these barriers the first entrepreneurs established filatures near urban residential areas and provided free accommodation and transportation to those living in the villages.408 As most women sought to balance household tasks and workplace commitments, these incentives proved effective in attracting female labour to the filatures. In addition to providing women with the means to attend their domestic duties, the merchants sought to eliminate the cultural and religious barriers that prevented women from engaging in waged work. Managerial strategies to this end included targeting non-Muslim communities as sources of labour, seeking written approval from religious authorities for hiring female operatives, keeping the number of male staff at the minimum, and recruiting young girls in their late teens who had lighter household tasks and more interest in taking up seasonal work. As a female-dominated industrial workforce gradually emerged in Bursa, wages dropped significantly. According to J. Maling, the average daily wage of a silk-reeling worker (çikrikçi) fluctuated between eight and 10 piasters between 1858 and 1872.409 Three decades later, wages had been reduced to three piasters per day.410 At the same period the daily average wage of an Ottoman factory worker, usually male, was between 12 and 15 piasters.411

In Bombay, as in most of west and north India, cotton spinning was also regarded as ‘women’s work’ – a natural extension of women’s domestic duties. In his monograph on cotton manufacturing, the Financial Commissioner of Punjab, stated in 1884: ‘spinning is the domestic employment, during the greater part of their leisure time, of women of all classes, and like most of such employments it is very ill paid’.412 However, the conditions of labour supply were dramatically different in Bombay compared to Bursa, which accounted for the emergence of a male-dominated labour market. From the 1800s onwards, the migration of workers from the countryside to the city had dramatically increased as a result of famines and peasants’ increasing dependence on cash income. An abundance of unskilled male workers depressed overall wages and decreased the mill owners’ dependence on cheap female labour. As a result, no incentive was provided for women’s participation in the cotton-spinning workforce.413 The large distance between factory and home, combined with the lack of suitable accommodation in the city, led women to stay in the countryside and assume agricultural tasks while men temporarily migrated to Bombay for mill employment. Even before the Factories Act of 1891 that limited the hours of factory work for women, the overall ratio of female workers did not exceed a quarter of the total work force. The Factory Commission in 1885 found it curious that ‘while in Lancashire of 423 thousand employed in the cotton factories, 253 thousand are females, 138 thousand are males, and the rest children; in the Bombay Presidency, of 49,928 operatives in textile factories, 38,159 are adult males, 10,794 are females, and 975 are children’.414 Male workers in Bombay thus adopted an economic activity that predominantly took place in the female dominion. Female workers’ participation in the mill workforce increased towards the end of the period, as more families

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411 Donald Quataert, Ottoman Manufacturing..., 132.
severed their ties with the rural sphere. However, women were unable to compete for jobs that were already dominated by men. They remained confined to the low-status roles of winding and reeling, where their wages differed significantly from male operatives. A government report dated 1892 shows that the average daily wage of a female reeler in a Bombay cotton mill was seven to eight rupees, whereas a male spinner earned more than twice her wage, at 20 rupees on average.415

Mill managers and owners justified the restriction of women’s work to the reeling and winding departments in Bombay’s cotton mills by referring to the use of ‘dangerous’ machinery in other divisions. For example, James Herbert Dunkerly, Manager of the Empress Mill, said in 1875: ‘As a rule women are not allowed near machinery turned by power except in throstle rooms [the throstle frame was a spinning machine driven by steam], and these machines are not dangerous’.416 Sakoo, the female overseer of the reeling department in Colaba Mill, said: ‘Children, young persons, and women are never allowed to clean machinery in motion, that is the work of men, women only clean their reels, which are worked by hand. The women never have any need to go near machinery turned by power, we are quite separate from the machinery in motion’.417 Here, the machinery belongs to the masculine domain, as opposed to the hand-powered equipment that was considered safe for women. It is nevertheless important to emphasize that the sort of work considered appropriate for women was subject to the requirements of capitalist production. Around the same time, women operated the steam-powered reeling machinery in Bursa, as did their counterparts in France and England. N.N. Wadia, Manager of the Maneckji Petit Mill, stated that in the 1890s the majority of factory operatives who operated the spinning machinery in England were women.418

The continued male monopoly over spinning and weaving in Bombay can be attributed to mill owners’ reluctance to employ more women at a time when Lancashire mill owners were pressing for factory legislation in India. Another reason could be male workers’ organizational capacity and control over the recruitment processes. Even though the wage and status hierarchy between men and women workers remained intact, the physical separation of their work provided an incentive for women to participate in employment. For instance Sakoo, the female overseer in Colaba Mill, stated that women preferred working in cotton mills because they feared mixing with men in other sectors: ‘I prefer working with women. If I could not get employment in reeling I would not work with men, I would do needle work. I do not know what the other women would do, but I do not think they would work outside if they could not get employment in the reeling room’.419 Female workers in Bursa also found the presence of men in the workplace inconvenient. They frequently appealed to government authorities with complaints of sexual harassment and abuse, which led the local government to draft a regulation with specific clauses on the relationships between male supervisors and their female subordinates. The regulation prohibited male workers from defaming or verbally abusing female workers, receiving gifts from them and forming friendly relationships with reelers under any circumstances.420 In the early 1850s, discontent about male workers on the shop floor led employers in Bursa to bring female supervisors from abroad, in an attempt to encourage female workforce participation.421

417 The evidence of Sakoo, Report and Proceedings..., 142.
418 The evidence of N.N. Wadia, Report and Proceedings..., 76.
419 The evidence of Sakoo..., 142.
420 The Minutes of the 18th General Assembly of the Hüdavendigar Province (Bursa: 1908), Bursa İnebey Library, 352:340 (561.3) Record No: 1126/1, 118-119.
421 For example, an Armenian filature owner, Cezayirlioglu Migirdtc, brought a female supervisor from France
In brief, the meanings of ‘women’s work’ and ‘men’s work’ were highly fluid and contestable in both Bursa and Bombay during the period under examination. Capitalist sectors either undermined or consolidated those meanings as entrepreneurs sought to maximize their interests in a rapidly changing economic environment. While a gendered division of labour devalued women’s work, it also encouraged female workforce participation. Further research will reveal the effects of women’s employment on gendered hierarchies in the home.
The regional and national development of the male occupational structure of England and Wales, 1600-1820

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Supervisor: Dr Leigh Shaw-Taylor

Wrigley, Shaw-Taylor, and others in the Cambridge Group for the History of Population and Social Structure (Campop) have been collecting and analysing historical occupational information since 2003. Thus, when I joined Campop at the start of my PhD, I walked into a treasure trove of information and knowledge, allowing me to focus much of my research on confronting three major methodological problems. In this paper, these problems and my solutions are discussed, as well as examples of the resulting new insights.

Problem one: lack of coverage

Campop’s main source of male occupational data before the availability of reliable census information has been the Anglican baptism register. Rose’s Act of 1812 made recording fathers’ occupations mandatory in these registers, enabling Shaw-Taylor et al. to create an occupational quasi census for c.1817.\footnote{Shaw-Taylor et al, ‘The Creation of a “Census” of Adult Male Employment for England and Wales for 1817’, \textit{Cambridge Working Papers in Economic and Social History}, 4 (2012), http://www.econsoc.hist.cam.ac.uk/docs/CWPESH%20number%204%20March%202012.pdf} Before Rose’s Act too, baptism records provide occupational information in a sample of parishes, allowing Shaw-Taylor and Wrigley to calculate, with a margin of error, their recently published estimates for c.1710.\footnote{Shaw-Taylor and Wrigley, ‘Occupational Structure and Population Change’ in Floud, Humphries, and Johnson (eds), \textit{The Cambridge Economic History of Modern Britain. Volume 1. Industrialisation, 1700-1870} (2014), pp.53-87.} However, this sample is too small to provide estimates for the mid or late eighteenth century, and provides no coverage at all for earlier centuries. Recognizing these limitations, Shaw-Taylor, Field, and other Campop members started collecting another promising source of occupational information on a large scale in 2007: indices to wills and other probate documents, listing the decedents’ occupational descriptors. These were kindly made available to me. Supplemented with new and improved indices, they were used to create a testamentary database covering 90 per cent of English and Welsh counties between 1550 and 1850.

But as an occupational information source, probate documents suffer from an, at first sight, critical deficiency: men in capital-intensive occupations like farmers or shopkeepers were much more likely to leave testamentary documents than men in poorly-paid or capital-extensive occupations such as labourers or weavers. Historians have created occupational structure estimates directly from probate records, for example Clark et al. in a recent paper.\footnote{Clark, Cummins, and Smith, ‘Malthus, Wages, and Preindustrial Growth’, \textit{The Journal of Economic History}, 72:02 (2012), pp.364-92.} But such estimates are highly unreliable as an example makes clear. According to the probate data, 34 per cent of Lancashire men worked in agriculture in c.1817, more than twice the actual figure of 15 per cent evident from the quasi census. Conversely, for textiles the probate data imply an occupational share of only 12 per cent, less than a third of the actual figure of 39 per cent.

But, fortunately, it proved possible to resolve this deficiency by combining the probate and baptism register data and using the strengths of each data source to counteract the weaknesses of the other. A detailed description of this approach can be found elsewhere.\footnote{Keibek, ‘Using probate data for estimating historical male occupational structures’, \textit{Campop paper}, http://www.campop.geog.cam.ac.uk/research/projects/occupations/abstracts/paper27.pdf} In short, the (biased) probate data are calibrated using the (non-biased) parish register data and

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the (now calibrated) probate data are subsequently used to inter- and extrapolate the patchy parish register data. The calibration is based on the probability that a man in a certain occupation, area, and time period was probated (figure 1), calculated by comparing probate and baptism records in parishes in which both data sources are available.

Figure 1: The relative probability of being probated in southern England, c.1700 (indexed with farmer = 100; example occupations)

The inverse of these probabilities become ‘calibration factors’ with which probate data in parishes without baptism data are multiplied, thereby reconstructing what the baptism record would have shown had it provided occupational information in those parishes too. It can be demonstrated that the calibration factors are fairly stable over place and, to a lesser extent, time. Thus, for areas or time periods in which baptism data are missing entirely, probate calibration factors can be ‘borrowed’ from nearby areas or time periods. The result is unbiased occupational information covering England and Wales during the 1660-1820 period and, for certain areas, even earlier.
Problem two: labourers

Many men in both baptism registers and probate documents are described merely as ‘labourer’, without clarifying what type(s) of work they engaged in and, therefore, to which occupational (sub)sector(s) they should be attributed. Such ‘labourers’ make up nearly one-third of all men in the c.1817 quasi census. In the national accounts literature, these men have been allocated to sectors rather arbitrarily. Crafts, in essence, allocated all of them to agriculture, whereas Broadberry et al., for undisclosed reasons, use the 1522 distribution of non-labourers to attribute labourers to sectors nearly three centuries later. This is clearly unsatisfactory. A superior approach, developed by Saito and Shaw-Taylor, was used for the CEHMB estimates, utilizing the ratio between labourers and their employers in the later-nineteenth-century censuses as a guide for dividing labourers across sectors in earlier times. But, as the authors realize, the reliance of this approach on data from much later time periods is unfortunate and the approach is ill-suited for regional or local applications.

Therefore, a new allocation methodology was developed, using only contemporary data and applicable at all geographic scales, a detailed description of which can again be found elsewhere. In short, the approach seeks to explain the number of labourers per parish by means of its ‘drivers’ per occupational sector. For example, the number of agricultural labourers in a parish is driven by the total land area in that parish, differentiated by land quality, elevation, and local climate, as well as by the numbers of other types of agricultural workers in that parish being potential employers such as farmers, or potential ‘competitors’ for agricultural work such as farmers’ sons. Likewise, the number of secondary sector labourers is driven by the number of potential employers in relevant occupations such as the several building trades, tanners and brewers. The significance and strength of the relationship between total labourer numbers and the aforementioned drivers is determined using a constrained, non-linear regression. The resulting fit is very good but, more importantly, accurately allocates labourers to their occupational (sub)sectors, as application of the technique to the 1851 census demonstrates. In this census, labourers were specified as agricultural and non-agricultural. Thus, by temporarily ignoring this distinction and applying the regression approach to the total number of labourers, the degree to which labourers are correctly allocated can be tested, and proven to be highly accurate, as figure 2 demonstrates.

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427 Unpublished paper, made available by the authors.
Figure 2: A comparison between the actual number of agricultural labourers per county in 1851 and that ‘predicted’ by the regression analysis

The approach shows that 85 per cent of the early eighteenth century and 84 per cent of the early nineteenth-century labourers should be attributed to agriculture – much higher percentages than the 68 presumed by Broadberry et al. The sectoral allocation varied strongly by area, reflecting regional differences in the level of agrarian capitalism as well as the wider occupational structure. For example, 46 per cent of the early nineteenth-century labourers in County Durham are properly allocated to the secondary sector, compared to only 5 per cent in Buckinghamshire.

**Problem three: by-employments**

Parish registers and testamentary documents typically describe men with a single occupational title. The most common criticism of the Campop results is that recreating an historical occupational structure based on these titles is problematic as it ignores by-employments which, as Overton et al. stated were ‘the norm’ in pre-industrial England.\(^{429}\) The impression of ubiquitous by-employments is based on evidence from probate inventories which, in the goods listed, often show clear evidence of gainful activities additional to the decedent’s stated occupation. As I have shown in a recent paper co-authored with Shaw-Taylor, the inventory evidence actually severely exaggerates by-employment incidence, as the by-employed were disproportionately likely to be probated.\(^{430}\) Nevertheless, a by-employment correction on principal-occupation-only estimates would still seem necessary.

Accurately determining the size of this correction requires rectifying a serious, general shortcoming of probate inventories: a severe bias towards wealthy, capital-intensive estates. A detailed description of how this can be achieved can, again, be found elsewhere.\(^{431}\) In essence, the approach reverses the statistical process which created the wealth bias in the

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\(^{429}\) Overton et al., *Production and Consumption in English Households, 1600-1750* (2004), pp. 76-77.


probate record. First, the probability function describing the statistical likelihood of being probated as a function of estate wealth is established in an iterative process, depicted in illustration 1.

Illustration 1: Schematic depiction of the iterative process for establishing the historical probability of being probate as a function of household wealth

By, subsequently, dividing the (known) wealth distribution of all probated households by the (now established) probability function the (formerly unknown) wealth distribution of all households, probated and non-probated, is reconstructed, complete with all other household characteristics included in the probate evidence, such as type and value of domestic items, total estate value, and the variety, quantity, and value of work-related goods. It is the latter which allows us to accurately determine the incidence and economic importance of by-employments, although it is worth remarking here that the methodology can obviously also be applied to reassess other important historical issues for which probate inventories are a central source of evidence, such as early-modern consumption and material culture. Staying with the issue at hand, the approach demonstrates that a much smaller share of early eighteenth-century households were by-employed than the sixty-plus per cent often indicated by the ‘raw’ probate inventory evidence. In most early eighteenth-century counties, only 20 to 30 per cent of secondary-sector households engaged in agriculture, and typically fewer than 10 per cent of farmer households were by-employed in male secondary-sector activities. Moreover, the scale of these by-employments, which can also be estimated, was much smaller than suggested by the ‘raw’ probate data; on average, secondary-sector households by-employed in agriculture generated 30 per cent of their income in the by-employment, whilst farmer households which also engaged in male secondary sector activities generated 20 per cent of
their income from those activities. Combining these figures on incidence and income contribution enables one to calculate the appropriate by-employment correction to the principal-occupation-only male occupational structure, which turns out to be a relatively limited shift of 3 percentage points from the secondary to the primary sector.

However, it can be argued that even this limited correction is inappropriate. By comparing by-employment incidence with the size of the probated households, presumed roughly linearly related to the number of beds in these households, a very strong statistical relationship emerges. For every additional bed in the inventory, on average one additional by-employment is also found. This clearly suggests that such by-employments should not properly be interpreted as the probated male ‘household head’ engaging in several activities but, instead, as several individuals within the household engaging in different activities. But such household by-employment is irrelevant for the male occupational structure as it either relates to female work activities or to those of men other than the household head such as living-in sons who, in time, left their own traces in baptism registers and the probate record.

**Example results**

In combination, the new methodologies discussed above lead to new estimates of male occupational structure. This paper is too short to discuss these in full, so I will concentrate on the eighteenth and early nineteenth century, summarized in table 1.

**Table 1: The male occupational structure of England and Wales, c.1710-c.1817**

<table>
<thead>
<tr>
<th>Sector</th>
<th>c.1710 (%)</th>
<th>c.1755 (%)</th>
<th>c.1785 (%)</th>
<th>c.1817 (%)</th>
<th>1710–1817 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>45.0</td>
<td>40.9</td>
<td>41.6</td>
<td>40.9</td>
<td>-4.0</td>
</tr>
<tr>
<td>Mining</td>
<td>1.0</td>
<td>1.8</td>
<td>2.1</td>
<td>3.1</td>
<td>+2.1</td>
</tr>
<tr>
<td>Other</td>
<td>0.3</td>
<td>0.6</td>
<td>0.6</td>
<td>0.5</td>
<td>+0.2</td>
</tr>
<tr>
<td><strong>Secondary sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clothing</td>
<td>42.0</td>
<td>44.5</td>
<td>44.4</td>
<td>42.0</td>
<td>+0.0</td>
</tr>
<tr>
<td>Footwear</td>
<td>4.8</td>
<td>4.4</td>
<td>4.4</td>
<td>3.4</td>
<td>-1.3</td>
</tr>
<tr>
<td>Textiles</td>
<td>2.9</td>
<td>3.7</td>
<td>3.7</td>
<td>3.8</td>
<td>+0.9</td>
</tr>
<tr>
<td>Metal trades</td>
<td>9.8</td>
<td>8.8</td>
<td>8.2</td>
<td>7.8</td>
<td>-1.9</td>
</tr>
<tr>
<td>Building</td>
<td>4.7</td>
<td>4.9</td>
<td>3.9</td>
<td>3.8</td>
<td>-0.9</td>
</tr>
<tr>
<td>Other</td>
<td>12.2</td>
<td>14.0</td>
<td>15.3</td>
<td>13.6</td>
<td>+1.4</td>
</tr>
<tr>
<td><strong>Tertiary sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dealers and sellers</td>
<td>13.0</td>
<td>14.7</td>
<td>14.1</td>
<td>17.1</td>
<td>+4.0</td>
</tr>
<tr>
<td>Services and professions</td>
<td>2.8</td>
<td>2.5</td>
<td>2.7</td>
<td>3.4</td>
<td>+0.6</td>
</tr>
<tr>
<td>Transport</td>
<td>6.0</td>
<td>7.7</td>
<td>7.3</td>
<td>8.7</td>
<td>+2.7</td>
</tr>
</tbody>
</table>

As this table shows, England and Wales’ occupational structure was already highly industrial in c.1710, employing an equally large share of the male population then as in c.1817. Indeed, from the beginning of the industrial revolution, the secondary sector declined in importance as a male employer, as a consequence of efficiency improvements achieved through technological and organizational innovation, especially in textiles and the metal trades. The figures differ substantially from those in the older national accounts literature of Crafts and Harley, which suggested that Kuznets and Lewis had been correct in linking industrialization to a structural shift in labour shares from agriculture to industry. In fact, labour from both these sectors appears to have, logically, shifted to sectors with less scope for productivity improvements: mining and the tertiary sector. Table 1 also suggests the need for significant adjustments in the occupational estimates used by Broadberry et al., for example in...
the size of the tertiary sector, which seems seriously overestimated in the latter’s figures, as well as in the size and the direction of change in the secondary sector.

An arguably even more important general reflection on the national accounts approach can be made by using the probate and baptism register evidence to look below the national level. As map 1 shows, the national experience was made up of a wide variety of regional experiences, varying from rapid industrial expansion in the North-West, to strong growth in agriculture in the South-East, and of mining in Cornwall, Wales, and the North-East.

Map 1: The sector producing the largest absolute growth in male employment between c.1710 and c.1817 in each county

Table 2 demonstrates even more clearly that regional developments often differed fundamentally from the national average and were frequently much more dramatic. For example, whilst Lancashire’s occupational structure shifted powerfully towards industry, with more than two-thirds of all males employed in that sector by c.1817, developments in Norfolk were at least as remarkable and in exactly the opposite direction; from one of the country’s most industrialized counties in c.1710 it had deindustrialized into a predominantly agricultural economy by c.1817. Bedfordshire’s experience was very different again, with agriculture dominant and intensifying over the period, providing work for 76 per cent more men in c.1817 than in c.1710, and with numbers of agricultural labourers per farmer increasing from three to more than nine.

Table 2: Male occupational developments in selected count(ry)es, c.1710 to c.1817

<table>
<thead>
<tr>
<th></th>
<th>Lancashire (%)</th>
<th>Norfolk (%)</th>
<th>Bedfordshire (%)</th>
<th>Wales (%)</th>
<th>Leicestershire (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>c.1710 c.1817</td>
<td>c.1710 c.1817</td>
<td>c.1710 c.1817</td>
<td>c.1710 c.1817</td>
<td>c.1710 c.1817</td>
</tr>
<tr>
<td>Agriculture</td>
<td>38 15</td>
<td>29 52</td>
<td>63 68</td>
<td>64 51</td>
<td>55 35</td>
</tr>
<tr>
<td>Other prim. sect.*</td>
<td>3 4</td>
<td>0 1</td>
<td>0 0</td>
<td>1 7</td>
<td>0 1</td>
</tr>
<tr>
<td>Secondary sector</td>
<td>49 68</td>
<td>57 33</td>
<td>29 22</td>
<td>27 31</td>
<td>38 53</td>
</tr>
<tr>
<td>Tertiary sector</td>
<td>10 13</td>
<td>13 14</td>
<td>8 9</td>
<td>8 11</td>
<td>7 11</td>
</tr>
</tbody>
</table>

* mostly mining
Differences in regional fortunes are even more apparent when focusing on specific industries. As figure 3 demonstrates, the relative decline of the textiles industry in the traditional textiles counties had set in long before industrialization. Initially, production simply spread more widely from the old textile counties to the rest of the country, but particularly to Lancashire and the West Riding of Yorkshire. During the industrial revolution, these two counties rapidly came to dominate, at the expense not only of the old textile counties but all other counties too. In the overall picture, the continuous decline of textile production in the traditional counties comes to the fore just as powerfully as the rise of mechanized production in Lancashire and the West Riding.

Figure 3: Share of total employment in textiles within England and Wales, c. 1710-c. 1817

As the regional results above show, the national accounts approach, notwithstanding its tremendous value, arguably hides as much as it reveals. Table 2 and figure 3 strongly suggest that Britain’s precocious economic development must have owed much to its regional dynamism, probably enabled by an equally precocious national integration of regional economies. To truly appreciate and understand economic developments preceding and during industrialization, quantitative insights on the national level need to be combined with those on the regional and even the local level. With a combined probate and parish register database at our disposal, containing the occupations and locations of nearly five million English and Welsh men between 1585 and 1835, we are in an unprecedented position to do just that.

There is, of course, also still much room for improvement. For example, coroner’s reports can potentially be utilized to enrich probate calibration for the early seventeenth century. Most importantly however, the research discussed in this paper engaged with male labour only whereas a large proportion of the pre- and early-industrial labour force was made up by women. Only when including women’s work can we fully realize the promise of using historical occupational structures for analysing economic developments. Much work on this challenging issue is required.
The fur trade and the metropolitan economy: the supply of commodity exports to the Hudson’s Bay Company during the late eighteenth and early nineteenth centuries

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Supervisor: Professor Anthony Webster

Introduction
In recent years it has been shown that the British East India Company (EIC) played a more significant role in stimulating the metropolitan and wider British economy than historians had previously believed.432 In particular, Huw Bowen has argued that the Company’s export trade was an impressive one and that a range of traditional industries which faltered in the late eighteenth century were kept afloat by the Company’s patronage.433 Yet, while the contribution of the East India Company to the domestic economy has been reassessed, the influence of the other ‘great’ chartered companies on the British economy in the early modern period remains largely unknown. While it was a smaller concern than the EIC, the Hudson’s Bay Company (HBC) also made regular purchases of commodities for trade, as well as, for the provision of its overseas servants. What were these purchases? From where and from whom did the HBC purchase its commodities? Did the HBC forge links with provincial industries that were comparable to those established by the EIC?

This paper addresses these questions through a detailed analysis of the commodity exports of the HBC between 1783 and 1821, a study that reveals the lengths to which the Company had to go in order to satisfy the needs and desires of the Aboriginal communities that trapped the Company’s furs in the remote, sub-Arctic regions of North America.434 From this analysis it emerges that the HBC provided a regular and reliable source of income to a large number and wide range of tradespeople, especially those in the metropolis. The Company’s influence also extended beyond London and into provincial regions.

The paper is structured into three parts. The first establishes the scale of the Company’s commodity exports. The second uncovers over-arching trends in the duration and distribution of the Company’s supplier contracts. The third explores the range of trading commodities purchased by the Company, ascertains their importance to the trade, and considers the spatial distribution of the Company’s patronage.

The scale of the HBC’s export trade
Between 1783 and 1821 the HBC’s commodity export purchases averaged £30,899 each year.435 This figure was over forty times smaller than the average £1.3 million annually exported by the EIC in 1795-9.436 Even so, while the HBC’s trade was small and vastly overshadowed by its counterpart on Leadenhall Street, the Company was well-integrated into the metropolitan economy.

433 Bowen, ‘Sinews’, pp. 466-86.
435 HBCA, A.25/3-5, Merchandise Exported, 1778-1823.
This paper largely uses the Company’s ledgers of ‘merchandise exported’ to analyse the Company’s commodity export trade.\textsuperscript{437} However, these ledgers recorded the real value of the purchased commodities and so cannot be used to provide an accurate view of how the scale of the Company’s trade changed over time. Rapid inflation in the Napoleonic War era means that apparently stable levels of purchases in the Company’s records may actually represent a reduction in real terms. While the Company did not record volumes, analysis of the ‘official value’ of merchandise exported to Hudson’s Bay, as recorded in the British Customs’ Records, can be used to determine the impact of inflation on the Company’s accounts.\textsuperscript{438} Unfortunately, the aggregate official values for Hudson’s Bay in the 1780s and 1790s are incomplete. For instance, in 1783 exports of key commodities such as blankets, guns, and iron were not listed in the Customs’ ledgers, yet they were by 1821. Nonetheless, the official value of specific commodities that were routinely recorded in the Custom’s records can provide an indication as to the extent of the omissions.

<table>
<thead>
<tr>
<th>Year</th>
<th>HBC’s Expenditure</th>
<th>Total Official Value of Exports</th>
<th>Official Value of Gunpowder</th>
<th>Official Value of Woollen Long Cloth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1783-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1788-92</td>
<td>+59</td>
<td>+172</td>
<td>+79</td>
<td>+60</td>
</tr>
<tr>
<td>1793-7</td>
<td>+11</td>
<td>+102</td>
<td>-36</td>
<td>N/A</td>
</tr>
<tr>
<td>1798-1802</td>
<td>+20</td>
<td>-29</td>
<td>-12</td>
<td>N/A</td>
</tr>
<tr>
<td>1803-7</td>
<td>-6</td>
<td>-32</td>
<td>+13</td>
<td>-34</td>
</tr>
<tr>
<td>1808-12</td>
<td>-3</td>
<td>+6</td>
<td>+28</td>
<td>-34</td>
</tr>
<tr>
<td>1813-7</td>
<td>-3</td>
<td>-9</td>
<td>+12</td>
<td>+48</td>
</tr>
<tr>
<td>1818-21</td>
<td>+40</td>
<td>+89</td>
<td>+90</td>
<td>+84</td>
</tr>
</tbody>
</table>

Table 1 compares the percentage change in the HBC’s average annual expenditure on commodity exports with the percentage change in the average annual official value of exports to Hudson’s Bay, in addition to the percentage change in the official value of gunpowder and woollen long cloth exported; two commodities that were regularly listed in the Customs’ Records. The Company’s trade clearly expanded in 1788-92 but the Customs’ records greatly over-estimate this growth. The increase in the official value of gunpowder (79 per cent) and woollen long cloth (60 per cent) is closer to the Company’s records (59 per cent) than the Customs’ figures (172 per cent). The Company’s trade evidently declined during the Napoleonic War period as the real values in the Company’s records were largely stagnant. In addition, the Customs’ records are more accurate after 1800 and the aggregate value declined by 29 per cent in 1798-1802 and by a further 32 per cent in 1803-7. It is apparent that the Company’s trade almost doubled in 1818-21. Despite the return to peace and the resultant fall in prices, the Company’s expenditure increased by 40 per cent at the end of period. The official values show that on average each year twice as much woollen long cloth was exported in 1818-21 (£2,964) than in 1783-7 (£1,496), and for the same period exports of gunpowder tripled. Therefore, the Company’s trade roughly doubled between 1783-7 and 1818-21.

**The duration and distribution of supplier contracts**

The Company’s commodity export trade, while small, expanded over the period but what form did the Company’s purchases from tradespeople take? First, it is clear that the majority of tradespeople from whom the Company purchased commodities only supplied merchandise to the Company for a short period of time: 159 suppliers held a contract for just one year and 165 suppliers held one for between two and nine years. Yet short-term relationships with

\textsuperscript{437} HBCA, A.25/3-5, Merchandise Exported, 1778-1823.

\textsuperscript{438} TNA, CUST 8/1-14, 1812-21; CUST 10/4-12, 1809-21; and CUST 17/8-30, 1783-1808.
suppliers were not the usual way in which the Company sourced its commodity exports. One-
year contracts only accounted for 1 per cent (£15,287) of the purchases. In addition, 202
suppliers provided commodities that valued under £100 and so while there were a notable
number of tradespeople with whom the Company did business, many of these transactions
were clearly for small purchases of miscellaneous items.

More striking is the significant number of long-term relationships that the Company
entered into with its suppliers. 119 tradespeople held a contract with the Company for a
decade or more and they accounted for 81 per cent of the total expenditure. Indeed, 11
suppliers held a contract for the full 39 years of the study and they alone provided 27 per cent
of the Company’s commodity exports. Over 100 firms maintained contracts with the
Company that exceeded more than £1,000, and 28 suppliers received payments that totalled
more than £10,000. The Company therefore provided a regular and reliable source of income
to over 100 tradespeople between 1783 and 1821.

It could be argued that the Company’s tendency to maintain long-term relationships
with its suppliers was poor business practice as this limited competition for contracts and led
to the Company paying higher prices for its commodity exports. This view neglects a number
of key points however. First, analysis of the Company’s minute books shows that there was
competition for supplier contracts as the Company routinely considered proposals from
several different tradespeople before a contract was assigned. Second, the Company needed to
trust its suppliers to provide merchandise that would meet the exacting standards of
Aboriginal peoples and to supply such articles on time. The straits into Hudson’s Bay were
only free of ice between July and September and so there was only a small opening for safe
passage in and out of the Bay. The Company therefore favoured suppliers who fulfilled their
contracts in good time before the Company’s ships departed for Hudson’s Bay in late May or
early June.

Uncovering the cargoes
On average each year, 55 per cent (£16,644) of the Company’s expenditure was on trading
commodities, 29 per cent (£8,743) on provisions, and 16 per cent (£4,735) on services. The
vast majority of articles in the ‘trading commodities’ category were consumed by Aboriginal
peoples but a small proportion of some items, particularly alcohol and tobacco, were also
consumed by the Company’s servants.

Table 2 breaks down the Company’s expenditure on trading commodities into
‘capital’ and ‘consumer’ goods. Capital goods were articles that were used for hunting, food
preparation, and other work related activities. Consumer goods were those items that were for
clothing, decorative, or recreational purposes. As the table shows, the majority of the
purchases were for consumer goods (71 per cent). In-depth analysis of the consumer goods
category shows that textiles and clothing made up the bulk of the expenditure (67 per cent),
followed by alcohol (17 per cent), and tobacco (10 per cent).

Over half of the Company’s expenditure on textiles and clothing was made up by
purchases of ‘cloth’. While it is not possible to breakdown this item any further using the
Company’s accounts as these purchases were listed under the broad heading of ‘clothiers’, the
primary textile used in the fur trade was a coarse type of broadcloth commonly referred to as
‘strouds’. Most of the clothiers were not named in the Company’s accounts for 1783-1813
(£82,769) but the Company’s minute books make clear that these payments were made to
cloth factors at Blackwell Hall, which included Richard Burford, John Fryer, Pearse &
Bowen, and George Whitehead, several of whom also supplied the EIC. While the
Company did not generally do business with the new breed of Yorkshire ‘merchant-
manufacturers’, the Company’s minutes show that such firms did attempt to procure the

New Researchers - Session II / C

Company’s patronage.\textsuperscript{441} Even so, the broadcloth procured by the HBC was predominantly from the West Country textile industry and remained so until at least 1821.

Table 2

<table>
<thead>
<tr>
<th>Consumer Goods</th>
<th>Total</th>
<th>Capital Goods</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Metallic</strong></td>
<td></td>
<td><strong>Armaments</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ornaments</strong></td>
<td></td>
<td><strong>Gunpowder</strong></td>
<td></td>
</tr>
<tr>
<td>Total \textsuperscript{a}</td>
<td></td>
<td>Guns</td>
<td></td>
</tr>
<tr>
<td><strong>Textiles &amp; Clothing</strong></td>
<td>61,824 (14%)</td>
<td>Lead &amp; Shot</td>
<td>19,143 (10%)</td>
</tr>
<tr>
<td>Blankets</td>
<td>10,833 (2%)</td>
<td>Other</td>
<td>873 (0%)</td>
</tr>
<tr>
<td>Cloth</td>
<td>56,379 (12%)</td>
<td>Total</td>
<td>99,076 (54%)</td>
</tr>
<tr>
<td>Haberdashery</td>
<td>20,647 (5%)</td>
<td><strong>Metalware</strong></td>
<td></td>
</tr>
<tr>
<td>Slops</td>
<td>305,202 (67%)</td>
<td>Iron</td>
<td>33,894 (18%)</td>
</tr>
<tr>
<td>Other</td>
<td>78,066 (17%)</td>
<td>Kettles</td>
<td>13,152 (7%)</td>
</tr>
<tr>
<td>Total</td>
<td>86,393 (17%)</td>
<td>Knives &amp; Hardware</td>
<td>10,465 (6%)</td>
</tr>
<tr>
<td><strong>Other Luxuries</strong></td>
<td></td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>44,989 (10%)</td>
<td><strong>Lines &amp; Twine</strong></td>
<td>28,221 (15%)</td>
</tr>
<tr>
<td>Glass Beads</td>
<td>14,512 (3%)</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Tobacco</td>
<td>143,960 (32%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>184,808 (29%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Blankets accounted for a further 20 per cent (£61,824) of the textile and clothing purchases and were exclusively sourced from Witney in Oxfordshire, first from Thomas Empson in 1783-1805 (£26,164) and then subsequently from John Early & Sons in 1806-21 (£35,592). The Company’s long connection to the Witney blanket makers was one of the central ways in which the Company’s influence directly extended beyond the metropolitan economy and into the provinces.

Alcohol made up 17 per cent (£78,066) of the overall expenditure on consumer goods and, for the purposes of trade, was either brandy or rum. The Company’s main distiller was Hatch, Smith & Co. who received payments to the sum of £27,945 between 1792 and 1806. While brandy has traditionally been viewed as the mainstay of the Company’s alcohol trade, the London minute books suggest that rum became the principal liquor supplied after 1810 as this year was the last to mention brandy.\textsuperscript{442} Subsequent entries in the Company’s minutes are littered with discussions about whether to purchase Jamaica, Leeward, or Tobago rum.

Tobacco was another key trade item and made up 10 per cent (£44,989) of the expenditure on consumer goods over the period (table 5). There were several varieties purchased, including Virginia leaf tobacco, English roll tobacco, and imported Brazil tobacco. The quality of the latter was especially prized by Aboriginal peoples.\textsuperscript{443} There were at least eight suppliers of tobacco to the Company. The English roll and Virginia leaf was sourced from just two London firms: Sainsbury & Co., tobacconists at 22 Ludgate Hill, in 1783-96 (£1,768) and Langford & Currey, tobacconists at 8 Shoemaker Row, Blackfriars, in 1797-1821 (£41,455).\textsuperscript{444} In contrast, supplies of Brazil tobacco were either acquired from metropolitan tobacco brokers or were purchased by agents in Lisbon who arranged its

\textsuperscript{441} Willmott, ‘Strouds’, p. 211.
\textsuperscript{443} Ray, Indians, pp. 143-4.
shipment to London. In 1783-8, there was a regular correspondence with Mellish & Devisme in Lisbon for this purpose.

For the producer goods, most of the expenditure was on armaments (54 per cent). This included guns, gunpowder, and lead and shot. Metalware made up 18 per cent of the expenditure on producer goods and mainly included ‘ironmongery’, which consisted of items such as bayonets, ice chisels, and hatchets.\(^445\) Virtually all of the producer goods were purchased from metropolitan tradespeople. For instance, the majority of the guns (£34,732) were supplied by William Wilson & Son, gun-makers at 154 Minories, London, for the full 39 years of this study.\(^446\) Pigou, Andrews & Co., gunpowder merchants at 34 Throgmorton Street, supplied the Company with gunpowder for twenty-seven years (£31,162).\(^447\) Similarly, for thirty years between 1787 and 1816 (£10,294), Thomas Izod, brazier at 6 Adams Place, Borough High Street, Southwark, was the Company’s supplier of kettles.

There were direct connections with provincial industries however. The knives supplied to the Company in 1789-1820 (£5,465) came from Russell & Co. of Birmingham who were large-scale exporters of Birmingham and Sheffield ironware.\(^448\) Quality was a key concern for the Company in metalwares, as deficiencies in the metal were accentuated in the low temperatures of Hudson’s Bay. On 13 December 1809 Foster of Moreton & Foster attended a general meeting to answer complaints about their supplied hatchets and ice chisels.\(^449\) Thereafter a representative of Moreton & Foster appears to have attended a committee meeting each year to receive detailed instructions from the Company.\(^450\) In essence, one of the key ways that the Company tried to overcome the challenges posed by the extreme cold was by redoubling its efforts to source high-quality metalwares.

**Conclusion**

This paper has shed light on the HBC’s role in the metropolitan economy between 1783 and 1821. The Company’s commodity export trade roughly doubled over the period but this expansion was far from uniform as the trade proved highly susceptible to the high inflation of the Napoleonic Wars. Even so, the Company provided a reliable and secure source of income to over 100 tradespeople and the Company established a large number of long-term relationships with its suppliers. Rather than poor business practice, these lasting relationships were the result of the Company’s preoccupation with sourcing high-quality trading commodities and the highly specialized nature of the fur trade. While the Company’s influence rarely extended beyond London, there were direct connections made with provincial manufacturers when these proved expedient. In many ways, the scope of the HBC’s commodity export trade mirrored that of the EIC but the scale of the two companies’ operations was poles apart. Yet, as the EIC fought a losing battle to retain its trading privileges, the HBC managed to obtain an extended Charter in 1821. At least part of the reason for this was that a modest trade in an isolated environment with little prospect for expansion did not attract the indignation of British merchants and manufacturers.

\(^{446}\) Kent’s Directory, 51st Edition (1783).
The economic history of international trade in the first era of globalization traditionally focuses on existing trade between two countries. That is, the focus lies on active trade relations. Most accounts in economic history only explore this so-called intensive margin of trade, i.e. how much countries trade. This question has been answered largely with a focus on technology differences or endowments or with gravity variables, using rather aggregate data. But Trefler’s (1995) conundrum of ‘missing trade’ – too often there was no trade where we should expect trade according to classic theory – suggests that there is more to reveal. Estevadeordal and Taylor (2002) confirm the presence of this phenomenon for pre-1914 trade.

The introduction of firm heterogeneity into trade economists’ thinking has put market entry, and related to this, fixed entry costs on the radar (Melitz, 2003). This yields another interpretation of missing trade. ‘New new trade theory’ tells us that inactive trade relations can also be informative – and that the extensive margin of international trade (is there trade at all?) as important as the intensive margin. Datawise this requires a new perspective: ideally, we would like to have the universe of the data on trade flows, not only a sample, and especially not a sample with only positive flows. Economists working with modern data regularly find that a substantial part of the adjustment to changing trade costs is actually happening at the extensive margin. Moreover, even on the aggregate, that is, on the country level, roughly half of all potential trade partnerships are inactive in today’s international trade: Zeros constitute the majority of observations (Helpman et al., 2008). This stylized fact is even more prominent on the firm (Eaton et al., 2004) or product level (Hummels & Klenow, 2005).

The research on today’s globalization strongly suggests that we should observe such a dominance of zeros also in data for the first era of globalization – probably even more so given that today the world is more integrated than 120 years ago. However, not too much has been written on how much missing trade in a ‘new new trade theory’ sense there was back then. Only very few papers from economic history have looked at the extensive margin so far (e.g. Keller et al., 2011, Huberman et al. 2015). Market entry for this period is still rather poorly understood. Against this, the question on why trade relations were established in the first place is the focus of this paper.

To shed more light on this I use a subset of my re-compilation of the Imperial German trade statistics (mostly from the Statistik des Deutschen Reichs; details in Hungerland, 2016). There, I construct a completely new dataset on Germany’s foreign trade for the three decades ahead of World War I. The subset underlying the present study covers (so far) the years 1897 to 1913.451 Trade is recorded in marks within 1128 distinct Standard International Trade Classification (SITC) 5-digit product categories,452 and with 91 trading partners. It is the most disaggregated data available. Basically all of Germany’s contemporary exports and imports were registered. That is, the data features something which is uncommon in economic history: It covers the complete universe of the data, not only a sample of it.

451 I am still working on extending the series backwards, ideally back to 1880. This will come, however, at the price of fewer SITC 5-digit product categories.
452 In Hungerland et al. (2016) we discuss the details of this translation exercise, in which more than 18,000 single product categories were translated.
Figures 1 and 2 plot the original product level data – i.e. before the product categories were aggregated to SITC 5-digit categories – over time and space, respectively. And this data is full of zeros. Figure 1 shows that around 70 per cent of all country-product trade relationships were zero, i.e. inactive, over time. Figure 2 shows the aggregated product-level trade flows per country, ordered by distance to Berlin. Distance and economic size appear to significantly shape the pattern of Germany’s external trade. It seems that the closer and bigger an economy is, the more it trades with Germany – but the substantial export activity to faraway places hints at other trade frictions. In this vein, another feature in the data is that exports generally dominated the direction of trade. Imports, on the other hand, were only sourced from a few countries in a few product categories. All this strongly suggests that many of the potential trade relationships were inactive, and that something must have precluded Germany from trading more extensively with abroad. While gravity is very likely to be at work, other trade frictions matter, too – and I reckon these relate to market entry costs.

453 I am still working on various adjustments to these graphs, i.e. using the actual SITC categories instead of the original, partially much finer, but volume-specific German product categories.

454 In this graph, country names had to be dropped from the horizontal axis due to formatting issues (solved in the Latex version).
Against this background, I argue that these zeros are not statistical artefacts nor endogenous in the sense that the protectionist agenda of the Imperial German statistical office renders these zeros uninformative for exploring the role of fixed costs. Focusing on exports only, I first find on a descriptive level that what happens at the extensive margin is quantitatively important. Figure 3 presents a simple decomposition of exports following Brenton and Newfarmer’s (2007) approach. It allows us to distinguish between the extensive and the intensive margin. It is known that German exports drastically rose in that period, which mirrors in the 111.1 per cent growth in the period under study. However, once we differentiate between the margins, various new insights emerge. The intensive margin was on balance a negative contributor to export growth. Of course, trade relations intensified (contributing 51.5 per cent to export growth), but other country-product trade relationships weakened (-24.6 per cent). Moreover, more country-product trade relationships ‘died’ (-55.2 per cent), i.e. there was trade in a certain product category in 1897 but not in 1913. Although Brenton and Newfarmer (2007) count this extinction of product-level trade to the intensive margin, it points to the fact that the question of whether there is trade at all in a given category or not, is important. Turning to the extensive margin, the most substantial contribution of German export growth comes with 113.7 per cent from trade in new products to new markets – something what development economists working on trade call ‘discovery’. Also other sources of extensive growth are positive.

Figure 3: Decomposition of Germany’s export growth, 1897-1913

Based on 1128 distinct SITC 5-digit product categories.
Source: Own calculations based on data from Hungerland (2016).

I add various covariates, and ask: What explains these zeros? I wonder what allowed Germany to expand its export activity so drastically. Was it chance (geography), culture, trade policy, or other government policies? I find that more nuanced economic mechanisms explain this phenomenon than previously thought. To motivate my point I use a simplified version of Chaney’s (2008) model of international trade. My estimations are run with the Pseudo Poisson Maximum Likelihood Estimator (PPML) by Santos Silva et al. (2014), suitable for my kind of data. It allows us to estimate the effect of various trade frictions both on the extensive and intensive margin as the double censored nature (with respect to the lower bound, i.e. zero trade, and to the upper bound, i.e. the number of product categories available) of the data requires more sensible handling than classic OLS estimations.

To my battery of explanatory variables belong the classic gravity variables, i.e. great circle distance from Berlin to any given trade partner and proxies for economic mass. My preferred measure in the present context is population data, as these data are available for a much broader set of polities coming from various sources. Following Helpman et al.

I do not use country fixed effects in order to be able to identify different country-specific drivers of trade and
(2008), I also include data on religion to proxy cultural similarity, which is suspected to matter for market entry. However, my preferred measure of cultural similarity is language similarity, which I construct using a lexicostatistical classification matrix containing indexed measure of language similarity between many different languages (as used by Wolf and Schulze, 2009, based on Dyen et al., 1993). Data on preferential trade agreements comes from Pahre (2008). To capture market entry costs, I add data on German privately organized chambers of commerce abroad I use dummies to control for colonial status, both whether the polity was a German or another empire’s colony. I also control for common borders (contiguity), gold standard membership, sanctions and entrepôt trade and treaty ports, island status, landlockedness. Moreover, I have sufficient sources on alliances, and diplomatic staff at hand (especially so-called Handelsattachés, who were supposed to specialize in promoting German exports), but I have not yet arrange the data suitably for estimations. The same holds for migration data which I seek to take from Willcox (1929).

My – preliminary and very tentative – estimations suggest that variable trade costs matter, but they are only part of the story. Fixed market entry costs appear to have precluded substantial amounts of trade. First, gravity is – as expected – at work. Distance (as a proxy for variable trade costs) and economic mass (irrelevant of its proxies GDP or population) matter. However, when using population as a proxy, the economic impact is smaller. More importantly, there are clear differences in the size of the coefficients when differentiating between the intensive and the extensive margin. Generally speaking, gravity forces are much more dominant at the intensive margin, but less so at the extensive margin. On the other hand, the proxies for market entry appear to explain more what is going on at the extensive margin. Common language as a proxy for cultural similarity is economically small but statistically significant. Common religion, on the other hand, completely fails to matter, independent of which margin we look. Trade policy, precisely multilateral trade agreements, are important for both margins, but much more on the intensive margin. This makes sense assuming that trade agreements were rarely made with countries in which there was previously little trade. The presence of chambers of commerce – at first surprisingly – turns out to be rather marginal for explaining trade creation or trade intensification. But for the period under study, the German industry just started to promote its products abroad using these chambers (in fact, there were only eleven of them). Geography, i.e. contiguity, island status and landlockedness matter too, especially for the establishment of trade relations. Sanctions were also rather effective, but in fact only Greece was subject to German sanctions. Colonial status deterred entry if it is not a German colony. The opposite is true for German colonies. Finally, being on the gold standard was important for both margins, but much more so for the intensification of trade.

Including economic diplomacy variables as well as data on migration will probably change the picture slightly, as the abovementioned number of Handelsattachés are certainly a better proxy for trade-promoting policies. Moreover, given that Germany experienced massive emigration up until the 1890s, the literature on trade and migration suggests that this also greatly promoted market entry of German products. Alliances were probably secondary, but trade and diplomacy often interact, so it is necessary to control for that at a later stage.

Summarizing the above, I have argued that ‘New new trade theory’ implies another dimension of missing trade, namely zero trade in the presence of fixed market entry costs which preclude the establishment of trade on the product level. Using a new, extremely granular and exhaustive dataset on Germany’s foreign trade for the first era of globalization, I show that differentiating between the extensive and intensive margin is important as it reveals how different types of trade costs affect international trade.

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456 I refrain from presenting any estimation tables here due to ongoing data collection and refinement (and for time and space reasons).
The great trade bust: political frictions, physical frictions and the interwar distance puzzle

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Even in the light of the Great Recession, the fall of world trade of the 1930s remains unprecedented. In contrast to the recent economic crisis, increasing trade frictions rather than ebbing global demand drove much of the contraction in world trade. At this point, however, the scholarly consensus ends. While historians and economic historians (e.g. Irwin 2012) have frequently emphasized the relevance of political trade barriers, Estevadeordal et al. (2003) claim that the rapid increase in transport costs was a, if not the, major cause for the trade bust associated with the Great Depression. Jacks (2014, p. 36) is sceptical and suggests that analysing the relationship between the different frictions systematically is key to understanding the Great Trade Bust.

To shed light on their relationship, this study employs micro data, narrative evidence, the standard macroeconomic empirical trade model, and micro-economic reasoning. Despite increasing real transport costs as documented by micro data, the standard macroeconomic trade model suggests that the relevance of distance for trade as measured by the distance elasticity declined. This paradox, which one could call the interwar distance puzzle, has two implications. First, if the importance of distance between countries decreased, the proposition that transport costs were the major driver of the Great Trade Bust is unlikely to be true. Secondly, if the distance elasticity was falling in absolute terms despite increasing transport costs, another trade friction must have affected it. Theoretical considerations suggest that increasing tariff barriers render the distance relatively less important, thus counteracting and – in the case of the interwar period – overcompensating the increase in transport costs. Taken together, the results of this study provide firm empirical grounds for earlier scepticism (e.g. Hynes et al. 2012; Irwin 2012) regarding a transport friction-led explanation for the Great Trade Bust. Furthermore, they suggest that the relative magnitude of political trade and physical trade frictions determines the importance of distance for trade.

1. The macro picture – documenting the interwar distance puzzle

This section establishes the interwar distance puzzle by presenting novel data documenting the surge in freight rates and the simultaneous decrease in the importance of distance as documented by the estimation of a gravity model. As in the rest of this study, the focus lies on intra and extra European trade as detailed trade and transport data availability is limited for trade relationships between non-European countries.

To assess the role of transport costs, this study provides novel data for two types of transport costs, overland railway charges and maritime freight rates. The focus of this section, however, lies in the discussion of the monthly maritime freight rate data. Real freight rates for German railways can be found in appendix 1. The rationale for gathering novel data (from Wickizer 1938) is conflicting evidence in previous studies (Estevadeordal et al. 2003; Mohammed and Williamson 2004). These studies have a long-run objective and thus focus on annual data employing questionable deflators. In times of strong fluctuation, both in prices and nominal rates, the annual frequency might not be enough to capture the erratic behaviour of the series, especially if prices and freight rates refer to different months of the year. To

457 This counter-intuitive result can be thought of as the interwar distance puzzle as it mirrors the so-called missing globalization or distance puzzle for the postwar period, which documents an increasing importance of distance for international trade despite falling transport costs and apparent globalisation (Disdier and Head 2008).
avoid such problems, this study focuses on one type of good only (grain) and matches exact prices and freight charges for the same qualities for every month. There are multiple reasons to focus on the grain market. First, increases in freight charges have only a minor impact on high-value manufactured and semi-manufactured goods, as freight charges constitute a minuscule part of the final price. Thus any results presented here provide an upper bound for the importance of transport costs. Second, the largest part in terms of volume of international seaborne trade is in low-value bulky goods, of which grain constitutes an important part. For the period under consideration, Wickizer (1938, p. 77) roughly estimates that 20 per cent to 25 per cent of the actual volume of world trade in tons was in grains. Finally, these data on freight rates can be exactly matched with the prices for grain qualities given in *Monthly Crop Report* and *International Yearbook for Agriculture* by the International Institute of Agriculture to calculate actual ad valorem transport charges.

The left panel of figure 1 illustrates the surge of real maritime transport costs by showing the average for four routes\(^{458}\) in ad valorem equivalent terms. From 1930 onwards, there was first a doubling of the rate and after it petered out well above the previous level. Most of this increase is, of course, driven by the rapid fall in prices. Nominal rates were indeed falling, but they could not adjust to the ever-falling prices in the interwar period. This led to an increase of the transport friction, for which real ad valorem rather than nominal charges matter.

![Figure 1: The Interwar Distance Puzzle](image)

The right panel of figure 1 employs an alternative measure of the physical trade friction between countries, the distance elasticity from the gravity model. This elasticity is estimated with the PPML estimator from a balanced sample of more than 1200 aggregate trade flows for 12 repeated cross-sections. I follow the standard micro-founded gravity equation by Anderson & van Wincoop (2003) and add various controls for robustness checks described in the long version of this study. The trade data is from Gow & Hicks (2013). The decrease of the elasticity in absolute terms signals the diminishing importance of distance: trade became biased towards countries further away. This result lends little support to the idea of an overarching importance of amplifying transport costs for the Great Trade Bust.

Furthermore, these two graphs constitute a major paradox: how could the distance between countries become a less important trade friction, if transport costs are surging? The next section shall illuminate a potential mechanism.

### 2. What does the distance elasticity capture?

This section illustrates why we would expect the importance of distance to increase in the first place when transport costs are rising. While highly intuitive, Bosquet and Boulhol (2015) challenge this proposition. By deriving the distance elasticity from the demand function for imports and realistically assuming the presence of a non-distance related trade component (i.e.

\(^{458}\) New York - Hamburg, North Atlantic - United Kingdom, La Plata - United Kingdom & Continental Europe, Australia - United Kingdom & Continental Europe.
a specific tariff), this section firstly shows that the effective distance between countries would become a larger friction if transport costs increase. Secondly, these considerations suggest that increasing tariffs would lead to a decrease in the importance of distance, because varieties from further away become relatively cheaper. Following these insights, one possible explanation for the interwar distance puzzle is an overcompensation of the ‘transport cost’ effect by the ‘tariff effect’.

I follow the very basic assumptions of the model Hummels et al. (2009) to illustrate the argument. In a world of \( N \) countries the representative consumer \( i \), having a taste for variety, derives the following utility from the Armington differentiated goods \( q \)

\[
U_i = q_{ii} + \sum_{j=1}^{N} \frac{q_{ij}}{q_{ij}^\sigma} \]

where \( q_{ii} \) is \( i \)'s numeraire (and produced at home) and \( q_{ij} \) is the variety produced by \( j \) and imported by \( i \). \( \sigma \) is the elasticity of substitution between goods and positive (\( \sigma > 0 \)). To analyse the effect of different types of trade costs on the distance elasticity, I assume the following trade costs structure that is added to the price \( p_j \) for an imported variety having the price \( p_{ij} \):\[
p_{ij} = p_j + \tau + \delta D_{ij}
\]

where \( \tau \) is a specific tariff, \( \delta \) is the per kilometre shipping cost for a unit of \( q_{ij} \) and \( D_{ij} \) the distance between \( i \) and \( j \). If we focus on the case of the \( i \)'s consumption of the imported good \( q_{ij} \), it is clear that the relative marginal utility from \( q_{ii} \) and \( q_{ij} \) must equal the ratio of the prices of the two goods such that:

\[
\frac{\sigma}{\sigma - 1} q_{ij}^{\frac{1}{\sigma}} = \frac{p_{ii}}{p_{ij}}
\]

and rearranging and substituting the expression for \( p_{ij} \) yields

\[
q_{ij} = \left[ \frac{\sigma}{\sigma - 1}(p_j + \tau + \delta D_{ij}) \right]^{-\sigma}
\]

The elasticity of the demand for \( q_{ij} \) with respect to the distance \( D_{ij} \) is

\[
E_D = \frac{\partial q_{ij}}{\partial D_{ij}} \frac{D_{ij}}{q_{ij}} = \frac{-\sigma \delta}{p_j + \tau + \delta D_{ij}}
\]

To better understand the impact of a change of transport costs on the distance elasticity, we take the partial derivative of the distance elasticity with respect to the unit transport costs and find that it is negative:

\[
\frac{\partial E_D}{\partial \delta} = \frac{-\sigma(p_j + \tau + \delta D_{ij}) - \delta(-\sigma D_{ij})}{(p_j + \tau + \delta D_{ij})^2} = \frac{-\sigma(p_j + \tau)}{(p_j + \tau + \delta D_{ij})^2} < 0
\]

This means that the increase in transport cost should lead to a decrease in the distance elasticity. As the distance elasticity is negative, this decrease translates into a larger absolute value and thus makes distance more important. However, the formula for the distance elasticity suggests that the role of distance for trade is not solely determined by per unit transport costs. To analyse the effect of a marginal increase in tariffs, we take the partial derivative of the distance elasticity with respect to \( \tau \) and find it to be positive:
This suggests that tariff increases lead to an increase in the distance elasticity (or decrease in absolute terms), signalling the decaying importance of distance. These results help us to make sense of the interwar distance puzzle. It suggests that the importance of distance can fall despite increasing transportation costs. One interpretation stemming from these theoretical considerations would be that the ‘tariff effect’ on distance might have been stronger than the ‘transport cost effect,’ leading to the empirical result of a declining importance of distance in the standard gravity model despite increasing transport costs. In other words: while transport costs drive the world apart and thus increase the effective distance between countries, the erection of higher tariff barriers might have ‘shrunk’ it by a larger amount, because they make varieties from places further away relatively cheaper. Considering the horse race of increasing trade frictions to explain the fall in world trade, it is apparent that in this case tariffs would be the more important driver of the bust in world trade during the interwar years. The next section seeks to compare the levels and changes of these two types of trade frictions during the interwar period to lend further support to the proposed mechanism.

3. Comparing levels and changes

In section 1 already discussed that maritime freight rates were decreasing in nominal terms but surging in real terms due to the fall in prices. In contrast specific tariff rates were increasing in a number of European countries as hand collected data for wheat in figure 2 illustrate. This rise in nominal tariffs is well documented in the historiography of the Great Depression (e.g. Irwin 2010) and contemporaries alike (see e.g. Morrison-Bell 1930).

In general, European tariff rates were typically higher than freight rates in nominal terms, the latter ranging from around 8 cents for New York to Hamburg to 20 cents per bushel for the North Pacific – Europe route in 1925. In comparison, specific tariffs for wheat in this year already exceeded this mark in many European countries. This trivial finding has large implications: While a fall in prices would increase both the tariff and transport friction to the same extent in percentage terms, the ad valorem change would be larger for the tariff friction. Ultimately, it is this ad valorem wedge that matters for trade.

Finally, figure 3 takes the micro-perspective of a Canadian wheat exporter in Manitoba in 1932 relying on the same data sources as beforehand. It compares the relative ad valorem costs that this exporter would face for selling her grain on the European market. As mentioned before, the focus on a low value bulky commodity such as wheat biases strongly
New Researchers - Session II / C

towards an overemphasis of transport costs. However, the maritime freight charges (on the right of the figure) appear negligible relative to the tariffs the exporter would face. This is true for all countries except for three remaining free traders and Switzerland, but we shall focus on the German case for a truly extreme but illustrative example.

Figure 3: Relative importance of trade frictions for wheat

The freight rate for wheat was about 5 cents per bushel (8.5 per cent ad valorem), whereas the German tariff amounted to 162 cents for the same quantity (300 per cent ad valorem). A back of the envelope calculation suggests that instead of paying the German tariff, the American exporters could have shipped the wheat more than four times around the globe. How important, one might ask, was a marginal increase in transport costs for redirecting wheat exports away from Germany?

In contrast to freight rates, tariffs were increasing in nominal terms in many countries. Furthermore, the fall in prices accentuated the relative importance of tariffs. As the latter were typically higher than nominal freight charges, a drop in prices led to higher ad valorem changes of tariffs than transport costs. This exercise lends further support to the notion that increases in transport costs are not likely to have played a larger or as large a role as the surge in tariffs as hypothesized by Estevadeordal et al. (2003). Moreover, the findings regarding the relative importance of the two frictions are a necessary condition for the proposed solution for the interwar distance puzzle to hold.

Conclusion

This study demonstrates that the surge in real transportation costs is unlikely to have been a major cause for the re-orientation and bust in trade during the interwar period. Micro evidence suggests that real maritime transport costs were indeed increasing. While large in percentage terms, the relevant metric (ad valorem equivalent transport costs) suggests a rather small increase compared to tariffs, even though choosing wheat for this comparison biases strongly against the result. This might explain the interwar distance puzzle: a situation, in which the importance of distance for trade diminished despite a surge in transportation costs. Higher tariffs make it relatively cheaper to import varieties from further away, and thus reduce the importance of distance. It is likely that the surge in the tariff friction dominated the one in the physical friction in the interwar years. This result can also inform the debate about the postwar distance puzzle, where we witness the opposite effect. In a time of liberalization and falling transport costs, distance seems to have become more important.

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460 Assuming the ship could travel the simple great circle distance and cost the mile would remain the same.
Bibliography


Morrison-Bell, C., *Tariff walls: a European crusade* (J. Murray, 1930)


Appendix 1: *German railway freight rates*

![Graph showing German railway freight rates](image)

*Data are deflated by the German wholesale price index. Source: *Statistisches Jahrbuch für das Deutsche Reich*, 1926-1937.*
The unequal demographic transition: income inequality as a fundamental driver of the fertility decline

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One of the most important economic developments of the last two hundred years has been the demographic transition, which lowered population growth in most regions worldwide. First in the West, during the nineteenth century, and a century later in Asia and Latin America, significant reductions in fertility led to an escape from the Malthusian trap into the modern growth era. Lower population growth stimulated economic growth through lower capital and land dilution, enhanced investments in education and health, and temporarily increased in the relative size of the labour force (Galor, 2011).

Scholars have analysed several causal mechanisms that might contribute to the demographic transition and cross-country differences in fertility rates. Murtin (2013) has recently been the first to examine the long-term determinants of the demographic transition, finding that primary schooling is the most robust determinant of the fertility transition. At the same time, Easterly (2007) has shown that inequality is a significant and robust causal driver of differences in education. Could inequality be one of the structural determinants of cross-country differences in fertility rates?

Although some empirical studies have examined the different channels through which inequality affects fertility rates, no study so far has – to the authors’ knowledge – analysed the causal effect of cross-country differences in inequality on fertility. The aim of this study is to examine the role of structural inequality in the demographic transition, using a large panel of countries since 1870. This paper contributes to the literature in three ways. First off, it extends the simple model of Murtin (2013) to show that inequality can lead to higher fertility due to diminishing returns to education. Secondly, the paper establishes a causal cross-country effect of structural inequality on total fertility rates. Using instrumental variables approach, we find a strong and significant effect of structural inequality on fertility, even when controlling for average levels of health and education. Thirdly, in line with the Unified Growth Theory literature, our structural equations models (SEM) support the view that the greatest effect of income inequality on fertility rates is indirect and runs through infant mortality and levels of human capital formation. Moreover, variations in land inequality explain a significant fraction of cross-country fertility differences, both through a direct effect on income inequality, and an impact on human capital and infant mortality levels. We do not find any evidence for a significant relationship between income inequality, the quality of political institutions and fertility rates.

Theory
We extend the simple model of Murtin (2013) by including groups with different levels of income. Murtin’s model is part of a large family of models that examine the quantity-quality trade-off (Becker, 1960; Galor, 2000; De la Croix & Doepke, 2003). Parents derive utility from consumption and the total human capital they leave to their children. The utility from children’s human capital can be motivated by a guarantee for a pension during retirement, or parents may derive intrinsic altruistic utility from their children’s life quality. Parents maximize:

\[ U(c, n, e) = \ln(c) + \ln(nh) \] s.t. \[ c + wn + ren = y \] 

\[ U(c, n, e) = \ln(c) + \ln(nh) \] s.t. \[ c + wn + ren = y \] [1]
Where $c$ is parental consumption, $\beta$ is the relative importance of children’s human capital, $s$ is the survival probability of children, $n$ is the number of births, $h$ is offspring human capital, $\varphi$ is the marginal cost of raising a surviving child, $\tau$ is the marginal cost of each year of schooling $e$ paid for each surviving child, and $y$ is household income. Furthermore,

$$h = (1 + e)e^\eta \eta < 1; \quad \varphi(y) = \alpha + \eta y; \quad \theta > 1$$

where $\varphi$ is the cost of raising children, which consists of a fixed costs ($\alpha$) and a time cost ($\tau$) that is proportional to income. If education is positive, and $\alpha$ is negligible to income, the optimal amount of children is (Murtin, 2013):

$$\eta^* = \frac{\gamma (1 - \eta)}{\alpha (1 - \eta)} \left( \frac{1}{\theta y} \right)$$

[3]

The fertility rate is thus decreasing (increasing) in the survival (mortality) rate, and increasing in the cost of education. To sketch the relationship between income distribution and fertility, we split the population into two groups, a rich one (R) and a poor one (P). When $y$ is the mean income, $y_P$ and $y_R$ can be expressed as:

$$y_P = y(1 - \gamma); \quad y_R = y(1 + \frac{N_P}{N_R})$$

[4]

where $N_P$ and $N_R$ are the relative weights of the two income groups. Holding mean income and group weights constant, $\gamma$ can be interpreted as the inequality parameter (Bertola et al., 2014). An increase in $\gamma$ corresponds to a redistribution of income from the poor to the rich. The total fertility rate is then the sum of the weighted fertility rate of each group:

$$n = N_P n_P + N_R n_R$$

[5]

Assuming an interior solution, the expression for $n$ equals

$$n = \frac{N_P y_P (1 - \eta)}{\theta y} \left(1 + \frac{1}{\alpha + \tau y P (1 - \eta)}\right) + \frac{N_R y_R (1 + \eta)}{\theta y} \left(1 + \frac{1}{\alpha + \tau y R (1 + \eta)}\right)$$

[6]

And the derivative of fertility with respect to the inequality parameter

$$\frac{\partial n}{\partial y} = \frac{N_P y_P (1 - \eta)}{\theta y} \left(1 + \frac{1}{\alpha + \tau y P (1 - \eta)}\right) - \frac{N_R y_R (1 + \eta)}{\theta y} \left(1 + \frac{1}{\alpha + \tau y R (1 + \eta)}\right)$$

[7]

which is positive as $1 - \gamma < 1 + \frac{N_P}{N_R}$.

Fertility is thus an increasing function of inequality. The derivative is the sum of the positive effect of the poor on fertility (the left part of [7]) and the negative effect of the rich on fertility (the right part). The positive relationship is a direct consequence of the concave human capital function: constant ($\eta = 1$) or increasing ($\eta > 1$) returns would result in a zero or negative effect of inequality on fertility. For a concave human capital function, the quality-quantity trade-off becomes less pronounced as income (and thus education) increases. A shift in income from the rich to the poor (i.e. a lower $\gamma$) would result in a decrease in the poor’s fertility, which would be greater than the increase in the fertility of the rich. This mechanism is essentially the ‘cost of education’ channel discussed in the literature (De La Croix & Doepke, 2003). Similarly, it is possible to show how inequality may result in higher fertility when it causes higher (infant) mortality rates. We will come back to this ‘health channel’ later.
Methodology
As a starting point, we take the panel dataset of Murtin (2013) with information on inequality, health, income and education for a large number of countries from 1870 to 2000. Our dependent variable is the total fertility rate (TFR), as taken from the data published by the Gapminder Foundation. The TFR indicates the average number of children a woman can expect to give birth to during her lifetime, based on the fertility rates of specific age cohorts and her life expectancy. The main independent variable of this study is income inequality, for which data were taken from the Clio Infra dataset. The dataset comprise 67 countries, of which eleven display balanced data for the decades from 1870 to 2000. There are countries from every continent: six from Northern Africa and the Middle East, 16 from Sub Saharan Africa, 16 from Latin America, six from Asia and Oceania and 24 OECD countries.

We examine the relationship between inequality and fertility using the following simple panel model:

\[ \log n_{ith} = \alpha + \beta \log H_{ith} + X \gamma_{ith} + \theta_t + \mu_r + \epsilon_{irt} \]  \[ \text{[8]} \]

where \( \beta \) denotes the effect of income inequality (II) in land \( i \) in decade \( t \) and region \( r \). \( \gamma \) denotes the vector of coefficients of matrix \( X \) which includes a set of controls used by Murtin (2013), \( \theta_t \) is a decade fixed effect, \( \mu_r \) is a region fixed effect, and \( \epsilon_{irt} \) the error term. We estimate the model with pooled OLS and cluster at the country level.

Results
Table 1 presents the results of the model described above. For all specifications, income inequality shows the expected significant and positive conditional correlation with TFR. In the full specification with all controls and fixed effects, a 10 per cent increase in income inequality is associated with an increase of 1.7 per cent in the TFR. In most cases, the control variables are significant and show the expected signs. The relationship between TFR and inequality weakens when health or educational variables are included.

These findings are robust to several checks. First, we omit each of the regions one by one. The inequality coefficient remains significant at the 5 per cent level for the sample excluding Africa, the Americas or Asia, and at the 10 per cent level when we omit Western countries. Additionally, following Baten & Mumme (2013) we use height inequality as a proxy for income inequality. Even though the correlation between height and income inequality is only 0.241, the results are roughly the same.

Next, it is important to consider endogeneity. The OLS results could be affected by reverse causality. For example, Piketty (2014) argues that lower population growth leads to inheritances being spread over fewer children. The resulting higher levels of wealth inequality translate into more skewed income levels. Two other concerns are confounding unobservables, and, most prominently, attenuation bias associated with the measurement error of the Gini coefficient.

The use of instrumental variables can overcome these problems, allowing for a causal interpretation of the results. First, to get rid of simultaneity we estimate the model with fixed effects using the ten-year lag of inequality as an instrument. Second, in line with the work of Easterly (2007), Baten & Mumme (2013) and Baten & Juif (2014) we use the combination of two exogenous instruments that are uncorrelated with the measurement error: the climatic and geological suitability for small or large-scale agricultural production – measured as the ratio of land suitable for sugarcane production to land suitable for wheat and rice production – and the interaction of latitude and the population density in 1500.

Table 2 shows the results of the regressions (2SLS) using both instrumental variables, suggesting a strong causal effect of inequality on fertility. The coefficient is much stronger than in the OLS regressions. 50 per cent higher inequality – roughly the difference in the Gini coefficient between Denmark and the United States – causes a doubling of the total fertility rate.
Again, our findings are robust to several tests and checks. First, one might worry about the geological instruments violating the exclusion restriction through their effects on the demand for education and child labour, as tropical countries have a comparative advantage in the production of primary goods that require little schooling. We include a measure of primary exports in the last column, which shows the expected positive relation with fertility but does not significantly alter the inequality coefficient. Second, although the two geological and historical instruments are relatively weak, the Anderson-Rubin test rejects the null hypothesis that they are jointly equal to zero for all specifications (confidence intervals are shown below the t-statistics). Third, The Hansen test rejects over identification for our preferred specifications in the last two columns. Finally, the results of the last column remain roughly the same when we omit individual regions.

How does inequality affect fertility? Besides the role of inequality in the quality-quantity trade-off discussed in the theoretical section, there are three other channels through which inequality might lead to higher fertility rates. First, if higher structural inequality leads to lower health levels and thus lower survival rates, this may be a channel through which inequality affects fertility. Such an effect can be the consequence of positive concave relationship between health and income that has received wide empirical support in the literature (e.g. Rodgers, 2002; Spencer, 2004). Two other theories emphasize the interplay between inequality and power, and how elites might undermine the provision of public education, leading to relatively high educational costs that contribute to higher fertility rates. Engerman & Sokoloff (2002) and Rajan & Zingales (2006) argue that inequality is both the cause and consequence of oppressive institutions. Political elites block the provision of public education because a higher educated mass increases competition for their rents. On the other hand, Galor et al. (2009) argue that it is not the political elite but only big landowners that block proper public education. Landowners, in contrast to industrialists, have an interest in constraining the mobility of rural workers.

We use structural equation models (SEMs) to distinguish between the direct and indirect effects of inequality, health, education and institutions on fertility. We estimate three different models: a baseline model to test the indirect effect of health and education, as well as two models including measures of land distribution and institutions. The baseline model contains income inequality, the total fertility rate, the total mortality rate, infant mortality rate, and education levels. GDP per capita levels are taken as exogenous to prevent a nonrecursive unstable system. In addition to several independent variables per equation, we also allow for covariance between the errors of income inequality and its endogenous determinants (fertility, [infant] mortality and education), as well as between the two mortality measures. We include these because we expect common unobservable variables to affect both.

Table 3 shows the results of our baseline model. We distinguish between direct and indirect effects of inequality on fertility. A 10 per cent increase in the Gini coefficient is associated with a direct fertility increase of about 6 per cent, and an indirect rise of about 16 per cent. The total effect is roughly similar to our IV estimates. Almost three quarters of the total effect of inequality on fertility is thus indirect through health and education.

Next, we estimate a model where we include land inequality as a determinant of inequality, fertility, infant mortality, and education. Surprisingly, institutions show no significant relationship with income inequality, either as a cause of consequence. Moreover, institutions are not associated with higher inequality levels or lower fertility levels.
Table 1: *Pooled OLS*

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<td></td>
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*Note:* T-statistics in parentheses. Dependent variable is total fertility rate. All errors clustered at country level.
* p<0.10, ** p<0.05, *** p<0.01
Table 2: Instrumental Variables

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Note: T-statistics in parentheses. Dependent variable is total fertility rate. All errors clustered at country level. Column 1 uses the lagged Gini as an instrument. All other columns use both the climatic and historical instruments. Heteroskedasticity-robust Anderson-Rubin 95% confidence interval in parentheses. These have correct coverage properties in the presence of weak instruments while standard Wald tests do not.

* p<0.10, ** p<0.05, *** p<0.01
Table 3: *Structural equation model*

|        | Coeff. | Rob, SE | Z     | P>|Z|  | 95% C.I.  |
|--------|--------|---------|-------|------|----------|
| Direct | .627969| .24703752.54 | 0.011 | .14378441.112154 |
| Indirect | 1.617916 | 0.40937023.95 | 0.000 | .81556562.420267 |
| Schooling | 0.62 | | | |
| Infant mortality | 0.66 | | | |
| Death rate | 0.32 | | | |
| Total | 2.245885 | 0.30427617.38 | 0.000 | 1.6495152.842256 |

*Note: All errors clustered at country level.*
Local government investment in urban infrastructure and mortality decline in England and Wales, 1861-1900

Jonathan Chapman, European University Institute
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Supervisor: Professor Philip T Hoffman

Between 1851 and 1900 mortality rates in Britain declined by almost 20 per cent. Over the same period, local government expenditure on urban infrastructure increased rapidly, so that by 1890 spending by local authorities accounted for over 41 per cent of total public expenditure (Lizzeri and Persico, 2004), with much of the money used for clean water and sewers. This simple pattern leads to the natural conclusion that government sanitation expenditure was the driving force behind the improvement in life expectancy. This belief is also supported by evidence from other countries showing that investment in sanitary infrastructure, such as clean water supply, can have positive effects on mortality (e.g. Cain and Rotella, 2001; Troesken, 2002; Ahuja, Kremer and Zwane, 2010).

Yet the role of public health in explaining British mortality decline in the nineteenth century remains disputed. Although mortality rates fell dramatically after 1850, the classic explanation – due to McKeown (1976) – has emphasized the importance of better nutrition rather than improved sanitary environments. This conclusion followed from estimates showing that the greatest contribution to the decrease in mortality rates during this period came from reductions in airborne, rather than waterborne or foodborne, diseases. However later work has questioned this conclusion, arguing that it overlooks the potential contribution of sanitary reform in reducing overcrowding (and hence deaths from airborne diseases) and does not account for differences in the death rates from different airborne diseases (e.g. Woods, 1984; Szreter, 2005). After accounting for the latter factor Szreter (2005) argues that “the classic sanitation diseases come to the fore” in explaining the mortality decline after 1850 (p.115).

This study addresses these issues through constructing and putting to use a dataset identifying investment by town councils in urban infrastructure across England and Wales between 1866 and 1900. In contrast to previous studies, I use data from a large number of districts, rather than relying on particular case studies (e.g. Woods, 1984) or a small sample of towns (Millward and Sheard, 1995; Millward and Bell, 1998). By combining this expenditure data with mortality information drawn from Registration reports I am able to estimate the relative importance of spending by town councils in reducing mortality, accounting for changes in town wealth. I estimate that local government investment accounted for approximately one-fifth of the decline in total mortality between 1861-70 and 1891-1900: a sizeable effect, but not sufficiently large that a story emphasizing the importance of improved nutrition can be disregarded.

Data

I measure mortality using information from four decennial supplements of the Registrar General between 1871 and 1901 (digitized by Woods, 1997). Each report identifies causes of deaths by age group in Registration District for the previous decade. I use this data to estimate crude death rates for different age groups including both total mortality and mortality specifically from waterborne disease (defined as deaths from cholera and diarrhoea) – the diseases likely to be most impacted by sanitation improvements.

To capture the importance of urban infrastructure in reducing mortality I use annual information regarding the value of loans outstanding held by town councils. Nearly all spending by councils on urban infrastructure was financed through loans at this time, and so this measure captures the cumulative investment of town councils in amenities over the period. This is preferable to a measure of current expenditure, which may not capture past
investments, and hence the overall state of sanitary environments. Further, most of the loans
taken out by town councils were spent on public goods that we would imagine to have a direct
impact on sanitation – including water supply and sewers – and the amount of loans taken out
was seen as the best measure of sanitary progress by contemporaries (Wohl, cited by Szreter,
1988, p.25).

Information on loans outstanding was collected from the annual *Local Taxation
Returns* in the *Parliamentary Papers* collection. Data were collected for approximately 900
‘urban sanitary authorities’ for each year from 1866 to 1900.\(^{461}\) One complication with the
analysis is that, unfortunately, town boundaries during this period did not match the
boundaries of the Registration Districts for which mortality data was reported. Registration
districts varied in the number of urban authorities they included: large towns comprised whole
(and sometimes multiple) Registration Districts, while some Registration Districts included
multiple smaller sanitary authorities. To address this issue, I link the financial and mortality
data by first identifying the Registration Subdistrict(s) in which each town was situated using
the 1881 census, Vol II. Where town boundaries crossed multiple Registration Districts, town
spending was allocated to each Registration District according to the population residing in
each district at the time of the census.\(^{462}\)

The key independent variable is then the average annual loans outstanding per capita
in each Registration District over the decade.\(^{463}\) We use the per capita measure since many of
these local public goods – e.g. water supply – suffer from important congestion effects (in
other words they are very impure public goods in the theoretical sense).

In addition to the information on loans outstanding, I also use the *Local Taxation
Returns* data to estimate town wealth, utilizing data on the average tax base (‘rateable value’).
I also include a number of control variables based on district demographics collected directly
from decennial censuses or from data provided by Southall (1998, 2004).

The data is used to construct a four-period panel dataset, where each cross-section
relates to a decade reported in the annual reports of the Registrar General. The final dataset
used in the dataset includes a total of 381 districts, comprised of Registration Districts
incorporating an urban area and for which data was available for all four periods.

**Empirical specification**

I estimate the effect of town infrastructure spending on mortality using the following
specification:

\[
\text{death}\_rate_{ij} = \alpha + \beta \text{loansout}_{ij} + \gamma X_{ij} + \delta_0 Z_i + \delta_1 \text{year} + \epsilon_{i,t}
\]

where \(i\) indexes Registration Districts and \(t\) indexes each decade. The variable \(\text{death}\_rate\)
measures the average annual number of deaths per capita over each decade, and \(\text{loansout}\) is
the average level of urban loans outstanding per capita. \(X\) is a vector of control variables, \(Z\)
includes district fixed effects, and \(\text{year}\) is a decade fixed effect.

The basic set of control variables includes district population, district urban
population, percentage population urban, and urban crowding (measured as number of
people/number of houses). In addition, I include the percentage of population aged under 5 as
a measure of the population most vulnerable to disease. In addition, by including district fixed
effects I am able to account for any time-invariant characteristics that may lead to towns
having consistently low (or high) mortality – such as low cost access to a natural clean water

\(^{461}\) Values are translated into constant values using the Rousseaux Price Index (Mitchell 1971, pp. 723-4)
following Millward and Sheard (1995).

\(^{462}\) I combine Registration Districts where towns consisted of multiple districts, or where there were major
boundary changes over the period.

\(^{463}\) Specifically, for each town we estimate the average loans outstanding for the years within the decade for
which data is available.
supply.

In interpreting the results, one concern could be that the coefficient on infrastructure expenditure is capturing the effect of other correlated urban variables such as greater town wealth, and possibly also greater public awareness leading to behaviour change such as more hand-washing. To control for this effect – and to estimate the effect of growing town wealth on mortality – in some specifications I include control variables for the urban tax base per capita. I also include specifications with county-time fixed effects to account for any period-specific factors that affect all towns in a particular county: such as greater understanding of disease or, alternatively, weather shocks. In addition, in unreported regressions I carry out placebo tests using mortality from violence as the dependent variable: as predicted there is no evidence that infrastructure expenditure has any effect.

Results

Table 1 displays the estimated effects of urban infrastructure on mortality both from waterborne disease (specifications 1-3) and all disease (specifications 4-6). The coefficients are standardized: they should be interpreted as the effect of a one standard deviation increase in the independent variable in terms of standard deviations of the dependent variable. Specifications (1) and (4) include sanitary expenditure as the only independent variable (other than the fixed effects), while (2) and (5) include both the basic control variables and the measure of tax base per capita. Specifications (3) and (6) include in addition the county-level time fixed effects.

The results show strong and consistent evidence that greater investment in infrastructure was associated with lower mortality both from waterborne diseases (cholera and diarrhoea) and across all diseases. The significance of the effect on waterborne diseases is reassuring, since we would expect urban infrastructure to target mortality from these causes in particular.

While inclusion of the control for town tax base wealth reduces the estimated size of the coefficient on loans outstanding, it remains strongly statistically significant and relatively large (the magnitude of the effect is discussed further below). Notably, the coefficient on the tax base is statistically significant and negative (albeit not robust to the inclusion of county fixed effects), suggesting an important role for increased wealth, potentially through improved nutrition.

Table 1: Effect of infrastructure spending on mortality rates 1861-1900

<table>
<thead>
<tr>
<th>DV=Waterborne mortality rate (all ages)</th>
<th>DV= Total mortality rate (all ages)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Loan stock p.c.</td>
<td>-0.175*** (0.0288)</td>
</tr>
<tr>
<td>Tax base p.c.</td>
<td>n.a.</td>
</tr>
<tr>
<td>District FE</td>
<td>Y</td>
</tr>
<tr>
<td>Controls</td>
<td>N</td>
</tr>
<tr>
<td>Year FE</td>
<td>Y</td>
</tr>
<tr>
<td>County year FE</td>
<td>N</td>
</tr>
<tr>
<td>Observations</td>
<td>1,524 (1,524)</td>
</tr>
<tr>
<td>Districts</td>
<td>381 (381)</td>
</tr>
</tbody>
</table>

| (3)                                    | (4)                               |
| Loan stock p.c.                        | -0.143*** (0.039)               | -0.150*** (0.021) |
| Tax base p.c.                          | -0.085 (0.056)                  | n.a. |
| District FE                            | Y                                 |
| Controls                               | N                                 |
| Year FE                                | Y                                 |
| County year FE                         | N                                 |
| Observations                           | 1,524 (1,524)                    |
| Districts                              | 381 (381)                        |

| (5)                                    | (6)                               |
| Loan stock p.c.                        | -0.126*** (0.025)               | -0.0765*** (0.024) |
| Tax base p.c.                          | -0.0412 (0.039)                 | n.a. |
| District FE                            | Y                                 |
| Controls                               | N                                 |
| Year FE                                | Y                                 |
| County year FE                         | N                                 |
| Observations                           | 1,524 (1,524)                    |
| Districts                              | 381 (381)                        |

All variables are standardized. Standard errors are adjusted by clustering by district, and are displayed in parentheses. Control variables include district population, urban population, urban crowding, percentage population aged under 5 and percentage population urban. ‘Waterborne’ mortality includes deaths from cholera and diarrhoea.

* p < 0.10 **p < 0.05, ***p < 0.01.

Figure 1 shows the results of analysing the effects on total mortality at different ages,
by presenting point estimates and confidence intervals for the coefficient on loans outstanding per capita. While the point estimate is negative for all age groups, the estimated effect is only statistically significant for those aged under 5 and those aged between 5 and 20. This is likely to reflect in particular the greater susceptibility of children to waterborne disease.

Figure 1: Coefficient plot from regressions of different age groups

Note: Each line represents the coefficient and 95% confidence interval for the coefficient on loans outstanding per capita in regressions for the respective age groups, based on specification (5) above.

Magnitude of the effects

The above analysis indicates that town councils’ investment in urban infrastructure was successful in reducing urban mortality. However, it does not address the relative importance of this improvement in public health in the overall fall in mortality over the period. To address that question, I now use the regression results to estimate a counterfactual in which loans outstanding per capita remained constant between 1861-70 and 1891-1900 – and hence estimate how much of the fall in mortality over this period was due to the increased infrastructure spending.

In particular, I estimate two regression specifications. The first includes as control variables only the district fixed effects and the set of controls relating to district characteristics but does not include any controls for time trends or town tax base. The second specification includes both year fixed effects and the town tax base measure (i.e., it is the same as specification (2) and (5) in table 1. The wealth proxies and the 1891 dummy variable help ensure that we are not capturing a spurious correlation with wealth or other time-varying factors – the reason why they are included in the specifications above. However, including these variables may also lead to underestimation of the effect magnitude, since some of the variation in expenditure across time will be attributed to these factors. For instance, if greater town wealth leads to greater expenditure on sanitary goods, the effect may be captured by the measure of tax base per capita, even though the spending that resulted from the growth in wealth caused a decline in mortality.

The results, presented in figure 2, show consistent evidence that the magnitude of the effects was large, with the cumulative expenditure on infrastructure between 1861 and 1900 (as proxied by the change in stock of loans outstanding) estimated to have accounted for approximately 15 per cent to 25 per cent of the decline in total mortality in the periods 1861-70 and 1891-1900. The size of the effect is slightly larger for those aged under 5, the group
likely most at risk from waterborne diseases in particular and those over 65, but the latter
effect diminishes significantly once the sized of the town tax base is accounted for.

Figure 2: Estimated percentage of mortality decline at different ages between 1861-70 and
1891-1900 explained by infrastructure spending

Conclusion
This paper has tested the effects of government spending on sanitation infrastructure on
mortality rates in England and Wales between 1861 and 1900. During this period local
government took responsibility for improving urban environments, leading to rapid growth in
expenditure on public goods such as clean water supply, sewer systems and street paving and
cleaning.

The results show that governments’ spending on these local public goods contributed
significantly to the reduction in total mortality, particularly for those aged under 20. They
have also indicated a strong effect in reducing mortality from waterborne diseases in
particular, as would be expected if the effect were causal. The estimates show that
approximately 20 per cent of the decline in mortality over this period can be attributed to
increased urban expenditure.

However, while these effects are sizeable, they are not sufficiently large to preclude
the hypothesis that nutrition was the most important single factor in reducing mortality during
this period. To understand this further, future research will, in the spirit of McKeown (1976),
examine in more detail the relationship between urban expenditure and particular causes of
death.

The latest full version of the paper is available at www.jnchapman.com

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Famine and relief of 1958-61: A case study in Zhaitan village of Anhui Province of China

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Supervisor: Dr Felix Boecking

The famine between 1958 and 1961 in China has been widely discussed since the 1980s. There is no doubt now about the severity of the famine, but about what caused the famine and why the death rates among different places were so different, scholars give quite different explanations. The industry and urban bias of Chinese government (Lin and Yang, 1996), the political radicalism of provincial leaders (Kung and Lin, 2003), and the irrational consumption of communal dining (Chang and Wen, 1997) are viewed arguably as major contributors to the occurrence and death of the famine. But most studies remain at national or provincial level while lack of an insight into the particular situation at grassroots level.

This paper will present a detailed picture of the famine in a village in South Anhui Province, a region which suffered seriously from the famine, by using first-hand records in the accounting books and other village documents preserved in the village archive. It reveals how the famine developed in the village and how villagers survived the famine.

The Great Leap Forward

In 1958, the collectivization movement of rural China reached its climax when the Great Leap Forward (GLP) campaign was launched widely across China. In rural areas, the advanced agricultural cooperatives, which had just been established for a few years, were urged to be merged into larger units, the people’s commune, which according to Mao Zedong’s blueprint should incorporate industry, agriculture, commerce, education and military, and should be the combination of workers, farmers, businessmen, students and soldiers. This wave reached Zhaitan in October 1958 when the Zhaitan Advanced Cooperative was dismissed and incorporated into the Yuejin (Leap Forward) People’s Commune.

This change brought fundamental changes to the life of Zhaitan villagers. First, while all of the village assets, including the land, tools and public accumulation funding were transferred to the commune, the private plots, which had remained in the hands of individual households, were also handed over to the collective.

Second, from November 1958, in order to mobilize as much labour force as possible to get involved in collective production, public facilities, such as canteens, nurseries and kindergartens were established to free women from child care and housework so that they could engage in outdoor farming and other collective work as men did.464

Third, a new scheme of food distribution was carried out. With the establishment of public canteens, from November 1958, all of the villagers of Zhaitan started to enjoy unlimited food for free in the canteen everyday rather than cooking at home. According to the record of cash account of the village, the meal served by canteens seemed not bad, as canteens bought pork meat quite frequently at least in the first months.

In the autumn and winter of 1958, the whole village fell into an atmosphere of frenzied hope that communism would be realized soon. My landlady in Zhaitan Hu Wanli remembered:

My mum was working on the dam. Two gas lamps on the dam lightened the whole field throughout the night. We were wrapped in her coat, and slept beside her on the dam. People worked day and night to build the dam.

464 According to the village gazetteer, in 1960, the village had six canteens, nine nurseries (with 70 children and 23 nursery nurses) and one kindergarten (with 52 children and two teachers), See Hu Zhaobi et al., ed., Longjing Chunqiu (The spring and autumn of the Dragon Well), unpublished book (2000), 86.
Building and restoring water projects is just one part of the GLF. By 1 December 1958, the village had also sent at least 29 labour forces to the factories in the county town and other villages to assist with industrial projects, including the well-known backyard furnace campaign.

However, problems emerged quickly among this optimistic air. The first problem was the shortage of labour force. In addition to the labour force sent for industry, many of those involved in reservoir construction were also working in other villages. This arrangement caused a serious labour shortage for the agriculture production of Zhaitan. When the harvesting season arrived, there were not enough labourers available, and the grain in the field could not be harvested in time.

The second problem emerged in the canteen. The free and unlimited food supply caused huge amounts of waste and soon became unaffordable. From June 1959, though the food provision of canteen was still maintained in Zhaitan, the provision became rationed.

But perhaps the most serious problem occurring was the spreading of the boasting air. As the boom in crop production was frequently published in the official propaganda, the cadres of Zhaitan village could not stay still. When the inspector from senior government came down to examine the crop production, in order to show that Zhaitan had kept pace with the national progress, people were instructed to transplant the rice from several patches of field into one single patch before it became ripe. In this case, the production of the latter field seemed to be over ten times its previous amount.

However, as a result, the space between plants became so narrow that they stopped growing and were left to rot in the field.

Apart from the production loss caused, more importantly, however, this trick conveyed a false message to the senior authorities.

The exaggeration of production led to an overestimation of food supply and in turn unrealistic procurement quotation of grain from the government. According to the record of Zhaitan, in 1959, the commune estimated that the rice production of Zhaitan could reach 1,381,812 jin, so the procurement target was set at 164,000 jin. However, the real production of rice in 1959 was only 604,241 jin, less than half of expectation, while the rice purchased by the government still amounted to 154,791.4 jin. Including the tax paid to the government, 118,844.4 jin of rice, the rice handed over to the government accounted for 45.3 per cent of the total production.

In 1960, with the ongoing fever of boasting and exaggeration, the target of grain procurement was again raised to 259,985 jin. Yet, the actual output of rice was even lower than in 1959, merely 405,264.92 jin. After deducting the actual procurement of 245,173 jin and the seeds, which accounted for 566 jin, only 120,654 jin of rice was left for distribution to the peasants.

For this reason, in November 1960, there was merely 14,274 jin of grain in stock. As the contemporary population of the village was 1,147, that means each person had only 12.5 jin of grain to survive the next six months until the wheat harvest, i.e., each person could only have an average of 34g of grain to consume each day during this period.

Hence, from late 1959 to 1961 a serious famine spread over China and also Zhaitan.

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465 See ‘Fengchuanxiang Yuejin Renmin Gongshe Tu Mu Shi Zhan Zhuijiang Dengjibiao,’ (The registration form of house-builder, carpenter, mason, bricklayer and bamboo craftsman in Yuejin Commune of Fengchuan Township), in Changqi Dang’an (Long-term archives), Vol.8. All of the documents and sources quoted in this paper here below are all preserved in Zhaitan Village archive, except Longjing Chunqiu.


467 This method seemed to be very popular in the GLF. I heard it from different villages, including Zhaitan and villages of my home town. It was hard to identify who invented it at first, but obviously lots of villages had copied the mode to address the pressure from above.

468 1 jin = 500 g.

469 The data were extracted and calculated from ‘Mingxi Fenleizhang (Subsidiary Ledger),’ 1959 and 1960, in Kuaiji Dang’an, Vol.3.
The Famine

In Zhaitan, the crisis started in the spring of 1960 and worsened from the winter of 1960 to the spring of 1961, which was directly reflected by the food supply data of the village. As mentioned before, from 11 June 1959, due to the shortage of food, rationing was applied in the village. Each person was allocated a certain amount of grain according to their age. People up to and including 15 years old were regarded as children and had a lower ration, while people over 15 were considered adults, and had a higher ration.\(^{470}\) The standard of ration varied from month to month depending on availability of food.

Here I take one family as an example to illustrate the development of the famine. As, during this period, all the families in this village shared the same grain ration, the condition of this family is representative of the other families in the village.

In 1960, there were 10 persons in the family of Hu Yuanju: five adults and five children. The details of food supply to this family were as listed below.

<table>
<thead>
<tr>
<th>Table: Grain ration of Hu Yuanju from July 1959 to May 1961</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
</tr>
<tr>
<td><strong>Daily Food Ration (jin)</strong></td>
</tr>
<tr>
<td>Jul</td>
</tr>
<tr>
<td>Apr</td>
</tr>
<tr>
<td>Jan</td>
</tr>
</tbody>
</table>

The data above indicates a clear trend in the food supply. By late 1970s, food shortages in Zhaitan usually happened in the winter and spring when the output for the first year was consumed and the output for the next year had not yet come in. In June, the harvest of wheat would relieve the situation. From August, as the rice ripened, the food supply usually improved significantly.

According to this table, the most serious food shortages in Zhaitan occurred in January, February, November and December of 1960. In January and February 1960, the whole family only had around 3.5 jin of food each day, which was comprised of wheat and rice. According to the estimation of local peasants, at that time one adult normally needed 1.5 jin of rice and a children needed 0.75 jin of rice each day to keep them from hunger, then a family with 5 adults and 5 children needed 12.5 jin of rice. Therefore, in these two months, the food supply was a mere 28 per cent of the normal level.

The table also shows that the condition in November and December 1960 was slightly better than in January and February of 1960, and the food supply for the early months of 1961 seems much better than the same period in 1960, although the recorded supply on the account book was still much lower than normal.

Nevertheless, in spite of this, the reality may still be a different picture. When examining the details of food distribution of the three years, I found there was only one record of food distribution in the first five months of 1961, which was on 31 May 1961, and the data

\(^{470}\) See ‘Zhaitan Shengchandui Kouliang Fendeng Dingliang Xuling Diaochabiao,’ (Investigation chart of age for the food distribution of Zhaitan production team), in Changqi Dang’an, Vol.21.


for the five months in the above was simply an average. In contrast with the records of other periods, this was unusual. It might be reasonable to assume that the distribution of the 31st May was the only distribution for the five months, which means that there was no food to distribute in 1961 until the end of May, so each family received the amount of five months at the end of May as compensation.

In fact, there is other evidence indicating the serious food deficiency during this period. A chart of the food arrangements between November 1960 and May 1961 revealed that since December 1960, the village had relied heavily on vegetables and food substitutes to survive. According to the introduction of *Longjing Chunqiu*, the so-called food substitutes should be wild herbs and the roots of wild plants. And from January to May 1961, the village was only able to arrange 2.8 jin of grain for each person per month. This food supply was even worse than the first two months of 1960.

The subsidiary ledgers on grain further confirmed the crisis from 1960. The accounting data in 1960 reveal that the village frequently purchased grain from the state-owned grain institute to meet the food demand of the peasants. In March, April, May, July, and December 1960, the village purchased grain six times. In July 1960, after all of the wheat harvested in June and the stock were consumed, the village took an action of *Modi* (finding out the real situation). During this action, the cadres searched the home of each peasant to collect all of the grain privately stored by the peasants. 6,890 jin of rice was found out and redistributed to all of the households in the village. In 1961, the subsidiary ledger shows that in January, due to the shortage of stock, all of the rice seeds were distributed and consumed. When it came to the April of 1961, even the stocks of all of the supplementary grains such as soybean and buckwheat were consumed.

**Survive the Famine**

Although the memory of hunger between 1959 and 1961 was still vivid among the older villagers of Zhaitan, comparing the death toll with neighbouring villages, the situation of Zhaitan was much better. There was no single death resulting from starvation in this village during this famine. Local people attributed it to the active response of their cadres.

According to *Longjing Chuanqiu*, in 1960, when the famine started to show its signs, cadres of Zhaitan secretly dismissed the public canteens and led their villagers to the surrounding mountains to dig fern roots. Hu Dusheng, the contemporary party secretary of the village who had previously been a skillful carpenter, transformed the traditional digging tool to make it suitable for digging the roots. Then people cooked fern roots and extracted the starch as one of the substitutes for rice and wheat. These food substitutes obviously saved hundreds of lives in Zhaitan. And local people still felt proud of this action of self-relief. In the village museum, those special tools were displayed along with other traditional farming tools and were introduced specifically for their performance in the famine.

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474 See *Longjing Chunqiu*, 86–88.
475 See ‘Haizhai Gongshe Zhaitan Dadui Liulingnian Shiyi Yuefen Zhi Liuyinian Wuyuefen Liangshi Shenghuo Anpaibiao,’ (The Chart on the food arrangement for Zhaitan Brigade, Haozhai Commune from November 1960 to May 1961). The chart is an uncategorized manuscript preserved in the village archives. The manuscript was filled with charts and tables which seemed to be a notebook of the accountant.
Investor protection, taxation and dividend policy: Evidence from Belgium, 1838-2012

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In this paper, we investigate how changes in investor protection and taxation legislation affected dividend policy between 1838 and 2012, using a unique sample of all Belgian firms listed on the Brussels Stock Exchange (BSE). Investor protection was very weak before World War I (WWI), but gradually improved over time. Dividend taxation was introduced in 1920. While it is generally believed that investor protection and taxation affect dividend policy (e.g. Alzahrani & Lasfer, 2012; La Porta et al., 2000), we find that dividend policy is remarkably stable over time, even after controlling for firm characteristics. Despite being important, changes in the institutional environment had almost no impact on dividend policy in Belgium.

The institutional environment in Belgium

When Belgium became independent from the Netherlands in 1830, the Commercial Code as introduced by Napoleon in 1807 was still in force. This code imposed almost no regulation on limited liability companies. However, founding a limited liability company was difficult, as incorporation required government permission (Piret, 1946). From the beginning, the link between the banking sector and the industry was very close in Belgium, since many limited liability companies were founded by universal banks, of which the Société Générale was the most important one (Chlepner, 1930). The 1807 code required limited liability companies to make an annual inventory, including information on the assets and liabilities. It was not disclosed to outsiders: Large shareholders were informed about the financial situation of the company only at the general meeting, whereas small shareholders and other outsiders were usually not informed at all (Piret, 1946). Investor protection was thus rather poor (Théate, 1905). Agency conflicts and problems of information asymmetry are therefore expected to be very pronounced at that time.

Investor protection gradually improved by changing corporate legislation. From 1841 onwards, companies were required to prepare a balance sheet annually. The balance sheet summarized the information in the inventory thereby taking depreciations into account. It was mandatorily disclosed, but there was no regulation on the precise content. The executive directors were responsible for the establishment of the balance sheet, whereas the supervising directors had to monitor the financial statement. Since it was not obliged to have supervising directors, this monitoring was often non-existing. The general meeting needed to approve the balance sheet. This meeting was open only for shareholders owning at least five shares of 1,000 BEF. The distribution of profits was also regulated by the 1841 law. Before, companies paid a 5 per cent fixed rate (intérêt) on share capital in order to guarantee an income return at least equal to the return on government debt. On top of this fixed yearly income, a dividend was distributed. In 1841, the intéressant on shares was abolished and companies were allowed to distribute dividends only from the ‘real profit’. However, the legislator did not define how to calculate this ‘real profit’ (De Clercq, 1992; Demeur, 1859). In 1873, the Commercial Code changed again. The governmental permission to found a limited liability company was abolished. The balance sheet had to be published annually.

477 In Belgium, the board of directors consists of executive and supervising directors. Since companies were not required to have supervising directors, many companies did not have a board of directors at that time (Demeur, 1859).
478 The daily average income of a male adult (older than 16) worker was less than 5 BEF at that time (Neirynck, 1944).
Companies were also obliged to have a board of directors with at least three executive directors and one supervising director. The monitoring of the balance sheet by the supervising director was mandatory, but in practice, it was meaningless (Théate, 1905). The general meeting, which had to approve the balance sheet, was, from 1873 onwards, open for all shareholders and no shareholder was allowed to vote for more than 20 per cent of the outstanding shares or for more than 40 per cent of the shares represented at the general meeting (Guillery, 1886). This legislation was, however, easily circumvented by issuing multiple voting shares (Willems, 2000). The 1873 law also imposed a fine or even imprisonment on the executive directors of companies paying too high a dividend. It was, however, still not determined which part of the profits was allowed to be distributed to shareholders (Guillery, 1886). From 1881 onwards, executive directors were also punishable if a fraudulent balance sheet was published. As the legislator did not define when balance sheets were fraudulent, the effectiveness of this legislation was limited (Théate, 1905). In 1913, the content of the balance sheet was specified: it was still a summary of the (undisclosed) inventory and consisted of six categories. The asset side was subdivided in fixed assets and current assets; the liability side was subdivided in share capital, debt to bondholders, guaranteed debts and unguaranteed debts (Wauwermans, 1914). During the Interbellum, investor protection was further enhanced. Since the 1873 code did not restrict the number of votes per share, multiple voting shares had become increasingly popular from 1927 onwards. Universal banks used these shares in order to maintain control in many limited liability companies (Willems, 2000). The Belgian banking sector was reformed after a major banking crisis in the early 1930s. In 1934, universal banks were split up into holding companies and commercial banks and multiple voting shares were forbidden. The Banking Commission, which was founded in 1935 to control the Belgian Banking sector, was also responsible for oversight on securities issues. Issuers were obliged to inform the Banking Commission in advance and to provide it with detailed financial information (De Voghel, 1941). From 1953 onwards, all listed companies had to be supervised by one or more members of the newly founded Institute for Auditors. This guaranteed the effectiveness and reliability of the monitoring of the financial statements (Centre d’étude des Sociétés, 1956). In 1975, the content of the balance sheet was further specified, which increased financial transparency (Van Damme, 1983). In 1985, the legislator finally determined which part of the profits was distributable towards shareholders (Tas, 2003). In 1989, insider trading was banned by law. Before, it was assumed that moral sense would prevent insiders from abusing their prior knowledge (Hendrickx & Van Gulck, 1991). Two other important laws were introduced the same year. First, the transparency legislation required the notification of any substantial changes in the ownership structure of listed firms. Second, a law governing public takeover bids was introduced, which regulated the announcement and the procedure of takeover bids for listed firms (Geens, 1990). In 2004, the Belgian Corporate Governance Code was developed in order to enhance and effectuate corporate governance (Commissie Corporate Governance, 2004).

Dividend taxation also changed drastically between 1838 and 2012. Before WWI, dividends were not taxed. Only in 1920, when the Belgian taxation system was completely reformed, was a tax on dividends introduced. Initially, the dividend tax rate was set at 10 per cent but it has changed many times since (Gilson, 1921).

Due to immense changes in the institutional environment in which listed Belgian firms operated, the prevalence and importance of different market frictions (like agency conflicts, information asymmetry and taxation) changed over the years. We expect that this will affect dividend policy.

**Data, variables and methodology**

Our research is based on the unique, high-quality database of the Studiecentrum voor Onderneming en Beurs at the University of Antwerp. The database contains information on
every single stock ever listed on the BSE. End-of-month stock prices, number of shares, dividend information (dividend paid, ex-dividend day) and capital operations (stock dividends and stock splits) are available for each stock. Our sample consists of all common stocks, i.e. 1,873 in total, listed on the BSE between 1838 and 2012.

Using this data, we measure dividend policy in five different ways. First of all, we calculate the Propensity to pay, which measures the percentage of all firms paying a dividend in a given year. Following Baker & Wurgler (2004), we calculate the number of payers in year $t$ as:

$$Payers_t = New Payers_t + Old Payers_t + List Payers_t.$$  \[1\]

$New Payers_t$ is equal to the number of firms among the nonpayers in year $t-1$ that initiate a dividend in year $t$. $Old Payers_t$ includes the number of payers that paid a dividend in year $t-1$ and that also pay a dividend in year $t$. It is calculated as:

$$Old Payers_t = Payers_{t-1} - New Nonpayers_t - Delist Payers_t.$$  \[2\]

$New Nonpayers_t$ are all the firms that paid a dividend in year $t-1$, but omitted their dividend in year $t$. $Delist Payers_t$ are the number of firms that paid a dividend in year $t-1$ but are no longer in the sample in year $t$. $List Payers_t$ is the number of firms that pay a dividend that were not in the sample the previous year. The propensity to pay for all firms is thus calculated as follows:

$$Propensity to pay all firms = \frac{Payers_t}{\text{Total number of listed firms}}.$$  \[3\]

We then calculate three variables to capture dividend payment dynamics. $Initiate_t$ is the initiation rate among firms that are listed both in year $t-1$ and in year $t$. $Continue_t$ measures how many of the surviving payers continue paying a dividend. It can also be regarded as one minus the propensity to omit. Finally, $Propensity to pay new firms_t$ measures the propensity to pay among newly listed firms and can also be regarded as the initiation rate among these firms:

$$Initiate_t = \frac{New Payers_t}{Nonpayers_{t-1} - Delist Nonpayers_t},$$  \[4\]

$$Continue_t = \frac{Old Payers_t}{Old Payers_t - Delist Payers_t},$$  \[5\]

$$Propensity to pay new firms_t = \frac{List Payers_t}{List Payers_t + List Nonpayers_t}.$$  \[6\]

Next to these dividend dynamics, we also calculate the dividend yield. The firm-level dividend yield is calculated for each stock at the end of each year as:

$$Dividend Yield_{lt} = \frac{D_{tm} + D_{tm-1} + \ldots + D_{tm-t_1}}{P_{tm-1}},$$  \[7\]

where $D =$ dividend in month $m$ and $P =$ stock price.

Changes in dividend policy are investigated in different ways. We start by graphically investigating the evolution of dividend policy. In order to formally test whether dividend policy changed significantly, we perform structural break tests (Bai & Perron, 1998, 2003). This method is particularly useful as it allows us to search for multiple structural changes in our data at unknown points in time. Finally, we perform some additional regression analysis in which we control for firm characteristics.
The evolution of dividend policy

In [1], the evolution of the different dividend measures is shown. Since WWI and WWII have a huge impact on Belgium, we subdivide the entire period (1838-2012) into five subperiods: before WWI (1838-1913), WWII (1914-18), the Interbellum (1919-39), WWII (1940-45) and after WWII (1946-2012).

Table 1 shows the evolution of dividend policy numerically.

![Figure 1: The evolution of dividend policy](image-url)
Table 1: The evolution of dividend policy

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<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A: Propensity to pay (all firms)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>60.71%</td>
<td>64.24%</td>
<td>26.54%</td>
<td>50.36%</td>
<td>46.38%</td>
<td>63.78%</td>
</tr>
<tr>
<td>Median</td>
<td>62.19%</td>
<td>65.94%</td>
<td>21.13%</td>
<td>54.62%</td>
<td>48.10%</td>
<td>63.38%</td>
</tr>
<tr>
<td>St.Dev</td>
<td>12.21%</td>
<td>11.06%</td>
<td>13.15%</td>
<td>10.71%</td>
<td>12.88%</td>
<td>5.56%</td>
</tr>
<tr>
<td><strong>Panel B: Initiate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>17.75%</td>
<td>18.81%</td>
<td>8.06%</td>
<td>16.74%</td>
<td>16.75%</td>
<td>17.68%</td>
</tr>
<tr>
<td>Median</td>
<td>16.09%</td>
<td>16.67%</td>
<td>6.80%</td>
<td>16.86%</td>
<td>17.32%</td>
<td>15.15%</td>
</tr>
<tr>
<td>St.Dev</td>
<td>10.74%</td>
<td>13.02%</td>
<td>3.38%</td>
<td>8.60%</td>
<td>10.05%</td>
<td>8.46%</td>
</tr>
<tr>
<td><strong>Panel C: Continue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>89.73%</td>
<td>92.55%</td>
<td>65.07%</td>
<td>86.48%</td>
<td>74.30%</td>
<td>90.76%</td>
</tr>
<tr>
<td>Median</td>
<td>91.30%</td>
<td>93.62%</td>
<td>73.60%</td>
<td>87.78%</td>
<td>77.45%</td>
<td>91.30%</td>
</tr>
<tr>
<td>St.Dev</td>
<td>8.04%</td>
<td>5.60%</td>
<td>18.14%</td>
<td>6.48%</td>
<td>10.43%</td>
<td>3.52%</td>
</tr>
<tr>
<td><strong>Panel D: Propensity to pay (new firms)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>31.26%</td>
<td>34.86%</td>
<td>5.88%</td>
<td>28.89%</td>
<td>18.67%</td>
<td>30.23%</td>
</tr>
<tr>
<td>Median</td>
<td>29.40%</td>
<td>33.33%</td>
<td>0.00%</td>
<td>27.42%</td>
<td>9.56%</td>
<td>23.53%</td>
</tr>
<tr>
<td>St.Dev</td>
<td>27.27%</td>
<td>26.69%</td>
<td>10.19%</td>
<td>20.74%</td>
<td>25.51%</td>
<td>30.57%</td>
</tr>
<tr>
<td><strong>Panel E: Value-weighted dividend yield</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.68%</td>
<td>4.23%</td>
<td>1.69%</td>
<td>3.47%</td>
<td>1.64%</td>
<td>3.45%</td>
</tr>
<tr>
<td>Median</td>
<td>3.77%</td>
<td>4.19%</td>
<td>1.37%</td>
<td>3.61%</td>
<td>0.83%</td>
<td>3.17%</td>
</tr>
<tr>
<td>St.Dev</td>
<td>1.14%</td>
<td>0.84%</td>
<td>1.04%</td>
<td>0.80%</td>
<td>1.68%</td>
<td>1.02%</td>
</tr>
</tbody>
</table>

The evolution of the five different variables is quite comparable: Before WWI and after WWII, all variables are quite similar. However, during WWI and during WWII, the mean and median of all variables drops significantly. During the Interbellum, the dividend policy of Belgian listed firms tend to recover and is again very comparable with the dividend policy before WWI and after WWII. These results are quite surprising, given the fact that the institutional environment changed drastically over the years.

Our results are formally confirmed using structural break tests and regression analyses in which we control for firm characteristics. Due to space considerations, we do not report these results. The structural break analysis reveals that there are three breaks in dividend policy: one at the start of WWI, one at the end of WWII and one in the mid-1980s. We show that WWI and WWII are totally responsible for the first two breaks, whereas the third break is driven by a changing composition in the characteristics of the listed firms, rather than by changes in the institutional environment.

Conclusion

In this paper, we have investigated how the dividend policy of listed Belgian firms has changed between 1838 and 2012. Previous research suggests that agency conflicts, information asymmetry and taxation, are important determinants of dividend policy. The severity of these market frictions changed considerably in Belgium between 1838 and 2012. While information asymmetry and agency conflicts were likely to be very important in the period before WWI, the gradual improvement of investor protection should have reduced information asymmetries and agency problems. Taxation became relevant only in 1920, when dividend taxes were introduced. We expected that the changing importance of the different market frictions would have an impact on dividend policy of listed Belgian firms.
Surprisingly, we do not find severe changes in dividend policy over the period 1838-2012; dividend policy is fairly stable over time. The graphical analysis revealed WWI and WWII had a huge impact on dividend policy. This was formally confirmed by a structural break analysis. Also in the mid-1980s, dividend policy partly changed. This change was driven by a changing sample composition. An additional regression analysis in which we controlled for firm characteristics also confirmed the prior results.

In summary, notwithstanding the general belief that the institutional environment affects dividend policy, we find no evidence that a changing institutional environment, which affects the prevalence and severity of agency conflicts, information asymmetry and taxation, affected dividend policy of listed Belgian firms in the past two centuries. Further research is therefore needed to unravel the mystery surrounding dividend policy.

References
A prosopographical study of directorial control and shareholdings in Dundee-owned jute mill companies operating in colonial Calcutta, 1874-1921

Alexis Wearmouth
(alexis.wearmouth@gmail.com)
Supervisors: Dr Carlo Morelli & Professor Jim Tomlinson

The jute manufacturing industry originated in Dundee in the mid-nineteenth century, selling sacking and hessian cloth products in international markets. Jute was the packaging material for carrying expanding global commodity trade and was also in demand for wartime manufactures such as sandbags. By the beginning of the twentieth century, Calcutta had overtaken Dundee as a rival location for the production of jute manufactures. The Calcutta jute mill companies were rupee-denominated limited liability companies that were mainly floated by European mercantile managing agencies with European capital resident in India. The managing agencies were highly diversified in colonial mercantile and manufacturing activities and took the form of partnerships, with the senior partners resident in London responsible for strategic control, while operational control was vested in the hands of the junior partners in Calcutta.\(^479\) The managing agents were paid a commission on the jute mill companies’ sales or profits with the latter coming to predominate. A small number of sterling-denominated jute mill companies operating in Calcutta were floated in Glasgow but the high commissions charged by their managing agents and their lack of jute manufacturing expertise meant that their market share stagnated while there was an involution of their equity on a small base of wealthy ‘insider’ shareholders, leading them to remove their headquarters to Calcutta and refloat as rupee companies at the end of the First World War.

The Samnuggur, Titaghur and Victoria jute mill companies diverged from this pattern. They were formed from the 1870s with Dundee-based share capital and strategic control in the hands of boards of directors located at the companies’ Dundee headquarters. The companies’ operations in Calcutta were nominally overseen by a managing agency set up by the original Samnuggur Co’s founder Thomas Duff, although in practice strategic control and ownership of the managing agency remained in Dundee. The directors of the managing agency also acted as directors of the mill companies. Thomas Duff & Co succeeded in retaining market share as the second largest managing agent of jute manufacturing companies in Calcutta with 8-13 per cent of productive capacity in a rapidly expanding industry throughout the period of study, growing from 200 looms on one site in 1874 to 5,000 looms on multiple sites in 1921.\(^480\) The ordinary share capital invested in the three mill companies was £1.2 million in 1921, and the total capital invested including debentures was £1.8 million.\(^481\) The share capital was predominantly from Dundee and the companies retained their Dundonian identity throughout the interwar period.

The three jute mill companies studied conform to many of the criteria specified by Wilkins in her typology of ‘free standing companies’ as an institutional vehicle for foreign direct investment as opposed to portfolio investment.\(^482\) Casson questioned how frequently the


\(^{481}\) University of Dundee Archive (UDA) MS 86/1, Samnuggur Co; UDA MS 86/2, Victoria Co; UDA MS 86/3, Titaghur Co; UDA MS 86/5, Thomas Duff & Co, Minutes of the Directors, Minutes of Annual General Meetings.

locus of strategic control of ‘free standing companies’ remained in the home country beyond the ‘initial development stage’ and suggested that the character of these companies reverted to that of portfolio investment once specific project management skills located in the home country had been utilized in the initial development phase. 483 He proposed an alternative typology to the free standing company: “[t]he expatriate multinational is a true direct investor because its headquarters exercises significant operational control”. 484 This typology captures more precisely the distinctive transnational institutional form of directorial control taken by Thomas Duff & Co and the three jute mill companies they managed. However, Casson did not develop his argument to examine the implications for the behaviour of these expatriate multinationals in terms of their ownership characteristics and the location of their shareholders. In what follows, it is shown how the ownership structure of the Samnuggur, Titagur and Victoria jute mill companies and their managing agents Thomas Duff & Co changed over time but remained decisively Dundee-based. Foreign direct investment in manufacturing industries was rare during this period – due to the idiosyncratic location-specific nature of the knowledge required for their operational management, (combined with the mercantile skills required to operate in volatile and speculative raw materials and final product markets in the case of jute manufacturing). The case of the jute mill companies managed by Thomas Duff & Co suggests the working hypothesis that information and personnel flows between the Calcutta and Dundee jute manufacturing industries and related merchandising activities were sufficiently dense to overcome this barrier. 485

This paper presents evidence of how the Thomas Duff & Co directors were able to retain effective control of the firm while raising sufficient investment funds to maintain market share in a rapidly expanding industry through the creation of a more popular and dispersed base of shareholders. The analysis is based on the study of the population of 1,162 shareholders listed as holding a share in one of the mill companies in any share issue listed in the minutes of the directors of the Samnuggur, Titaghur and Victoria Cos from 1874 to 1919. 486 The share issues of the Titaghur Co are used to consider change over time because of the availability of data towards the beginning, middle and end of the period studied but the results are representative of the other two mill companies. The listings in the companies’ records give very partial shareholder characteristics, such as profession or location in some cases, but have been supplemented by extensive original prosopographical research drawing on a range of sources. The prosopographical data include information collected from household census enumerators, trade directories, newspaper reports and obituaries, inventories of estates registered in Scotland and India, and probates registered more widely. 487

The payment of annual dividends to the ordinary shareholders of the mill companies managed by Thomas Duff & Co was impressive. In real terms, the companies paid average ordinary dividends of 17 per cent during the 1880s, then 16, 9 and 31 per cent in the ensuing three decades up to 1920, (and considerably more in nominal terms). They ranked fifth amongst the 18 managing agencies operating in the Calcutta jute industry for the period 1870-1913, despite the disadvantages of a depreciating rupee in the 1880s and 1890s for a sterling-denominated company. 488 Thomas Duff & Co outperformed both the other sterling-denominated jute mill companies in Calcutta and the publicly listed jute mill companies such as Gilroys in Dundee. 489 The Samnuggur Co repaid the initial investment of its shareholders

484 Ibid.
485 For the density of the Calcutta-Dundee jute nexus, see Gordon Stewart, Jute and Empire: The Calcutta Jute Wallahs and the Landscapes of Empire (Manchester, 1998).
487 Dundee Advertiser, Dundee Courier, Scotsman and The Times; probates, inventories from National Archives of Scotland; Thacker’s Indian Directory, Dundee Directory.
489 Ibid.; for Gilroys, see p. 141.
within its first decade of operations from 1874 and the Titaghur Co was formed on the basis of bonus shares issued to the Samnuggur shareholders in 1883.\textsuperscript{490} Thomas Duff & Co found a ready market for additional capital in Dundee thereafter.

**Directorial control and ownership**

The percentage of shares controlled by individual directors was calculated by aggregating their individual shareholdings with shares held by close relatives, drawing on prosopographical research. Table 1 traces the degree of continuity of effective control by the five founders of the firm and compares their holdings in the Samnuggur and Titaghur Cos with those of newcomer directors over time. The Victoria Co is not included because it originated with a different group of Dundee investors and was only gradually incorporated into the Thomas Duff & Co network.\textsuperscript{491}

<table>
<thead>
<tr>
<th>Year</th>
<th>Company</th>
<th>Original directors</th>
<th>New directors</th>
<th>Total directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1874</td>
<td>Samnuggur</td>
<td>76%</td>
<td>2%</td>
<td>78%</td>
</tr>
<tr>
<td>1883</td>
<td>Samnuggur</td>
<td>70%</td>
<td>2%</td>
<td>72%</td>
</tr>
<tr>
<td>1883</td>
<td>Titaghur</td>
<td>79%</td>
<td>3%</td>
<td>82%</td>
</tr>
<tr>
<td>1888</td>
<td>Titaghur</td>
<td>71%</td>
<td>2%</td>
<td>73%</td>
</tr>
<tr>
<td>1895</td>
<td>Titaghur</td>
<td>40%</td>
<td>13%</td>
<td>53%</td>
</tr>
<tr>
<td>1897</td>
<td>Titaghur</td>
<td>37%</td>
<td>13%</td>
<td>50%</td>
</tr>
<tr>
<td>1901</td>
<td>Samnuggur</td>
<td>31%</td>
<td>12%</td>
<td>42%</td>
</tr>
<tr>
<td>1913</td>
<td>Samnuggur</td>
<td>16%</td>
<td>13%</td>
<td>39%</td>
</tr>
<tr>
<td>1919</td>
<td>Titaghur</td>
<td>22%</td>
<td>14%</td>
<td>36%</td>
</tr>
</tbody>
</table>

The directors and their immediate families owned a declining proportion of the total value of the equity of the firms they managed and controlled. The decline in the founders’ share was not compensated by the proportion of shares held by promoted directors. The decline in the directors’ share of dividends in the mill companies was compensated by the increasing rents paid by the mill companies to the managing agency, Thomas Duff & Co, in which they were also directors.

<table>
<thead>
<tr>
<th>Decade</th>
<th>Mill Cos</th>
<th>Thomas Duff &amp; Co</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880s</td>
<td>17%</td>
<td>56%</td>
</tr>
<tr>
<td>1890s</td>
<td>16%</td>
<td>192%</td>
</tr>
<tr>
<td>1900s</td>
<td>9%</td>
<td>176%</td>
</tr>
<tr>
<td>1910s</td>
<td>31%</td>
<td>106%</td>
</tr>
</tbody>
</table>

From 1895, the directors were earning considerably more from their shareholdings in the managing agency, Thomas Duff & Co, than from their much larger investment in the equity of the Samnuggur and Titaghur Cos.\textsuperscript{492}

\textsuperscript{490} MS 86/1/1/1, Samnuggur Co, MOTD, p274, 1 Aug 1883.
\textsuperscript{491} Wearmouth, (2015), pp. 192-208.
\textsuperscript{492} Wearmouth, (2015), pp. 162-5.
Table 3: Directors’ incomes, £, managing agency compared with mill company

<table>
<thead>
<tr>
<th>Financial Year</th>
<th>1888</th>
<th>1895</th>
<th>1901</th>
<th>1913</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid-up capital, (£000s)</td>
<td>T DTC</td>
<td>T DTC</td>
<td>S DTC</td>
<td>S DTC</td>
</tr>
<tr>
<td>Paid-up capital, (£000s)</td>
<td>114</td>
<td>4</td>
<td>157</td>
<td>4</td>
</tr>
<tr>
<td>Dividend paid</td>
<td>20%</td>
<td>100%</td>
<td>13%</td>
<td>200%</td>
</tr>
<tr>
<td>Director’s dividends</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomas Duff</td>
<td>5,472</td>
<td>1,400</td>
<td>2,026</td>
<td>3,320</td>
</tr>
<tr>
<td>James Nicoll</td>
<td>973</td>
<td>240</td>
<td>393</td>
<td>480</td>
</tr>
<tr>
<td>CB Ovenstone</td>
<td>412</td>
<td>480</td>
<td>260</td>
<td>1,765</td>
</tr>
<tr>
<td>George Nairn</td>
<td>204</td>
<td>720</td>
<td>333</td>
<td>1,765</td>
</tr>
<tr>
<td>Walter Duff</td>
<td>393</td>
<td>560</td>
<td>426</td>
<td>1,765</td>
</tr>
</tbody>
</table>

‘Insider’ versus ‘outsider’ shareholders

The prosopographical approach utilized to consider directorial control through ownership of shares by a director or family member can be extended to distinguish ‘insider’ shareholders from ‘outsider’ shareholders, classifying shareholders according to whether they had a personal tie to one of the directors or a tie based on employment or transacting with the firms. A comparison of the proportions of shares held by insiders relative to outsiders according to this classification gives a better sense of the ability of the directorates of the firms to mobilize a majority of shareholders in any contested vote, as shown below in table 4 for the Titaghur Co, comparing the years 1883, 1897 and 1919. The number of outsider shareholders in the Titaghur Co grew rapidly as it funded additional productive capacity through new share issues. Outsiders came to hold a majority of shares by 1919 but insiders retained a substantial minority stake.

Table 4: Titaghur Co, Insider and outsider shareholders, 1883-1919

<table>
<thead>
<tr>
<th></th>
<th>1883</th>
<th>1897</th>
<th>1919</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insiders</td>
<td>21</td>
<td>48</td>
<td>105</td>
</tr>
<tr>
<td>Outsiders</td>
<td>20</td>
<td>145</td>
<td>367</td>
</tr>
<tr>
<td>Insiders, % of shares held</td>
<td>84%</td>
<td>60%</td>
<td>45%</td>
</tr>
<tr>
<td>Outsiders, % of shares held</td>
<td>16%</td>
<td>40%</td>
<td>55%</td>
</tr>
<tr>
<td>Insiders - average shareholding</td>
<td>420</td>
<td>244</td>
<td>193</td>
</tr>
<tr>
<td>Outsiders - average shareholding</td>
<td>84</td>
<td>54</td>
<td>67</td>
</tr>
</tbody>
</table>

Regional dispersion of shareholders

Shareholders resident in Dundee were already in a minority by the time of the 1897 share issue of the Titaghur Co. Nearly half the shareholders remained located in Dundee despite the widening of the company’s capital base as the number of shareholders increased from 1897 to 1919. If not based in Dundee, shareholders tended to be located in Calcutta up to 1897. By 1919, shareholders became widely dispersed across the rest of the U.K.
Table 5: Regional location of residence of Titaghur Co shareholders

<table>
<thead>
<tr>
<th>Year</th>
<th>1883</th>
<th>1897</th>
<th>1919</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dundee</td>
<td>28</td>
<td>88</td>
<td>221</td>
</tr>
<tr>
<td>Calcutta</td>
<td>12</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>0</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>Glasgow</td>
<td>0</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Aberdeen</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Rest of Scotland</td>
<td>0</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>London &amp; Home Counties</td>
<td>1</td>
<td>6</td>
<td>54</td>
</tr>
<tr>
<td>North of England</td>
<td>0</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Rest of England</td>
<td>0</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>County Dublin</td>
<td>0</td>
<td>9</td>
<td>29</td>
</tr>
<tr>
<td>Rest of Ireland</td>
<td>0</td>
<td>15</td>
<td>23</td>
</tr>
<tr>
<td>Other India</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Unidentified</td>
<td>0</td>
<td>31</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>189</td>
<td>453</td>
</tr>
</tbody>
</table>

Sectoral distribution and employment ‘grade’ of shareholders

The widening of the Titaghur Co’s capital base to include more ‘outsider’ shareholders after 1897 was reflected in the growth of shareholders in non-jute occupations.

Table 6: Sectoral distribution of Titaghur Co shareholders

<table>
<thead>
<tr>
<th></th>
<th>1883</th>
<th>1897</th>
<th>1919</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jute</td>
<td>25</td>
<td>61</td>
<td>85</td>
</tr>
<tr>
<td>Finance &amp; trade</td>
<td>3</td>
<td>22</td>
<td>45</td>
</tr>
<tr>
<td>Professional</td>
<td>2</td>
<td>12</td>
<td>36</td>
</tr>
<tr>
<td>Retail services, skilled trades, small business</td>
<td>2</td>
<td>8</td>
<td>34</td>
</tr>
<tr>
<td>Non-jute industry, manufacturing</td>
<td>0</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>Food &amp; drink processing</td>
<td>2</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>Total identified</td>
<td>34</td>
<td>117</td>
<td>234</td>
</tr>
</tbody>
</table>

Classifying shareholders according to their position within a hierarchy of employment ‘grades’ can serve as a proxy to capture the dispersal of shareholdings to a more popular class of shareholder by 1919. While directors and partners in firms were dominant amongst shareholders in numerical terms to 1897, this was no longer the case by 1919.

Table 7: Titaghur Co shareholders’ employment ‘grade’

<table>
<thead>
<tr>
<th></th>
<th>1883</th>
<th>1897</th>
<th>1919</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director/partner</td>
<td>24</td>
<td>80</td>
<td>123</td>
</tr>
<tr>
<td>Professional</td>
<td>2</td>
<td>12</td>
<td>36</td>
</tr>
<tr>
<td>Small proprietor</td>
<td>1</td>
<td>4</td>
<td>29</td>
</tr>
<tr>
<td>Manager</td>
<td>1</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Clerk/broker/agent</td>
<td>0</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Supervisory/technical</td>
<td>6</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Men, unidentified</td>
<td>1</td>
<td>28</td>
<td>71</td>
</tr>
<tr>
<td>Institutional</td>
<td>0</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Employed women</td>
<td>0</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Women, no occupation</td>
<td>5</td>
<td>29</td>
<td>137</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>181</td>
<td>467</td>
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</tbody>
</table>
Women shareholders

There was a rapid increase in the absolute and relative numbers of female shareholders. The rising trend in female shareholdings was an aspect of the broader trend in the widening of the mill companies’ base of shareholders beyond individuals with a direct business relationship to the firms to a shareholding public interested purely in receiving a return on their investment.

Table 8: Titaghur Co, Male and Female Shareholders

<table>
<thead>
<tr>
<th>Year</th>
<th>Male No of Shareholders</th>
<th>Male Average Holding</th>
<th>Male % of Total Value</th>
<th>Female No of Shareholders</th>
<th>Female Average Holding</th>
<th>Female % of Total Value</th>
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<tr>
<td>1883</td>
<td>34</td>
<td>132</td>
<td>295</td>
<td>6</td>
<td>58</td>
<td>185</td>
</tr>
<tr>
<td>1897</td>
<td>132</td>
<td>267</td>
<td>119</td>
<td>58</td>
<td>185</td>
<td>31</td>
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<tr>
<td>1919</td>
<td>267</td>
<td>64</td>
<td>53</td>
<td>185</td>
<td>31</td>
<td>64</td>
</tr>
</tbody>
</table>

Women shareholders in the companies were seeking a stable source of property income higher than could be achieved from a bank deposit account or holdings of government securities in order to guarantee long term economic security.493 Approximately 70 per cent of female shareholders in the Titaghur Co were dependents of male shareholders in both 1897 and 1919. Nevertheless, by 1919, a large minority had no identifiable family connection to a male shareholder, suggesting there was a class of female shareholders in the market making investment decisions that were in some sense independent of a male head of household.

There is no record of a female shareholder attending an annual general meeting of any of the three mill companies up to 1921. The proportion of women shareholders was similar to that found by Swan for women investors in the Scottish American Investment Trusts, whose shares were also traded in Dundee.494

Conclusion

The analysis of shareholdings in the Samnuggur, Titaghur and Victoria jute mills showed that they were dominated by personal ties, based on family or business relationships whose centre of gravity was in Dundee. The capital demands of the growing firms over time could not be sustained purely on the basis of personal ties and the directors of the firms were forced to seek a wider base of shareholders. The dominance of personal ties formed in Dundee remained critical to the firms and rendered any external challenge to the directors’ control unlikely. The shareholders were largely passive and instances of dissent were extremely rare. This passivity derived from the fact that shareholders were content to receive above average dividends consistently relative to alternative investment opportunities, and many of them had personal ties to at least one of the directors. This allowed the directors of the managing agency to generate lucrative rents from commissions.


Share-shopping over the counter: Thatcherism and the battle for the private investor, c.1972-88

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In 1984, *The Times* ran an article titled ‘Rival visions of a financial revolution in the high street’. And indeed, Christopher Stanley characterizes the financial revolution of the 1980s as struggle for hegemony between the ‘new enterprise culture’ promoted by the Conservative Party and an old ‘City Culture’ which governed capital transactions on the stock market. This stresses the importance of Thatcherism as an ideological transformation, in which the City establishment struggled to maintain a system of values which defended and legitimized its interests. In this light, the 1980s becomes a story of cultural change.

There has been much work focusing on the ideological project of Thatcherism. Academics have demonstrated the importance of constructed narratives such as economic crisis, social decline, and the ‘ordinary people’ of Britain. These analyses have no doubt added to our understanding of the Thatcherite political economy, but they fail to account for more material factors which have shaped the experiences of the individual in the late twentieth century. This paper argues that in the domain of popular share ownership, economic and institutional rather than ideological struggle proved to be the real battleground of the decade. Largely using reports of the financial press, and accounts by those individuals involved at the time, the following focuses on two opposing set of institutions – licensed dealers operating an Over-the-Counter market and the established elite of the London Stock Exchange. The tensions between these institutions will be used to demonstrate that the 1980s cannot be seen merely as an ideological struggle to shape popular perceptions of investment. Underpinning surface tension over the relative merits or flaws of yuppie culture was a more pragmatic conflict over the ability of different institutions to service new and existing markets.

First it is necessary to outline the difference between the over-the-counter market (OTC) and the London Stock Exchange (LSE). The OTC was a late addition to the U.K. securities market, first appearing in 1972. It was created by a series of small licensed dealers. These were companies which had licences to deal in shares but which were not members of the LSE. They worked on the very fringes of the U.K. securities market, buying and selling shares only in companies which did not meet the stringent requirements for a listing on the LSE. Whilst only well-established and reasonably large companies could pass the LSE’s vetting process, by comparison, the licensed dealers of the OTC made markets in very small and new firms looking to raise venture capital. These companies offered a far riskier prospect than the blue chip companies of the main exchange. According to Tom Wilmot, the infamous chairman of the largest licensed dealer Harvard Securities, creating these kind of markets ‘attracted a great deal of criticism from the financial establishment’. As a market falling outside the regulatory regime of the LSE, the OTC questioned its authority, both in terms of direct competition, and as an alternative dealing culture.

Before further exploring the nature of the relationship between these institutions, it is worth also briefly outlining the wider context of the City of London in this period. The arrival and expansion of the OTC coincided with a period of uncertainty for the LSE. Throughout the late 1970s and early 1980s it came under mounting political and public pressure regarding its

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495 ‘Rival visions of a financial revolution in the high street’, *The Times* (6 April, 1984).
496 Christopher Stanley (1992).
monopolistic position and restrictive rules. Consequently, the LSE entered into negotiations with the government in an attempt to stave off greater political intervention which could have hampered its existing self-regulatory framework. A deal was eventually brokered in the early 1980s, with the LSE agreeing to end the ‘closed shop’ nature of its activities. As a result, issues of regulation and investor protection became the focus of much debate and jockeying in and around the City. At a time when the future of the U.K. securities market was far from clear, those such as the OTC, who had previously been excluded from the City, spotted an opening for advancing their own agenda.

The dealers of the OTC were keen to draw attention to friction between themselves and the City establishment, apparently adhering to the old adage that there is no such thing as bad publicity. Tom Wilmot of Harvard Securities proved to be an especially vocal rival. For example, in 1985 at the height of debates surrounding deregulation, he published his own account of the OTC. An intriguing document, Wilmot’s book repeatedly appropriated the rhetoric of Thatcher’s government in order to legitimize the role of the OTC as a necessary part of the U.K. securities market. Simultaneously he attacked the regulatory monopoly run by the LSE which he described as ‘extremely narrow-minded’, and as ‘act[ing] … against the interests of the general public’.

Given that his business relied on private investors, it was in Wilmot’s interest to present the OTC as a kind of people’s market. He appropriated a discourse which stressed the role of free market competition in democratizing access to shares. This enabled him to condemn mainstream of financial services for leaving the private client in a ‘vacuum’ unless they had over £25,000 to invest. Moreover, he argued that in providing small companies the means to access venture capital, the OTC satisfied a ‘real demand, creating and stimulating opportunity and employment’. This was a clear appeal to the Thatcher governments’ advocacy of small business as the heart of British enterprise and the national economy. And his repeatedly expressed argument did not go unheeded. Reporting in 1984, one journalist gave ‘full marks to Mr Wilmot for services to the very freest of enterprise’. It appeared that the OTC could offer something the LSE could or would not.

The reaction of the LSE was to condemn the OTC as an unpleasant offshoot of the U.K. securities market. Licensed dealers’ refusal to treat share-dealing as a serious and respectable form of investment drew the indignation of the City establishment. Roger Baden-Powell, chairman of the self-regulatory body for licensed dealers, characterized the OTC as a market for ‘members of the public who are bored with building societies and unit trusts’. Put more bluntly, ex-dealer Alexander Davidson stated: ‘Clients of licensed dealers wanted exciting stocks,’ they are ‘hooked … like gamblers to the roulette table’. Rather than packaging share-dealing as a safe activity for respectable family men, licensed dealers embraced the popular currency of the yuppie as a youthful and proactive risk-taker. They sought to capitalize on the allure of modern money culture to sell a vision of popular capitalism as a leap into individualistic irresponsibility in the pursuit of personal wealth. Underpinned by a familiar rhetoric of free choice and competition, the OTC seemingly embodied the worst of the new ‘enterprise culture’ of the 1980s. It represented an alternative set of values and encouraged individuals to adopt a different relationship with capital than was being offered by the LSE.

It is clear to see why, then, the conflict between the OTC and the LSE could be understood as a cultural one. There was a visible clash of values and approaches to concepts such as enterprise culture, regulation, and over the good-name of the City. As such, the

499 Ibid., 62.
500 Ibid., 2-3.
501 Ibid., 10, 12, 81, 111.
friction between the two was frequently framed as a matter of integrity in the press. One financial journalist argued that the ‘haphazard OTC boom has created worries about the lack of strict supervision and … free-for-all atmosphere that … markets operating in different ways can create’. The LSE also attacked the high-risk and unregulated nature of the OTC, and licensed dealers were described as share-pushers or barrow boys. For the LSE their scandalous activities cast a shadow over the good name of investment. However, the LSE was by no means free of scandal itself. Discussing the similarities between the activities of the OTC and LSE member firms, Patience Wheatcroft of the Daily Mail commented that ‘the time is fast approaching when the authorities will either have to admit why they don’t like Wilmot, or learn to live with him’. Wheatcroft’s observation was an astute one. Rather than concerns over investor protection and the good name of the City, the battle between the OTC and the LSE centred on the ability of each to provide for the small business and private investor markets. This was a case of institutional competition.

Small investors had been a persistent point of anxiety for the LSE which had long taken a somewhat sporadic approach to them. Even at times when the Stock Exchange Council sought to encourage popular share-ownership, the uneconomical prospect of private client broking was a major sticking point for most members. Smaller firms were unable to justify dealing expenses in the case of small-transactions, whilst large London-based firms were unwilling to subsidize private investors by paying higher charges. In 1971, the Financial Times noted that only half of Stock Exchange member firms were willing to make their names available to small investors. As such, the growth of an external market which offered affordable, ‘no-frills’ dealing to precisely this group, was a cause for anxiety, regardless of how it went about its business.

The OTC was also a source of competition for commission on trading in small companies. The LSE had previously dealt in the kinds of shares bought and sold on the OTC under Rule 163 (2) (e). This rule was only intended to enable infrequent transactions to take place in small, unquoted U.K. public companies. However, with the apparent expansion of the OTC the inadequacy of the current system became obvious. The LSE thus set up a ‘study group’ in 1979 led by the head of the Stock Exchange Quotations Committee. This resulted in the launch of the Unlisted Securities Market (USM) in 1980 which allowed dealing in smaller companies with greater risks and potential gains. The LSE pitched this as a reaction to the 1980 Wilson Committee Review which called for a need to improve market mechanisms to encourage investment in small companies. But it was more widely held that it was a reactive and protective manoeuvre. Comments in the financial press indicated that the LSE would ‘undoubtedly have preferred to avoid such fraying at the edges – this after all smacks of … fragmentation’. It was generally held that the USM was a reaction to the OTC which had ‘gobbled up some useful pieces of potential business’ at a time when the new issue market had been ‘dead for too long’. The Times asserted that this had left the LSE unable ‘to take any other view at the moment [reacting] … as it did when Ariel threatened its traditional institutional business a few years ago’. In other words, it moved to regain its monopoly.

External competition in form of the OTC led the LSE to establish new channels through which to service neglected areas of the market. Nonetheless, although the requirements for entry onto the USM were less stringent than those on the main exchange,

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507 Ranald Michie (1999), 492-3.
511 Ibid.
512 Ibid.
they were still more taxing than the requirements of the OTC. Consequently, licensed dealers
continued to create markets in companies whose associated risks simply could not be tolerated
by the regulatory regime run by the LSE. It persisted as a source of competition at the fringes
of the U.K. securities markets. Consequently, Wilmot faced the impending deregulation of
1986 with optimism. Anticipating that power would become concentrated in fewer hands he
confidently predicted that the niche markets of licensed dealers would ‘do well’ by serving
those who were of little interest to large financial institutions, namely small businesses and
private investors. He concluded that ‘The OTC market in the United Kingdom is here and
here to stay. Those who ignore it do so at their peril’. Just three years later, Harvard
Securities was wound up and Wilmot described the OTC as a ‘dead industry’.

The question arises; how did Wilmot get it so wrong? He could be accused of
misinterpreting the economic boom of the mid-1980s as long-term expansion. There is no
doubt that the October 1987 crash put a strain on the company. The Guardian reported that
Harvard lost an estimated £2.5 million, offsetting the entirety of its previous two years profits.
However, the paper also noted that even before the crash, the failure of Harvard to gain
external LSE membership had ‘necessitated retrenchment’. Here the full extent of the
institutional competition between the two is revealed. As part of the deregulation of the stock
market in 1986 firms were required to gain membership to the LSE or one of a set of new
Self-Regulatory Organizations. Despite applying for membership well before 1986, it took
over a year for the LSE to reject Harvard’s application. This impediment appeared to be a
deliberate snub designed to undermine Harvard’s ability to trade, with one journalist
describing the ‘unseemly delay’ as ‘grossly unfair’. For a short time, Harvard was able to
function under interim authorization, but the Daily Mail reported in 1988 that Wilmot had
decided that ‘he had run out of time and money’. Harvard pulled out of the OTC in
September that year, leaving the market effectively over. Other licensed dealers had shared a
similar fate in the post-deregulation climate. Companies such as Ravendale Securities also
failed to have their licences renewed by the Department of Trade and Industry, in this instance
surviving only two weeks after deregulation.

Ultimately, it was not the attacks on the OTC’s scandalous reputation that ended its
short-lived run, it was the ability of the establishment to oust licensed dealers in the upheavals
of deregulation. Describing the end of the OTC as a ‘summary execution’, financial journalist,
Michael Walters commented that ‘the Office of Fair Trading cannot feel comfortable that the
Stock Exchange has secured a monopoly … the end of the OTC, with no alternative outlet for
thousands of innocent investors, cannot be good news’.

The 1980s appeared to be a period of dramatic and visible change in the City as the
bowler hats of the traditional elites gave way to the red braces and pinstripes of the new
yuppies. However, the rhetorical battle between the City culture of old and the enterprise
culture of new ended up having little bearing in the post-1986 environment. As the experience
of the OTC suggests, traditional financial elites maintained and even expanded their position
in private investor markets in this period, not through the assertion of a hegemonic ‘culture’,
but through the physical exclusion of competition. The real lines of conflict concerned not
what approach to investment a particular service promoted, but which institution was
providing it. During this period, large financial conglomerates such as banks, pension funds
and unit trust companies capitalized on the deregulated environment to capture private
investor markets and shape them to their needs. They created services which channelled

513 Wilmot (1985), 111.
516 ‘Wilmot may offer his Harvard head’, Daily Mail (26 June 1987).
individual capital through institutional investment instruments, rather than providing a means for individuals to engage in mass democratic ownership.

This highlights the limitations of the Thatcherite challenge as the economic self-interest of different institutions superseded the ideological designs of the New Right. It is clear, that histories of this period must begin to account for the material conditions which shaped the changes associated with Thatcherism. We must consider Thatcherism, not only as the ideological project of a political and intellectual elite, but as the outcome of institutional conflict. In protecting its own monopolistic position, the LSE frequently protected the economic interests of its largest and most influential members. For the private investor, this meant a contraction of choice in their routes to access capital.
In May 1945, the *Belfast Telegraph* reported that ‘the average patron may not be aware that no matter whether a cinema makes money or loses it, anything from 40 to 45 per cent of every shilling taken at the box office does not go into the cinema’s coffers but is handed over to the Minister of Finance in entertainment tax’. This paper utilizes records of entertainments duty (also known as entertainment tax) to investigate cinema programming and audience preferences in postwar Belfast. It follows the work of historians who have assessed box office figures and cinema listings to assess the cinema-going habits of particular communities in the United Kingdom. Following the Second World War, cinema-going was the most popular commercial leisure activity in the United Kingdom. During the 1950s, however, increased affluence, the introduction of television and the diversification of leisure activities meant that cinema attendance declined rapidly. U.K. cinema admissions fell from their peak of 1.635 billion in 1946 to 449.1 million in 1961. This dramatic postwar decline in attendance prompted enquiry by a range of contemporary statisticians and social scientists. While historians such as Barry Doyle have utilized government statistics to investigate the geography of this decline, cinema audiences in Northern Ireland have received little attention. Details of Belfast’s historical cinemas are well documented and Irish film historian Kevin Rockett has detailed the implementation of entertainments duty in Northern Ireland.

The fact that levies from cinema admissions constituted the lion’s share of total entertainments duty reflects both the popularity of cinema as a leisure pursuit in this period and its fiscal importance to the Northern Ireland government (see figure 1). While records of entertainments duty exist only for particular years (the financial years 1948-9, 1952-3, 1956-7 and 1960-1), they provide the basis for an investigation of relative film popularity and trends in cinema attendance. The records detail box-office revenues, entertainments duty payments and weekly breakdowns of the number of tickets sold in each price category. They do not provide information on operating costs or ancillary income of cinemas. When combined with programme listings in the *Belfast Telegraph*, these records provide the material for an assessment of the relative popularity of films exhibited. Cinemas varied greatly in terms of size, seating capacity, décor, facilities and status, and this paper focuses particularly on the records of five cinemas (the Broadway, the Regent, the Ritz, the Strand and the Troxy) that.

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519 *Belfast Telegraph*, 7 May 1945.
were located in different geographical areas of the city and served patrons with different levels of disposable income. This paper provides case studies of two films, investigates the popularity of films by country origin and assesses the decline in cinema attendances from 1952 onwards.

Figure 1: Entertainments duty receipts in Northern Ireland

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
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<tr>
<td>Cinemas</td>
<td>£603,798</td>
<td>£607,495</td>
<td>£656,063</td>
<td>£644,041</td>
<td>£643,683</td>
<td>£648,484</td>
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<tr>
<td>Others</td>
<td>£57,736</td>
<td>£58,129</td>
<td>£52,711</td>
<td>£54,505</td>
<td>£51,998</td>
<td>£44,712</td>
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<tr>
<td>Total</td>
<td>£661,534</td>
<td>£665,624</td>
<td>£708,774</td>
<td>£698,545</td>
<td>£695,684</td>
<td>£693,196</td>
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</tbody>
</table>


Case studies: Captain Boycott and The Quiet Man

*Captain Boycott* (Dir. Frank Launder, 1947), starring Cecil Parker as Charles Boycott, depicts the events of the Irish Land War in the late nineteenth century. A case study of this film highlights the difficulties in assessing audience preferences. In the period under review, cinema programmes normally comprised a first feature and a second feature, alongside a range of shorter films including cartoons, serials and newsreels. Though the first feature was often displayed prominently in local press adverts, it did not necessarily constitute the main attraction for cinema-goers. *Captain Boycott* was shown at the Broadway from 29 March to 2 April 1948; it generated £1,189 13s 9d in box-office revenue and was the highest grossing film in 1948-9. The 1,380 seat Broadway cinema was located in the predominantly nationalist working-class Falls Road area of Belfast and it is likely that patrons at the Broadway were attracted to a film that depicted historical events in Ireland, and one that focused on Irish politics and identity. The supporting feature, however, was the newsreel of the World Flyweight Championship fight between Belfast-born Rinty Monaghan and Jackie Patterson. While the fight took place in Belfast, and was broadcast on the BBC Light Programme, for many the cinema provided the only opportunity to view footage of the contest. Furthermore, in 1948, Easter Monday fell on 29 March; Easter was traditionally a popular time for cinema-going in Belfast and programmes during this week were popular in all Belfast cinemas.

Case studies of individual films also highlight the phenomenal success of a small number of films and the chain of distribution in Belfast cinemas. The Ritz’s access to first-run MGM films, central location, large seating capacity and higher ticket prices meant that it was able to generate the greatest amounts of box-office revenue. It was ABC’s premiere Belfast cinema; it had a seating capacity of 2,116 and in April 1952 prices ranged from 2s to 5s 6d. *The Quiet Man* (Dir. John Ford, 1952) was by far the most successful film during the years in which records are available. The film was shown at the Ritz for five weeks from 18 August to 20 September 1952 and the sale of 195,485 tickets generated £23,617 in box office revenue. The second most popular film at the Ritz, *The African Queen* (Dir. John Huston, 1951), sold 52,098 tickets during its two week run. Subsequent exhibition in inner-city/suburban Belfast cinemas demonstrates the continued popularity of the film and highlights how distributors maximized their revenue in Belfast. James Doherty described the 1,141 seat Strand cinema as ABC’s junior partner to the Ritz and recalled that ‘for the many (most) who could not afford
the expensive Ritz, they could be certain to see the new releases at the Strand’. When *The Quiet Man* was screened at the Strand from 27 October to 8 November 1952, it was the most successful film of 1952-3 and 26,643 admissions are recorded. It then became the second highest grossing first feature at the 1,125 seat Troxy, where it was screened from 1-6 December 1952. The film was successful across the United Kingdom and *Kine Weekly* reported that, in Britain, it was the thirteenth most popular film of 1952. The evidence here suggests that the film was disproportionately popular in Belfast.

**American and British features**

The records reveal many of the social and economic factors that determined cinema-going habits. While the main feature formed only part of the cinema, an assessment of their popularity provides an indication of audience preferences. Figure 2 displays the general predominance of American first features in 1948-9. Northern Ireland was free from the legislation that required exhibitors in Great Britain to screen a minimum quota of British films, and it is clear that Belfast cinema-goers preferred American films. In 1948-9, the Troxy screened the highest proportion of American first features (83.33 per cent) and all of its ten highest grossing first features were American productions. The best performing British film at the Troxy – a 1947 re-release of *Sanders of the River* (Dir. Zoltan Korda, 1935) – was only the eighteenth highest grossing film in 1948-9. The film that generated the least box office revenue – *The Courtneys of Curzon Street* (Dir. Herbert Wilcox, 1947) was also British. (U.K., 1947). In 1952-3, the proportion of American films at the Troxy increased to 92.43 per cent and then later fell to 86.13 per cent in 1956-7.

British films were more prevalent at the Ritz than at other Belfast cinemas. In 1948-9, the cinema screened twenty-six American first features, nineteen British first features and one U.S./U.K. co-production. British first features constituted 41.3 per cent of the total screened and were exhibited on 133 of the 317 days (41.96 per cent) that the cinema opened. They were only slightly less popular than their American counterparts, and contributed 39.2 per cent of the gross box office revenue that the cinema generated. American first features were screened on 178 of 317 days (56.15 per cent) and generated 59.5 per cent of the total revenue. Three of the ten highest-grossing first features at the Ritz were British productions: *Spring in Park Lane* (Dir. Herbert Wilcox, 1948), *My Brother Jonathan* (Dir. Harold French, 1948), and *An Ideal Husband* (Dir. Alexander Korda, 1947). The proportion of British features at the Ritz, however, decreased to 25 per cent in 1952-3 and remained at that level in 1956-7. The evidence suggests that certain British films became more popular throughout the 1950s. The 750 seat Regent was the main city centre site for local chain Curran Theatres until the Rank Organization purchased the cinema in December 1956. In 1952-3 the ten best attended films at the Regent were all U.S. productions. In 1956-7, British war film *The Cockleshell Heroes* (Dir. Jose Ferrer, 1955) was the most successful film at the Regent and generated £5,000 11s 5d from the sale of 42,982 admissions during its four-week exhibition. By 1960-1, three of the ten most successful films at the Regent were British productions: *Watch Your Stern* (Dir. Gerald Thomas, 1960), *Circus of Horrors* (Dir. Sidney Hayers, 1960), and *Peeping Tom* (Dir. Michael Powell, 1960).
The decline of cinema-going in postwar Belfast

In the United Kingdom, cinema admissions fell from 1.43 billion in 1949 to 449.1 million in 1961.529 Figure 3 displays the comparative revenue and admissions of the cinemas under review.530 From 1952-3 to 1956-7, attendances declined at all of the cinemas, though they did not decline uniformly. The smallest decline in dutiable admissions was experienced by the Regent, where admissions dropped by 6.4 per cent from 473,564 in 1952-3, to 443,273 in 1956-7. There was no correlation between the fall in admissions and the relative status of the cinemas. The Regent and the Ritz were both city centre first-run cinemas, though the decline in admissions was much greater at the Ritz than it was at the Regent. Admissions at the Ritz fell by 11.53 per cent, from 1,252,019 in 1952-3, to 1,107,646 in 1956-7. At the Broadway and the Strand admissions declined by 7.1 per cent and 10.06 per cent respectively. The Troxy suffered the greatest decline in attendance, and admissions fell by 14.4 per cent from 507,134 in 1952-3, to 434,107 in 1956-7. The extent of this decline, in part, is attributable to the opening of Belfast’s first postwar cinema, the Lido, in March 1955, located under a mile from the Troxy.

In 1956, Belfast’s population of 443,671 was served by forty-four cinemas with a total seating capacity of 40,000.531 In his 1957 budget, Northern Ireland Finance Minister Terence O’Neill removed duty from living theatre and taxable sport, reduced tax for cinemas and announced that 9d seats were now free from taxation.532 In 1958, he then announced significant further reductions in entertainments duty and cinema payments fell by 46.22 per cent from £528,521 in 1958 to £284,216 in 1959. In Great Britain, it is clear that the introduction of commercial television, accompanied by the ability of working-class families to obtain television sets, signalled the end of cinema-going as the predominant commercial leisure activity. These changes were linked also to rising wages, increasingly comfortable living conditions and new forms of commercial leisure. These developments occurred also in Northern Ireland, though later than in many parts of the United Kingdom. UTV, Northern Ireland’s first commercial television station, started broadcasting only in 1959 and the impact

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530 In 1960–61, records for the Ritz and the Strand are unavailable.
532 *Belfast Telegraph*, 21 May 1957.
upon cinema audiences is clear as entertainments duty revenue fell by 29.77 per cent from £284,216 in 1959 to £199,610 in 1960. Entertainments duty was abolished in Great Britain in 1960. At this point, O’Neill only altered the tax so that the first £20 of duty payable by a cinema in any week was remitted.\footnote{Hansard N.I. (Commons), xlvi, 1703–4 (24 May 1960).} The tax was finally abolished in Northern Ireland in May 1961. Due to these changes in the rates of entertainments duty, the records for 1960–1 are a less reliable indicator of audience preferences. Figure 3, nonetheless, shows that, following concessions in entertainments duty, more expensive cinemas such as the Regent continued to pay a greater proportion of their revenue in the form of taxation. Between 1958 and 1962, seventeen Belfast cinemas closed down. These were largely older cinemas and the Broadway, the Regent, the Ritz, the Strand and the Troxy remained open during the period under review. From 1956–7 to 1960–1, revenue at the Regent decreased by 9.76 per cent from £51,220 to £48,631 and dutiable admissions decreased by 20.15 per cent from 443,273 to 353,958. While the number of tickets for the back stalls decreased by 27.3 per cent, those for the balcony decreased by only 14.31 per cent. Cinema-going was now less of a habitual activity and an increasingly younger audience preferred to pay more for better seats in more upmarket cinemas. This meant that first-run city centre cinemas were able to generate larger amounts of revenue despite declining attendances. As large exhibitors such as Rank closed their smaller, less profitable cinemas, they renovated large suburban cinemas and provided them with films sooner. In March 1962, for instance, ABC introduced ‘occasional first-run films to Belfast suburban audiences’ at the Strand and the Majestic.\footnote{Kineamatograph Weekly, 22 March 1962.}

Figure 3: Revenue, taxation and admissions at Belfast cinemas

<table>
<thead>
<tr>
<th>Cinema</th>
<th>Gross Box Office Revenue</th>
<th>Entertainments Duty Payments</th>
<th>% of Gross Revenue Paid as Entertainments Duty</th>
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<td>1946–9</td>
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<tr>
<td>Broadway</td>
<td>£36,253 16s 10d</td>
<td>£11,556 13s 7d</td>
<td>32.12</td>
</tr>
<tr>
<td>Regent</td>
<td>£44,495 7d</td>
<td>£17,898 6s 4d</td>
<td>40.23</td>
</tr>
<tr>
<td>Ritz</td>
<td>£129,610 11s 6d</td>
<td>£51,133 13s 7d</td>
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<tr>
<td>Strand</td>
<td>£36,076 9s 8d</td>
<td>£12,598 5s 9d</td>
<td>34.92</td>
</tr>
<tr>
<td>Troxy</td>
<td>£30,325 18s 3d</td>
<td>£9,407 5s 9d</td>
<td>31.01</td>
</tr>
<tr>
<td>1952–3</td>
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<tr>
<td>Broadway</td>
<td>£23,855 15s 10d</td>
<td>£9,892 2s 1d</td>
<td>36.11</td>
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<tr>
<td>Regent</td>
<td>£48,651 9s 11d</td>
<td>£218,523 19s 7d</td>
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<tr>
<td>Ritz</td>
<td>£155,502 1s 4d</td>
<td>£264,409 3s 7d</td>
<td>41.21</td>
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<tr>
<td>Strand</td>
<td>£42,490 14s 8d</td>
<td>£123,898 8s 2d</td>
<td>32.24</td>
</tr>
<tr>
<td>Troxy</td>
<td>£28,503 16s 6d</td>
<td>£7,884 4s 2d</td>
<td>27.66</td>
</tr>
<tr>
<td>1956–7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broadway</td>
<td>£31,553 3s 2d</td>
<td>£8,695 9d</td>
<td>27.56</td>
</tr>
<tr>
<td>Regent</td>
<td>£51,220 3s 6d</td>
<td>£118,501 9s 6d</td>
<td>36.24</td>
</tr>
<tr>
<td>Ritz</td>
<td>£152,943 4s 3d</td>
<td>£258,580 19s 2d</td>
<td>39.02</td>
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<tr>
<td>Strand</td>
<td>£38,383 18s 3d</td>
<td>£111,898 6s 5d</td>
<td>31.00</td>
</tr>
<tr>
<td>Troxy</td>
<td>£29,227 13s 8d</td>
<td>£7,721 9s 6d</td>
<td>26.42</td>
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<td>1960–1</td>
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<td>£19,524 7d</td>
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<td>Troxy</td>
<td>£8,036 19s</td>
<td>£2,485 11s 2d</td>
<td>10.77</td>
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Source: Entertainments Duty Weekly Summaries (1948–61), PRONI, Belfast, FIN/15/6/C.
Conclusion
This paper provides examples of some of the ways in which the records of entertainments duty can be utilized to assess cinema programming and audience preferences in postwar Belfast. It addresses issues in assessing audience preferences, examines the popularity of particular films, demonstrates the preference for American rather than British films, and assesses the decline of cinema-going in relation to broader economic, political and social developments. To further enhance an understanding of cinema-going in postwar Belfast, records of entertainments duty can be utilized alongside qualitative source material such as newspaper articles, trade journals and oral history testimony as a form of triangulation. It should also be considered in relation to other studies of cinema-going in other cities in Britain and Ireland that consider how age, class, gender, and location determined cinema-going habits. While Belfast displayed similarities to many other urban centres in the U.K., cinema-going here was to a large extent determined by local factors such as the absence of quota legislation and the late introduction of commercial television.
Fostering ‘cost-consciousness’ in infection control: 
The Royal Infirmary of Edinburgh, 1948-70

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Supervisors: Professors Marguerite Dupree & Malcolm Nicolson

The creation of the National Health Service in 1948 had major financial implications for the British state during the postwar period. According to Abel-Smith (1978), in England and Wales the cost of the first nine months alone (£242 million) surpassed the predicted net cost per annum by some £63 million. 535 Running costs in Scottish hospitals during the first nine months amounted to £19.7 million per annum, this figure rising to £48.3 million by 1959-60 and to £110.7 million by 1969-70. 536 So too have scholars analysed hospital practice during the ‘antibiotic era’, focusing on the impact of antibiotics since the Second World War and the emerging phenomenon of antibiotic resistance. 537 However, no attempt has been made to explore the relationship between infection control and hospital finance. Using the Royal Infirmary of Edinburgh (RIE) as a case study, this paper argues that advances in infection control best explains the dramatic rise in surgical expenditure between 1948 and 1970. Moreover, it documents the drive to foster a culture of ‘cost-consciousness’ at the hospital and the considerable, yet far from detrimental, impact that this had on surgical practice.

From January to June 1948, a modest £49,586 was spent at the Infirmary on a range of surgical items. The vast majority of funds covered three key areas: instruments and appliances (£18,446); drugs, chemicals, and disinfectants (£16,590); and dressings and bandages (£10,365). 538 Given the importance of these goods for anti-infection strategies, it is these three key areas of spending that this paper focuses on. Relevant data on expenditure between 1948 and 1958 is lacking. However, the hospital’s annual reports from 1958 onwards highlight the rising cost of surgical care under the new service (table 1):

<table>
<thead>
<tr>
<th>Financial year (April-March)</th>
<th>Surgical expenditure</th>
<th>Hospital running costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1957-8</td>
<td>150,260</td>
<td>1,531,778</td>
</tr>
<tr>
<td>1958-9</td>
<td>157,307</td>
<td>1,632,432</td>
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<tr>
<td>1959-60</td>
<td>170,057</td>
<td>1,770,544</td>
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<tr>
<td>1960-1</td>
<td>178,528</td>
<td>1,875,438</td>
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<tr>
<td>1961-2</td>
<td>206,017</td>
<td>2,023,102</td>
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<tr>
<td>1962-3</td>
<td>199,689</td>
<td>2,097,343</td>
</tr>
<tr>
<td>1965-6</td>
<td>294,334</td>
<td>2,618,558</td>
</tr>
<tr>
<td>1966-7</td>
<td>333,721</td>
<td>2,827,224</td>
</tr>
<tr>
<td>1967-8</td>
<td>365,146</td>
<td>3,096,752</td>
</tr>
<tr>
<td>1968-9</td>
<td>393,665</td>
<td>3,343,888</td>
</tr>
<tr>
<td>1969-70</td>
<td>452,878</td>
<td>3,711,305</td>
</tr>
</tbody>
</table>

Source: Lothian Health Services Archive (LHSA), LHB2/3/1-6, 9-13, RIE Annual Reports (1957-63, 1965-70).

Evidently, there was a colossal growth in expenditure on drugs, dressings, instruments, and appliances during 1948-70. By 1957-8, expenditure on these items reached £150,260, an increase of 66.8 per cent since 1948. During the late 1950s and 1960s, both surgical expenditure and total hospital running costs increased with the former accounting for an increasing proportion of the latter, rising from 9.8 per cent of running costs in 1957-8 to 12.2 per cent by 1969-70. From 1960, the annual reports give separate figures for drugs, dressings, instruments, and appliances, reflecting the growing awareness of the rising cost of care. Figure 1 illustrates the continued increase in surgical expenditure during the 1960s.

![Fig. 1: Surgical Expenditure, 1960-70](image)

Source: LHSA, LHB2/3/4-13, Annual Reports (1960-70).

Whilst in 1948 instruments and appliances represented the largest proportion (37 per cent) of surgical expenditure, by 1960 it was the drug bill that constituted the bulk of spending.539 This change is best explained by the increasing popularity of antibiotic therapy after the introduction of penicillin in 1944.540 Despite the revolutionary impact of penicillin on wound care during the Second World War and immediately thereafter, growing concerns about antibiotic resistance hastened the introduction of various new drugs to treat infections upon which penicillin had no effect.541 Between 1942 and 1960, 12 antibiotics were discovered and/or introduced into clinical practice in Britain.542 One former Infirmary surgeon remembered both the wide use of antibiotics and the ongoing cycle of drug development and resistance which kept costs high:

Well, in the sort of late ‘50s, early ‘60s, the new penicillins were coming in. And of course there was methicillin, which was highly effective against the old original

539 Ibid.
540 LHB1/1/74, RIE managers’ minute books (1943-44), pp. 224-225.
antibiotic-resistant staphylococcus. But of course nowadays you’ve got the methicillin-resistant staph and so it goes on. But we were using the tetracyclines, we were using the oral penicillins. Och, a whole range of broad-spectrum … We were realising that to be really effective, you needed a bactericidal antibiotic, not just a bacteriostatic one. And the cephalosporins were beginning to come in at the end of that period. They were really widely-used.\textsuperscript{543}

Antibiotics were administered in a number of ways: by drip, by intra-muscular injection, as an ointment, as a lozenge, and in tablet-form.\textsuperscript{544} They were used to treat both established infections and as prophylactics to prevent infection.\textsuperscript{545} The lecture notes of a medical student who trained at the Infirmary during the 1950s show that students learned to counteract resistance by increasing the dosage of the antibiotic or using it in combination with another, strategies which had significant financial connotations.\textsuperscript{546} Whilst antibiotics were an indispensable part of the hospital’s infection control strategy, initially little attention was paid to the ‘proper’ way of using them despite the efforts of bacteriologists who stressed the need to use them cautiously.\textsuperscript{547} Concerns over antibiotics were partly clinical in light of the threat of resistance. However, so too did they have huge financial implications, particularly during the 1960s. Although the drugs bill increased yearly after 1948 it increased by 34 per cent between 1963-4 and 1968-9 alone, rising from £90,106 to £120,961. The rate of growth in antibiotic expenditure surpassed that of all drugs, increasing by 58.5 per cent (from £20,000 to £31,600) in the same period.\textsuperscript{548}

Problems with drug expenditure can be partly attributed to the pressures that pharmaceutical companies mounted on the Infirmary staff, particularly its junior doctors. Until the late 1960s, representatives of pharmaceutical firms had free access to the hospital and visited regularly to showcase their new but costly drug and even to leave free samples. Some clinicians valued the knowledge and expertise of the drug reps as part of their continuing medical education. On the other hand, they were recognized to have contributed to wasteful expenditure.\textsuperscript{549}

By the mid-1960s the instruments bill surpassed drug expenditure (figure 1). Again, this can be explained by the arrival of new anti-infection technologies. During the late 1950s and 1960s, various disposable instruments were introduced including disposable face masks, gloves, catheters, urine specimen bags, stomach tubes, and blood transfusion tubes.\textsuperscript{550} Between 1961-2 and 1966-7 alone, the disposables bill rose from £11,961 to £54,290, or by 359 per cent.\textsuperscript{551} The increasing cost of dressings can be attributed to the introduction of disposable pre-sterilized dressing packs, purchased from outside suppliers. Although these packs brought about a saving in nursing labour and improved infection control, their huge production costs stemmed from the high cost of labour from individuals both within and outside of the clinical realm, from textiles to surgery. By 1965, approximately 290 different types of dressings were used at the Infirmary compared to about 60 just 10 years previously.

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\textsuperscript{543} Interview with Iain Ferguson Maclaren by Susan Gardiner (27 Feb 2015).
\textsuperscript{544} Interview with Philip Roger Myerscough by Susan Gardiner (6 March 2015); interview with Joan Bell by Susan Gardiner (28 April 2015); interview with Ena Ross by Susan Gardiner (29 April 2015); LHSA, GD1/74/3/46, Letter from DN Braid of the Department of Health for Scotland to Prof. S Smith, Dean of Edinburgh University Medical School (16 Oct 1945).
\textsuperscript{545} Interview with Philip Roger Myerscough.
\textsuperscript{546} Edinburgh University Library Special Collections, GB237 Coll-1152, E2008/40/2/5, Medical notes of GE Philip, chemotherapy lecture (c.1954).
\textsuperscript{547} Interview with Iain Ferguson Maclaren.
\textsuperscript{549} Interview with Philip Roger Myerscough.
\textsuperscript{550} LHB1/80/61, Minutes of the Hospital Infection Committee (18 Nov 1959), (20 June 1960); (18 June 1962); (15 March 1965); LHB2/3/5, Annual Report (1961-2), p. 31.
\textsuperscript{551} LHB2/3/10, Annual Report (1966-7), p. 27.
It was recognized in the annual reports that a ‘weeding out’ of less useful packs was necessary to lower costs. 552 The RIE introduced various measures to foster a culture of ‘cost-consciousness’ whilst still minimizing infection. The term ‘cost-consciousness’ comes from the 1959 report of the Scottish Committee on Prescribing Costs which stated that careless prescribing contributed to a nationwide ‘absence of cost-consciousness [where] one would not even expect to find economy’. 553 To foster economy, the Infirmary established a sub-committee of staff members in 1958 to monitor drug costs. Initially, it comprised the Chief Pharmacist, a dermatologist, an associate physician and the hospital’s Honorary Secretary. 554 The nature of its membership reflects the growing recognition that question of economy needed close collaboration amongst staff with varying areas of expertise. 555 Its early recommendations included: to display wall charts illustrating drug costs across the hospital; to gather information on expenditure in each ward; to reduce the number of drugs of similar therapeutic value kept in stock; and to promote the use of cheaper but satisfactory alternatives to more expensive drugs. 556 By the mid-1960s, the ‘Economy in Prescribing Committee’ was meeting regularly to monitor expenditure and its membership included representatives from medical, surgical, nursing, and pharmaceutical staffs. 557 It continued to make recommendations to effect economy. For example: it promoted the use of the antibiotic cloxacillin in place of methicillin, cloxacillin being cheaper and still satisfactory; and it closely monitored the use and cost of a range of antibiotics and antiseptics, frequently issuing circulars to staff as a reminder. 558 Monitoring – or in some cases restricting – drug use undoubtedly had positive outcomes for both economy and infection control: economy, in decreasing the use of costly drugs; and infection control, in hampering the spread of resistance.

As mentioned previously, drug costs were only part of the expenditure problem. By the mid-1960s, the Committee’s remit expanded to include a range of surgical products. Items other than drugs were frequently misused or even wasted at the hospital, an example of which is autoclave tape (an object used in sterilisation procedures to indicate that the sterilizer has reached an appropriate temperature). At the Infirmary, however, it was sometimes used as an adhesive to secure wrapping and packages. 559 To advise on matters affecting nurses (such as their wastage of non-disposable equipment in the wards through over-ordering), the Deputy Lady Superintendent was co-opted as a member of the Committee. 556 Another group active within the hospital during this period was its Hospital Infection Committee (HIC). Although its focus was on infection as its name suggests, much of its work was bound up with issues of economy.

As disposables increased in popularity, both committees became increasingly concerned with their price and efficacy. The HIC viewed disposables as invaluable in reducing infection. Thus, their continued use was essential. The same stance was taken on sterile pack dressings, the group stating that the hospital should accept inevitable price increases in this area. 561 Given that the use of disposables was set to continue, economising

555 LHB1/80/48, Minute of a meeting of the Medical Committee, dealing with Economy in Hospital Prescribing (1958).
556 Ibid, Letter from IW Hurst, Secretary and Treasurer of the RIE Board of Management to JA Myers, Chief Pharmacist (10 Feb 1959); LHB2/3/2.
558 LHB2/11/2, Economy in Prescribing Committee meeting minutes (1 June 1967); (7 Dec 1967); 20 March 1968); (18 June 1968); (30 Oct 1968); (13 March 1969).
559 Ibid (20 March 1968).
560 Ibid (1 June 1967).
became a matter of obtaining goods from comparatively cheap sources. For example, the Prescribing Committee enquired into the efficacy of disposables processed by a Danish firm which were significantly cheaper than those produced by other firms.\textsuperscript{562} It was soon recognized that disposables helped, rather than hindered, the bid to effect economy in other areas, namely drugs; disposables reduced infection rates which, in turn, decreased spending on other anti-infection products such as antibiotics. They were also said to provide an improved service to the patient, demonstrated by the associated reduction in the average length of patients’ stay which, during 1956-70, decreased from 14.3 to 11 days.\textsuperscript{563}

Whilst the HIC also implemented various cost-saving measures, it did so cautiously and bore in mind the need to maintain high standards of care. For example, it oversaw a trial of new disposable gloves, judged not only in light of their costs but also their efficacy.\textsuperscript{564} Despite the favourable results obtained, these gloves were introduced only to be replaced soon after by a newer type of glove, produced by Ethicon, believed to be even cheaper and still more effective.\textsuperscript{565} The Committee also restricted the use of the ‘Intracath’ (a disposable catheter). Although its cost was the main issue surrounding its use, the Intracath was believed to be no more effective than any other type of catheter in controlling infection. This justified the restrictions imposed upon its use.\textsuperscript{566} Meanwhile, the Chief Pharmacist compiled a report on disinfectants which was considered under three main headings: cost, efficacy, and disadvantages.\textsuperscript{567} Evidently, the right balance was needed between implementing economy on one hand and maintaining high standards on the other.

Savings were made by standardizing practice and countering the problems stemming from the ‘unnecessary duplication of disposables’.\textsuperscript{568} For example, the Prescribing Committee narrowed the range of gloves in use and endorsed particular types for particular purposes. It implemented a common policy of using 30 millilitre disposable syringes when taking blood specimens instead of more costly 50 millilitre syringes.\textsuperscript{569} A particularly notable development came in the mid-1960s with the new ‘Edinburgh Pre-Set Tray System’: a system for providing standardized, pre-sterilized trays containing all surgical goods required for a given procedure. This system forged much-needed consensus amongst clinicians regarding the types of equipment that should be used in theatre.\textsuperscript{570} In the wards, however, representatives from commercial firms continued to undermine attempts at standardization by pushing new products – not just new drugs but also new disposables, particularly disposable syringes. Thus, a code of practice was introduced in the late 1960s ensuring that firms obtained permission from the Chief Pharmacist before visiting. Oral evidence suggests that this system resulted in less frequent visits with the knock-on effect of cutting down on wasteful expenditure.\textsuperscript{571}

This paper attributes the soaring levels of surgical expenditure between 1948 and 1970 to the dissemination of new, costly anti-infection technologies such as antibiotics, disposable goods and pre-sterilized dressings packs. There are little, if any, grounds to argue that the drive to foster economy in surgery had any detrimental impact on standards of care. Blume (1992) writes that access to the latest technologies is viewed as an important indicator of quality of care.\textsuperscript{572} When new anti-infection technologies were introduced in Edinburgh, cost

\textsuperscript{562} LHB2/11/2 (1 June 1967).
\textsuperscript{563} LHB1/80/61 (18 June 1962); LHB2/3/1, Annual Report (1958); LHB2/3/13.
\textsuperscript{564} LHB2/11/2 (20 June 1960);
\textsuperscript{565} Ibid (15 March 1963).
\textsuperscript{566} Ibid (15 Jan 1962).
\textsuperscript{567} Ibid (14 June 1965).
\textsuperscript{568} LHB2/11/2 (13 March 1969).
\textsuperscript{569} Ibid (18 June 1968); (30 Oct 1968).
\textsuperscript{570} Interview with Philip Roger Myerscough; JH Bowie et al., ‘Hospital sterile supplies: Edinburgh pre-set tray system’, British Medical Journal 2:5368 (1963), pp. 1322-1327.
\textsuperscript{571} LHB2/11/2 (20 March 1968); Interview with Philip Roger Myerscough.
\textsuperscript{572} SS Blume, Insight and Industry: On the Dynamics of Technological Change in Medicine (MIT Press:
considerations were typically coupled with concerns surrounding efficacy to ensure that savings were made without compromising on standards of care or denying access to new technologies. When considering the reduced length of stay (another indicator of quality) during this period, there are grounds for arguing that, if anything, standards improved. Blume also maintains that high technology medicine comes at a price.\textsuperscript{573}Whilst this may be true, the historical evidence shows that the relationship between the cost of care and the quality of care need not be understood in linear terms.

\textsuperscript{573}Ibid, p. 6.
What we count counts: The impact of attitude shifts in economic measurement during the 1930s

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1. Introduction
Alongside the 1941 War Budget the British government published a White Paper with, for the first time, official estimates of National Income and Expenditure linking the finances of the state to the performance of the wartime economy. The literature broadly suggests two narratives explaining this innovation. The first emphasizes the role of Richard Stone and the Central Statistical Office often highlighting the innovative use of double entry book keeping with macroeconomic identities (Deaton, 2008; Pesaran and Harcourt, 2000; Stone, 1984). This narrative often notes that Keynes – through How to Pay for the War – created the state’s demand for statistical measurement.

The second narrative examines Stone’s predecessors, several placing an emphasis on the work of Colin Clark (Arndt, 1988; Maddison, 2003). The main difference turns not on whether Clark’s early work (which with hindsight is less complete than Stone’s) should receive credit but the degree to which he should receive credit.

Such narratives give insufficient accreditation to the intellectual climate in which these thinkers emerged. Importantly, they understate the role of Keynes in the taxonomy of social accounting in the 1930s and the 1940s. This paper adopts a similar position to Tily (2009), however, it strengthens his position by drawing upon archival material in addition to published material. Moreover this paper strongly emphasizes the development of economic measurement as an accumulative intellectual project drawing on environmental factors from the 1930s. Doing so helps us better understand the role of economic measurement within the state (wartime) budgetary process.

2. Contextualizing the interwar innovations in social accounting
Studenski (1958) notes that the interwar years were a period of ‘extraordinary flourishing’ in national income measurement. In Great Britain, researchers such as Bowley, Stamp and Flux were working to produce estimates but were largely working as individuals attempting to draw together the few disparate information sources which existed at the time (Tily, 2009). This period saw the formation of novel research approaches internationally particularly in Oslo (Aukrust, 1994), Germany (Tooze, 2001) and America (Ruggles and Ruggles, 1970) during the 1920s-30s. For so many researchers spread so widely to each devote research time to this area indicates the effect of common causal factors. It is therefore important to consider the wider intellectual environment in which they emerged.

3. Intellectual environmental factors
The most pertinent factors incentivizing the 1930s innovations in economic measurement for this discussion are: the international dispersal of measurement ideas, innovations in welfare economics, the emergence of the ‘nation’ and the emergence of the ‘macro’.

Having highlighted the phenomenon of the international emergence of social accounting it is important to note the scant evidence that this functioned as an international community of collective research. Language barriers often prevented the transmission of ideas meaning that innovations such as Ragnar Frisch’s Econocirc model didn’t enter the Anglo-

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574 See Studenski (1958) for details of researchers in countries worldwide during this time period.
Saxon literature. Prominent researchers such as Clark575 (Clark, 1940, 1937, 1932) make few references to input from international colleagues.

Instead there appears to have been a network of key players who drew inspiration from abroad and applied the empiricist drive to their own work. Tooze (2001) documents that business cycle research in America inspired Wagemann (the head of Germany’s Institute for Business Cycle Research) to innovate their own measurement. At the end of the Treatise on Money (1930) Keynes calls for increased quantitative knowledge of economic transactions and celebrates work in America (at the NBER, the Federal Reserve and Harvard research institutes) by proficient compilers of statistics fighting to remove impressionism (Keynes, 2012a, pp. 365-6). Yet the awareness of a limited supply of data arising from cross fertilization of ideas cannot be used as an argument to fully explain the demand side – why researchers wanted national measures in the first place.

In the intellectual sphere the work of Pigou (1929) stressed income as variable as it could be used to understand welfare. In Clark’s later work (Clark, 1940, pp. 18-23; 1937, pp. 1-4) considerable homage is paid to Pigou and the notion that through understanding changes in national income we better understand changes in welfare. In the General Theory Keynes notes that the direction of Pigou’s net national dividend taxonomy is ‘the right and appropriate concept for economic analysis’ (Keynes, 2012b, p. 39). Though Keynes goes on to argue that it is an impossible concept to apply to the real world the impact of developments in the economic theory sphere upon the sphere of measurement concepts is apparent. This is not the only factor however and is furthermore missing from Clark’s (1932) earlier work The National Income.

Increased economic knowledge is however reliant upon effective data sources. As Clark (1932) highlights at the time of writing the compilation of national level data was frustrated by a lack of centralization and coordination of data collection. ‘the task is not made easier by allowing five spate government departments – the Board of Trade, the Census Office, the Ministry of Labour, the Inland Revenue, and the Home Office – each to compile and put into use their own classification throughout the country’(Clark, 1932, p. vii). As Middleton (1998, pp. 119-120) notes there was ‘little systematic data collection and no expectation that decision-making should routinely proceed on the basis of data analysis’.

What was required for the institutional demand for national level statistics was the emergence of the nation as a unit in the economic sphere. As Strange (1996, p.32) notes, interwar reflections on the conduct and emergence of World War I led to the emergence of international relations as an academic study – by its nature it had a statist, not an individualist focus. Similarly, in the economic sphere, analysis at a supra individual level emerged placing the locus of enquiry at the level of the community not the individual. This is evident in a joint letter by Keynes, Pigou, Layton, Salter, Stamp, and Macgregor to the Times on 17 October 1932 calling for consumption by the individual to be reduced in order to aid the nation (Keynes, 2012c, p. 138).576 Early arguments on the non-primacy of the individual can also be seen in Keynes’s The End of Laissez Faire (1926); there can be ‘possible improvements in the technique of modern capitalism by the agency of collective action’ (Keynes, 2012d, pp. 287, 292).

Having conceptualized a national economic unit, it then requires measurement to understand its behaviour. Ultimately, this thinking came to a climax with the General Theory in 1936 which outlined a vision of a dynamic and interdependent macro-economy in a setting of uncertainty.

575 Colin Clark was a major innovator in national income measurement and is noted by Tily (2009) to have produced one of the earliest estimates of the fundamental equations in Keynes’s Treatise on Money. This and other innovations led to Keynes calling him ‘a bit of a genius’ (Arndt, 1988).

576 Similar arguments treating individuals and government as separate but connected units in an interconnected economic entity can also be seen in Keynes’s Redbrook 1934 article Can America Spend Its way into Recovery? (Keynes, 2012c, p. 337).
4. Institutionalization during wartime

In recent scholarship such as Tily (2009) the role of Keynes has been accentuated in the development and institutionalization of national income accounting. Further evidence can be raised to support this position when considering the contributions to the conceptualization of income measurement. We should therefore consider Keynes not only as a responsive player to the factors outlined above but also changing the intellectual landscape of national income measurement.

The early estimates prepared by Clark were partially incomplete as there were extensive issues with the taxonomy he used. This comes through strongly in the correspondence with Erwin Rothbarth and Nicholas Kaldor preceding Keynes’s ‘The concept of national income: a supplementary note’ which featured in How to Pay for the War (1940). In it Keynes critiques Clark for the treatment of taxation in gross national output and his estimation approach for consumption (Keynes, 2012e, pp. 66-73). Keynes also illustrates that Clark’s definitions for gross national output and gross national income were inappropriate for observing the economic conditions of a wartime economy.

Before the publication of this Keynes had extensive debates with Kaldor with regard to the unit of measurement for the economy. Kaldor highlights that the limit to the Clark gross approach is that it was premised on trade cycle point of view in contrast to Keynes’s preferred national output. Kaldor proposed three versions of National Income:

1. **Taxable Income**, drawn up on the principles which you suggest. This is relevant from the point of view of ‘taxable capacity’.
2. **National Output**, including indirect taxation and depreciation (Clark’s figures). This is relevant as a measure of current economic activity and of cyclical changes in activity (its usefulness is much greater of course in peace-time than in war-time). (a variant of this is **Net National Output**, incl. indirect taxes but excluding depreciation. This is relevant for showing the changes in the community’s real income over time).
3. **National Output from the Point of View of War Potential**, which in my view should be estimated as follows:-

   National Output as above
   **Minus** that part of the depreciation which is not available (the magnitude of this item depends on one’s estimate of the length of the war: it is conservative, I think, to make it two-thirds)
   **Plus** that part, if any, of stocks which can be safely depleted (its annual magnitude again depends on the estimated length of the War).**Minus** indirect taxation
   **Minus** Monopoly earnings
   **Minus** the rents of specific factors. (Of these last two items it is difficult to make a precise estimate, but a rough calculation could certainly be made’). (Kaldor 1940, Keynes Archive)

   Keynes maintained that that Gross Income as per the General Theory remained the main measure of effective demand (Keynes 1940, Keynes Archive). This helps to illustrate the role of the Keynesian framework in the development of National Income taxonomy. But it also reveals a missed facet of the narrative by Tily and other scholars. Through such correspondence Keynes himself developed a rigorous and detailed understanding of taxonomy. This proved to be essential in the early stages of the development of the White Paper.

   The framework provided by Keynes in How to Pay for the War (1940) gathered support for the government to start to link its finances to the wider economy (Harrod, 1951; Pesaran and Harcourt, 2000; Stone, 1984). This fell at a time that the government was seeking
to expand its use of economists within the war effort and saw Stone enter government. Keynes’s lobbying of senior civil servants led to the Chancellor being encouraged to adopt national income linked estimates and to publish a White Paper alongside the budget (Harrod, 1951). High volumes of correspondence in the archives illustrate Keynes’s active interest and influence upon the first White Paper.577

Given Stone’s instrumental role in the development of the accounts it is also important to highlight his close working relationship Keynes. Not only was Stone made Keynes’s personal assistant in the Treasury after the 1941 budget (in addition to his role in the Central Statistical Office) but as (Harrod, 1951, p. 503) notes ‘Three or four times each week Mr. Stone visited Keynes, who took meticulous interest in every detail’. This is suggestive of a strong level of influence by Keynes upon Stone’s thinking.578

Having proven the relevance of effective data measurement, processing and analysis within the wartime economy it was natural to want to replicate aspects in peacetime. Towards the end of the war, as early as May 1942, Keynes in consultation with Stone, was circulating memos at the Treasury considering the postwar situation based upon national income analysis (Keynes, 2012f, pp. 280-98). It is therefore apparent that both thinkers wanted the development of this approach for budgeting. This can be strongly seen in Stone (1946) in which he argues in *The Times* for a scientific approach to budgets linked to the estimates of the future performance of the wider economy.

5. Conclusions

This paper has shown that factors which impacted social accounting measurement in the 1930s helped to drive methodological innovation in the 1940s. Arising from research into allocation concerns in the business cycle, the conceptual tools and importantly the people were developed that helped to facilitate the institutionalization and development of information for the wartime budget.

An underrepresented factor – Keynes as an economic empiricist engaging in the 1930s measurement debates – helps to explain how fringe research into abstract economic terms became incorporated into the heart of the national budgeting process. It is this transformation to a data driven fiscal regime that had wide remarkable implications for both wartime and peacetime Britain however non-remarkable it may have seemed at the time.

**Bibliography**

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577 It should be stressed that this is not only in relation to the drafting of the text, or the calculations for aspects of the finance, there are also sections of correspondence which detail Keynes’s opinions on definitional terms and measurements.

578 Cross referencing the war finance section of the Stone archives; the volume and depth of material illustrating Keynes’s thinking in there further supports the hypothesis that Keynes was a major part of the development of measures running up to the 1941 budget.

**Archives**
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Stone Archive, Kings College Archive Centre, JRNS/3/3/2, ‘Correspondence between the Central Statistical Office of Offices of the War Cabinet and JRNS’.
The fiscal revolution in America: a reinterpretation

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On 4 February 1936, as the economy of the United States went into its seventh consecutive year of depression, *The General Theory of Employment Interest and Money* was published in that country. Written by the British economist John Maynard Keynes, *The General Theory* cogently argued that policymakers needed to adopt a completely new approach to end the depression. Keynes was considered a leading authority on economic theory and policy, but the arguments that his new book advanced were coolly received by his U.S. peers, most of whom saw nothing wrong with the classical economics that Keynes so vigorously challenged. Over the next twenty-five years, however, Keynes’s ideas eventually gained credence, so much so that, in the early 1960s, they were implemented to an extent unimaginable during the depression, bringing what the conservative economist Herbert Stein described in 1969 as ‘the fiscal revolution in America’ to its peak.579

The aim of this paper is to outline how that revolution was developed and consolidated from the late 1940s to the early 1960s, a crucial period in the rise of U.S. Keynesianism. In doing so, it will challenge the argument, first made by Stein and later developed by the historian Robert Collins, that the postwar fiscal revolution was shaped and defined mostly by conservatives, particularly those in the business community.580 Instead, this paper will argue that liberal economists played a critical but underappreciated role in fashioning the postwar ascendancy of American Keynesianism, so much so that the particular brand of that doctrine that was implemented in the early 1960s owed much to their efforts and was significantly different to the one championed by conservatives.

To put the postwar stage of the fiscal revolution into historical perspective, it is first necessary to briefly define what Keynesianism was and describe how it evolved in the United States up to the end of the Second World War. In *The General Theory*, Keynes challenged the classical economics idea that the economy was a self-correcting mechanism that, in the event of a downturn, was capable of returning itself to full employment. Instead, he argued that the government needed to intervene to facilitate recovery, and in doing so he attributed the onset of the depression to a deficiency in overall demand. To reflate the economy, therefore, Keynes argued that it was necessary to stimulate mass purchasing power and consumption, and to do so he called for deliberate deficit spending on relief, public works and credit, as this would quickly put money in peoples’ pockets.581

As Stein asserted in his 1969 study, these ideas were nothing short of revolutionary in 1930s America. Right up until the publication of *The General Theory* most economists, policymakers and businessmen believed that the government should aim to balance its budget rather than engage in deliberate deficit spending. One individual who strongly believed this was the president of the United States, Franklin Delano Roosevelt, who mostly strove to keep federal finances out of the red during the depression. And though he did decide to deliberately run deficits for Fiscal Years (FYs) 1939/40, FDR was still not fully sold on the merits of Keynesian theory so those deficits were ultimately too small to significantly boost recovery.

What legitimized Keynesianism was not Roosevelt’s half-hearted embrace of the doctrine in the late 1930s but the impact of the Second World War in the early 1940s. Between FYs 1941/46 the deficit rose substantially, from 3.1 per cent of GDP to 21 per cent of GDP. This underwrote a huge expansion of the American economy that ultimately proved

Keynes right, so much so that even Roosevelt, by the end of the war, was arguably sold on the merits of Keynesian economics.

His conversion was also attributable to the efforts of Alvin Hansen, the foremost promoter of Keynesian ideas during the Second World War. Instead of advocating deficit spending purely to moderate the business cycle, however, Hansen feared the onset of a large-scale postwar slump, for it was his belief that the economy had grown mature and stagnant by the end of the 1930s.\textsuperscript{582} Accordingly, Hansen argued for permanent deficit spending to ensure postwar full employment, arguing that this should take the form of increased outlays on healthcare, education, housing, the environment and urban renewal.\textsuperscript{583} Later described by Margaret Weir and Theda Skocpol as ‘social Keynesianism’, Hansen’s manifestation of Keynesian ideas was moved onto the policy agenda at Roosevelt’s behest by Senator James E. Murray of Montana, who in early 1945 proposed a measure, known as the Employment Act, to ensure postwar full employment through permanent deficit spending.

No sooner did this occur, however, than there came scathing criticism from the right, whose power had undergone a revival during the war. Indeed, so much was the influence of business organizations such as the National Association of Manufacturers (NAM) and the Chamber of Commerce of the United States, that the proposals advanced by Murray were significantly watered down, to the extent that, once enacted in early 1946, the Employment Act provided a very vague commitment on behalf of the federal government to ensure ‘maximum’ instead of ‘full’ employment. This signified the eclipse of social Keynesianism, which was replaced in peacetime by a less activist iteration of Keynes’s ideas, one that was later described by Robert Lekachman as ‘commercial Keynesianism’. According to Collins and Stein, this new manifestation completely defined postwar economic policy right through to the early 1960s.

Central to the development of commercial Keynesianism were the efforts of the Committee for Economic Development, a progressive business organization founded in the early 1940s. Like the Chamber and the NAM, the CED did not buy the ‘Keynes-Hansen’ school’s argument that the economy would experience a postwar depression, and the fact that consumers rushed to the markets at the end of the war ultimately vindicated this assessment. Concerned, though, that a later return to the mass unemployment of the 1930s would spell disaster, the CED believed that the government should guarantee a stable postwar economic system, so it endorsed the use of limited Keynesian measures.

Consequently, in 1947 the CED developed the ‘stabilizing budget policy’, the underlining feature of commercial Keynesianism. In contrast to permanent deficit spending, the stabilizing budget policy sought to use fiscal policy to moderate the fluctuations of the business cycle, purely for the purpose of maintaining economic stability. For the CED, this entailed relying upon the automatic stabilizers built into the taxation system rather than upon discretionary measures. Automatic stabilizers were the automatic decline in tax receipts and increased outlays on unemployment insurance that naturally accompany a recession due to the fall in the national income. Accordingly, the CED argued that tax rates should be set to automatically yield an expansionary deficit during a recession, followed by a moderate surplus to keep inflation at bay and pay off debt when the economy recovered, with the ultimate goal of balancing the budget over the course of the business cycle.

Importantly, though the stabilizing budget policy’s guiding principle was automaticity, the CED did approve the use of discretionary policies (such as tax cuts, increased expenditures, and lower interest rates) during serious downturns, but it argued in favour of using the monetary, not fiscal, side of the coin and only sanctioned discretionary fiscal activism as a last resort. Though it was essentially conservative in its interpretation of Keynesianism, certain liberals were nevertheless pleased with the CED’s concept, for


automatic stabilizers would be used to safeguard the economy from large-scale unemployment. Accordingly, a broad consensus crystallized around the use of the stabilizing budget policy to manage the postwar economy, to such an extent that Presidents Harry Truman (1945-53) and Dwight Eisenhower (1953-61) followed its guidelines throughout both their presidencies.584

According to both Collins and Stein, the stabilizing budget policy was also adhered to by President John F. Kennedy (1961-63), thanks mostly to the efforts of the CED.585 After taking office at a time when the economy was suffering from a mild recession that was superimposed upon five years of chronic slack, Kennedy initially shunned the recommendations of his liberal economic advisers to rectify these problems through an aggressive fiscal policy. Instead, he strove to balance the budget throughout the first eighteen months of his presidency, but as the economy showed signs of heading toward another recession in the middle of 1962 Kennedy entertained the possibility of running a deficit to prevent this. And, according to both Collins and Stein, his decision to eventually do so was attributable to the CED. That organization had modified the stabilizing budget policy in the early 1960s to permit the kind of stimulus advocated by Kennedy’s advisers, though it still argued that its ultimate goal was stabilization rather than all-out growth. In fact, it was only when the CED, according to Collins, ‘signalled’ to Kennedy in December 1962 that a $12 billion tax cut was necessary and acceptable that the president promoted such a measure the following year. When eventually enacted in 1964, the economy grew substantially: economic expansion exceeded 6 per cent in 1965 and the deficit declined in GDP terms thanks to the higher revenues generated by these favourable conditions. According to Collins and Stein, therefore, the consolidation of the Keynesian revolution was mostly attributable to the efforts of the business community.

What this interpretation seriously underappreciates, however, is the important contribution made by liberal economists to Keynesianism’s postwar rise and ascendancy. Though the brand of that doctrine that was promoted by Truman and Eisenhower reflected the tamed version formulated by progressive elements of the business community, a far more expansionist iteration of Keynes’s ideas was simultaneously gaining credence in liberal circles. Its proponents argued that the Employment Act, though watered down, still offered considerable scope for bold and expansive policies. Rather than focusing merely upon achieving economic stability, as the CED wanted, they expounded a far more growth-orientated vision for postwar economic policy, to the extent that, in the late 1950s, they successfully redefined the consensus that was reached a decade earlier, before then pressing their ideas upon Kennedy.

Central to the formulation of this growth-orientated Keynesianism were the efforts of Leon Keyserling, who helped write the original version of the Employment Act. A former aide to the Democratic Senator Robert Wagner, it was Keyserling’s belief that the American economy had a virtually unlimited capacity to grow, as was evidenced by its enormous wartime expansion. As a result, he argued that the government should seek not simply to expand the economy to attain full employment – as social Keynesians argued – but aim to also foster the long-term growth of economic potential.

To facilitate this, Keyserling called for the establishment of an expert committee that would set postwar production and consumption goals to achieve full employment. The president, through expansionary fiscal and monetary policies, should seek to attain those goals, which the committee would redefine when the economy reached full capacity. Later referred to by Keyserling as the ‘National Prosperity Budget’, this concept would ensure that deficits would be continuously used to maintain high levels of consumption and production.

This, in turn, would create an ever-expanding economy, the fruits of which would be shared by all.586

In policy terms, Keyserling’s ideas failed to gain credence during the Truman and Eisenhower years, but they did help to lay the groundwork for liberal economists to break with commercial Keynesianism during Eisenhower’s second term. Dismayed with what they regarded as that president’s obsessive reliance upon the stabilizing budget policy, these economists argued that discretionary policies should take precedence over automaticity. For the University of Minnesota economist Walter Heller, soon to be appointed by Kennedy as chairman of his Council of Economic Advisers, the key problem with the stabilizing budget policy was that it provided ‘a relatively weak guarantee of full employment’.587 This was because automatic stabilizers, though useful against a recession, nevertheless restrained the economy in the upstage of the business cycle. Indeed Heller pointed out that as the economy entered that phase the automatic stabilizers sucked too much purchasing power from it, to such an extent that the budget was brought into balance way before the attainment of full employment.588 This was the chief cause of the sluggish, 2.5 per cent annual growth rate that plagued the United States in the late 1950s, and to offset it Heller and other liberals argued that discretionary fiscal activism was required.

Whilst Heller favoured the use of a tax cut to revitalize the economy, however, Keyserling preferred to increase spending.589 Moreover, the Yale economist James Tobin and the MIT professor Paul Samuelson both argued that a more expansive monetary policy would provide the better growth-maximizing stimulus.590 Still, all wanted to break with the consensus reached a decade earlier, for their prescriptions entailed making greater use of discretionary measures to significantly expand output. Indeed, Heller attempted to sell the 1964 tax cut to Kennedy in this exact way. On 17 March 1961, for example, the CEA chairman told the president: ‘To illustrate what an aggressive fiscal policy can accomplish, suppose we were to increase government expenditures [by $3 billion] and temporarily cut taxes [by $7 billion] to produce a $10 billion deficit in fiscal 1962. The production gap will be nearly $20 billion smaller by the end of the year’.591

Throughout the first two years of Kennedy’s presidency, Heller sent the president nearly 300 memorandums, many of which advanced this argument. In them, the CEA chairman pointed out how European economies were attaining high growth rates by deliberately running deficits, whilst he also argued that automaticity exerted too much of a restrictive impact upon the economy. Underappreciated in the existing literature, therefore, is how Heller’s patient tuition helped Kennedy realize that he needed to promote the 1964 tax cut. Moreover, though the president certainly listened to the business community, the way he went on to justify the tax cut reflected the growth-orientated Keynesianism espoused by Heller, for he recognized the need to significantly expand the economy in order to obtain the revenues necessary to fund his ambitious liberal agenda.

As this paper has argued, this is something that Stein’s and Collins’s interpretations of the fiscal revolution significantly overlook. In fact, speaking of Stein’s 1969 study after it was

published, Heller himself made this exact critique: ‘Herbert Stein … [attributes] less of a policy revolution in the 1960s than actually is the case … not only [was] the kind of approach that was at long last adopted by presidents [different] … the language of the 1962 and subsequent presidential economic messages … finds no parallel in [earlier policy]’.  \(^{592}\)

In future assessments of the fiscal revolution, then, historians would do well to emphasize the contribution of liberals, more so than conservatives, to Keynesianism’s postwar rise and ascendance.

Socialist growth revisited: Insights from Yugoslavia

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1. Introduction
Economists and historians alike have long sought to understand why some countries are rich while others are poor. The comparative economic development in Europe during the postwar period, under two radically different political and economic regimes, has attracted a great deal of public interest. The inability of eastern European countries to converge towards income levels of their market-oriented neighbours has been attributed to the embedded inefficiencies of centrally planned economies. The academic debate has centred on measuring the relative contributions of total factor productivity (TFP) and factor inputs to economic growth. Broadly speaking, one strand of literature argues that labour constraints were a major source of comparative socialist failure (Weitzman, 1970; Sapir, 1980; Easterly and Fischer, 1995; among others), while another strand of literature argues that sluggish TFP growth was a major source of comparative socialist failure (Kontorovich, 1986; Bergson, 1983; Allen, 2002; Broadberry and Klein, 2011).

Through the use of a country case-study – Yugoslavia (for key macroeconomic indicators within a contextual perspective see figure 1) – new data, and a dynamic general equilibrium growth model, I find that during the ‘Golden Age’ of economic performance, TFP of Yugoslavia increased in relative importance with the passage of time, which was caused by the accelerated process of structural modernization, and possibly by efficiency gains stemming from gradual integration of Yugoslavia into the global economy. Furthermore, TFP did not drive the deterioration of economic performance during the 1980s. Thus, TFP was not the most quantitatively significant cause of Yugoslav failure.

The analysis instead finds that labour frictions (incentive or ability of individuals to provide labour) were a major constraint on socialist growth. Intensifying labour frictions were the most important driver of the deterioration of the economic performance of Yugoslavia. In turn, the intensification of labour frictions was driven by the greater devolution of economic power to labour-managed firms, brought about by 1965 socio-economic reforms, which hindered the ability of Yugoslavs to provide labour.

2. Methodology
Business cycle accounting (BCA) methodology, developed by Chari et al. (2007), is based on a standard Ramsay-Cass-Koopmans growth model, but including ‘wedges’ that measure deviations from the first order conditions of households and firms. Thus, BCA identifies the evolution of incentives (wedges) that firms and households face. The four wedges used in this paper are the channels through which policies affect growth. Taken together, the wedges drive economic growth, and match the data. The major advantage of the model is its capacity to account for the dramatic fluctuations of Yugoslav macroeconomic variables within a unified framework.

Given a utility function with log consumption and log utility as in Cole and Ohanian (2002), and a production function as in Hall and Jones (1999), the wedges of the model are specified as follows:
Notes: Capita denotes working age person, while labour is defined as total hours worked. Hours worked per capita are total hours worked divided by the working age population. 1952 is chosen as the initial year due to data availability.

Labour Wedge: $MRS_{ct} = MPL_{ct}$ \hspace{1cm} [1]

Capital Wedge: $IMRS = R$ \hspace{1cm} [2]

Efficiency Wedge (TFP): $\frac{Output}{Input}$ \hspace{1cm} [3]

Income Wedge: $\frac{Consumption}{Investments}$ \hspace{1cm} [4]

In a prototype neoclassical model, the marginal rate of substitution between consumption and leisure ($MRS_{ct}$) would be equal to the marginal product of labour ($MPL_{ct}$). Actual economies are characterized by a discrepancy between $MRS_{ct}$ and $MPL_{ct}$ as in equation 1, which is due to the labour wedge. The labour wedge is related to the structure of incentives that determine the supply of labour. An improvement in the labour wedge can be interpreted as rising return on labour that stimulates the provision of labour. The labour wedge is often taken to be synonymous with the distortive effects caused by labour taxation. As such, a deteriorating labour wedge can be interpreted as a distortion arising due to increased taxation of labour supply – e.g. due to increased income taxation.

In a prototype neoclassical model, the intertemporal marginal rate of substitution ($IMRS$) would be equal to the real interest rate ($R$). Actual economies are characterized by a discrepancy between $IMRS$ and $R$ as in equation 2, which is due to the capital wedge. The capital wedge is related to incentives that determine savings and investments. An improvement in the capital wedge can be interpreted as an increasing return on capital that stimulates savings and investments. Analogous to the labour wedge, a capital wedge is often taken to be synonymous with the distortive effects caused by taxation of capital. Consequently, a deteriorating capital wedge can be interpreted as a distortion arising due to increased taxation of capital – e.g. reduction of tax allowances for investments. The income wedge in equation 3 embodies aggregate demand shocks stemming from government expenditure and net foreign demand for domestically produced goods and services. Finally,
the efficiency wedge in equation 4, or simply TFP, measures the efficiency with which inputs are transformed into output.

3. Data

The data this paper relies on are derived from both official and alternative sources, with the aim of maximizing the quality of data. Briefly, output series are taken from Alton (1970) and Alton et al. (1992), who provide the most reliable output series for socialist European countries. The remaining data series are derived, and amended where deemed necessary, from the national accounts of Yugoslavia, as well as population censuses. The working version of this paper provides details regarding the constructed variables, as well as the explicit assumptions of the model, and a series of robustness checks concerning the same assumptions. In short, the results are not sensitive to the existence of subsistence consumption, choice of the discount factor, preferences towards leisure, and various other assumptions.

4. Results

Figure 2 plots the evolution of output per working age person determined by all the wedges except TFP (in figure 2 line named ‘without TFP’), in relation to the actual evolution of output per working age person. The gap between the two plotted lines is due to TFP, and the plotted figure gauges the relative significance of TFP in stimulating economic growth versus all the other wedges.

Figure 2 reveals that in the early stages of growth (approximately until the early 1960s), the combined capital, labour and income wedge are able to replicate most of economic growth, since the path of the actual output and the counterfactual output track each other closely. The gap between the two lines widens over time, meaning that TFP became more important in sustaining growth with the passage of time. Nevertheless, towards the end of the 1980s, TFP decreased, in conjunction with GDP.

Figure 2: The actual evolution of GDP per capita versus the counterfactual evolution of it (without TFP), 1952-89

Notes: The 1952 level of GDP per working age person is indexed to 100. If the two lines move in parallel, it means that the combined capital, labour and income wedges are responsible for most of economic growth.
In regards to the period before 1979, the literature provides a set of viable interpretations concerning the increase of TFP. Improvements in resource allocation, in the early stages of growth, might have been driven by reconstruction dynamics in the wake of destruction caused by World War II (Vonyó, 2008). Nevertheless, since reconstruction dynamics are arguably intrinsically time-limited, further explanations are required.

Yugoslavia was overwhelmingly agricultural in the aftermath of World War II, but it subsequently experienced rapid structural change. As such, reallocation of resources from low productivity agriculture to high productivity manufacturing and modern services certainly stimulated TFP. Table 1 demonstrates that the average ratio of non-agricultural to agricultural labour productivity, as well as the ratio of the non-agricultural to agricultural marginal product of human capital (MPH), decreased between 1953 and 1986, indicating strong efficiency gains.

Table 1: Relative productivity of non-agriculture and agriculture, Yugoslavia

<table>
<thead>
<tr>
<th></th>
<th>Ratio of non-agricultural to agricultural labour productivity</th>
<th>Ratio of non-agricultural to agricultural MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1953</td>
<td>4.37</td>
<td>1.96</td>
</tr>
<tr>
<td>1961</td>
<td>3.51</td>
<td>1.61</td>
</tr>
<tr>
<td>1971</td>
<td>3.07</td>
<td>1.45</td>
</tr>
<tr>
<td>1981</td>
<td>1.86</td>
<td>0.96</td>
</tr>
<tr>
<td>1986</td>
<td>1.64</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Can structural modernization explain the acceleration of TFP contribution to growth? Yes, to an extent, since the reduction of the sectoral productivity gap accelerated during the 1970s. Nevertheless, if I focus exclusively on the non-agricultural sector of the economy and exclude the effect of structural change by definition, I still find that TFP increased in importance with the passage of time. As such, further explanations underpinning the evolution of Yugoslav TFP are required.

Trade might, beyond boosting aggregate demand, indirectly impact output through TFP (Alcalá and Ciccone, 2004). The gradual integration of Yugoslavia into global markets, facilitated by its entry into the GATT in 1966, might have stimulated TFP through a more efficient allocation of resources, as long as the country specialized in the production of goods and services according to its comparative advantage. The development of tourism along the Adriatic coast is an illuminative example that Yugoslavia, to an extent, did specialize in the production of goods and services according to its comparative advantage.

Turning to the 1980s, the stagnation of TFP is related to a deep crisis that was instigated by the second oil shock in 1979. Recessions are typically characterized by decreased capacity utilization of both capital (table 2) and labour which, if not explicitly accounted for, are reflected in a decrease of TFP.

To gauge further the relative significance of wedges, figure 3 estimates the marginal contribution of each wedge to economic growth. It adds to the prototype model one at a time the capital wedge, TFP, the labour wedge, and the income wedge. The four wedges in tandem match the data (the line ‘actual’).

The model that includes just the capital wedge systematically underestimates economic growth since the late 1950s, but before generates a higher level of growth than implied by data. When TFP is added to the model containing the capital wedge, the path of simulated economic growth tracks the actual path closely. Thus, this model reconfirms that TFP became gradually more important in sustaining economic growth. When the labour wedge is added to the model containing the capital wedge and TFP, the simulated path of economic growth is close to the actual path until the 1970s, but at a somewhat lower level (the discrepancy is due to the remaining income wedge). Afterwards, the discrepancy between the
actual path of economic growth and the simulated path widens, implying that the labour wedge was a major constraint on economic growth that furthermore drove the slowdown of economic growth during the 1980s. The model demonstrates that 1965 was a turning point for the deterioration of the labour wedge since, when the labour wedge is added to the model containing the capital wedge and TFP, paths of economic growth simulated by these two models start diverging after this year, while before 1965 they are almost identical.

Table 2: Capacity utilization in Yugoslav manufacturing, official data, in per cent

<table>
<thead>
<tr>
<th>Year</th>
<th>Capacity Utilization</th>
</tr>
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<tbody>
<tr>
<td>1977</td>
<td>81</td>
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<tr>
<td>1978</td>
<td>81</td>
</tr>
<tr>
<td>1979</td>
<td>81</td>
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<td>1987</td>
<td>76</td>
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<td>1988</td>
<td>75</td>
</tr>
<tr>
<td>1989</td>
<td>75</td>
</tr>
</tbody>
</table>

Thus, if Yugoslavia was characterized by embedded inefficiencies that furthermore increased over time, these inefficiencies are reflected in the deterioration of the labour wedge. This means that the incentive or ability of households to supply labour deteriorated over time.

Figure 3: Simulations of GDP per working age person versus the actual GDP per working age person, 1952-89

Yugoslavia: GDP per working age person

<table>
<thead>
<tr>
<th>Year</th>
<th>Index, 1952=100, log scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952</td>
<td></td>
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<tr>
<td>1960</td>
<td></td>
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<tr>
<td>1970</td>
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<td>1980</td>
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<td>1989</td>
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</table>

- Capital wedge only
- TFP & capital wedge
- TFP, capital & labor wedges
- Actual
The sharp and steady deterioration of the labour wedge coincides perfectly with the socio-economic reforms of 1965, which provided almost complete autonomy to work councils within Yugoslav labour-managed firms to distribute their net income between wages and investments.

A large group of scholars have argued that labour-managed firms had the intrinsic incentive to maximize income per worker (Ward, 1958; Vanek, 1970; among others), which was reinforced by the 1965 economic reforms (Sapir, 1965). Figure 4 demonstrates that labour-managed firms had indeed succeeded in maximizing income per worker. Real hourly wages in terms of effective labour productivity dramatically increased in Yugoslavia starting with 1965. This implies that the governing objective of labour-managed firms raised the wage rate above its market clearing level, preventing households from satisfying their condition for the marginal rate of substitution between consumption and leisure, and hence caused the subsequent deterioration of the labour wedge.

**Figure 4: Hourly real wage rates divided by effective labour productivity**

Notes: Effective labour productivity means output divided by the hourly unit of labour that is augmented by technology. This ratio, for each country, is expressed relative to the same ratio of the initial available year. The working version of the paper chronicles the comparative dimension.

However, the evolution of real wages in Yugoslavia cannot explain the deterioration of the labour wedge during the 1980s, since real wages had dramatically declined starting from 1979. The governing objective of labour-managed firms was partially achieved through restriction of new labour entry into existing labour-managed firms since 1965 (figure 5), in order to increase the income share of the existing workers. Thus, even though real wages had collapsed during the 1980s, existing workers were able to capture a larger share of the total wage bill than would have been possible if entry of new labour into existing labour-managed firms was not restricted. This behaviour, in an acute form, resembles insider-outsider models of labour markets characterized by strong trade unions.
5. Conclusion

Beyond the very recent past, and beyond the Soviet Union, we know very little about the nature of economic performance of eastern European countries. This paper fills the knowledge void by analysing socialist Yugoslavia, through a diagnostic tool that identifies the mechanisms that drive economic growth. The analysis reveals that, during the ‘Golden Age’ of economic performance, TFP growth became more important over time in sustaining economic growth. Furthermore, TFP was not quantitatively the most important factor behind Yugoslavia’s poor economic performance during the 1980s. Instead, labour frictions were a major constraint on growth since the mid-1960s, and drove the deterioration of economic performance during the 1980s. Socialist growth was primarily handicapped by poor incentives to work, rather than by poor incentives to innovate or to adopt foreign technology.

References


Trade liberalization, crises, and historical links: A gravity analysis of Mexico’s historical trade flows, 1962-2011

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1. Introduction

The purpose of this paper is to study the long-term changes in Mexico’s exports by utilizing a panel gravity model with 21 countries from 1962 to 2011. The paper will pay particular attention to the EUTA (European Union Trade Agreement), NAFTA (North American Free Trade Agreement), and LAIA (Latin America Integrated Area), which have been signed over the last 30 years. For Mexico, this analysis will estimate exports for the country pairs. After building the model, the results show that Mexico’s trade patterns have changed dramatically over 50 years, with waning influence of NAFTA as competition from Asia began to decrease exports to NAFTA. The motivation for studying Mexico as an emerging market is due to their history of import substitution before liberalizing trade in the 1980s and then signing more trade agreements than any country. Furthermore, multiple events over their history have contributed to a change in their determinants of trade flows. Mexico provides a good case study on analysing the long-term effect of enacting multiple trade agreements and trade liberalization policies due to their economic history through their various economic crises. Mexico’s case is different due to the diverse trade agreements signed.

Some authors have tried to understand whether these trade agreements actually reinforce historical, cultural, political, and linguistic ties or are discriminatory trade policies by region, which could divert trade to the rest of the world. If these are reinforcing historical, cultural, political, and linguistic ties, then in the analysis we should see that an increase in trade between these countries is due to the above variables, such as sharing a language, colonized by the same power, ever colonized, and sharing a common religion. Mexico is a prime example of this discussion because it shares a language with Chile, Costa Rica and Spain, and shares the same religion as Brazil, Canada, the USA, and most of Europe. However, other Asian countries are in this analysis, which represent a higher distance than those countries near Mexico, and could thus reflect a diminishing effect of distance on trade.

2. Trade liberalization

Mexico enacted trade liberalization after decades of import substitution industrialization. The trade reforms were a product of the crippling 1981 debt crisis, whereby Mexico was forced to fully open their economy to receive needed loans from the international community. Before trade liberalization, tariffs were as high as 100 per cent and licences were required for importing any good. As well, foreigners were restricted to no more than 49 per cent ownership in Mexican enterprises. Mexico enacted trade liberalization over three steps, lasting 25 years. By 1994, these tariffs were cut substantially. The maximum tariff was cut to 20 per cent, import licences had been cut for 89 per cent of imports, and restrictions were lifted on most foreign investment. Import licences were required for 100 per cent of imports in 1983. This was cut to 65 per cent in 1984, 10 per cent by 1985, and 2 per cent in 1992. Import licences were still required for crude petroleum products, the automotive industry, and some agricultural commodities. The simple average tariff line went from 23.2 per cent in 1983 to 13.1 per cent in 1992 (Kehoe 1995).

In 1986 Mexico acceded to GATT, they adopted the Harmonised Commodity Description and Coding System in 1987, and in 1992 Mexico reformed agriculture. The composition of trade in the 1990s changed greatly. Petroleum became less important and trade with the United States grew from 56 per cent of Mexico’s trade in 1982 to 70 per cent in 1992. Maquiladoras, in-bond assembly factories originally established in 1965 by agreement
with the United States, expanded rapidly in part due to the reduction in foreign investment barriers. Most of the maquiladoras were built on the U.S.-Mexico border. The maquiladora programme paved the way for the North American Free Trade Agreement (NAFTA).

Chart (2.1): Mexico’s export destination (% of total exports), 2011

NAFTA was a culmination of over five years of negotiations, representing a trade agreement between Mexico, Canada, and the United States. Specifically, NAFTA was signed to ‘eliminate barriers to trade’ and facilitate freer trade for all the parties in the agreement (NAFTA 1994). The most important additions of NAFTA were to strengthen anti-dumping measures and increase FDI to industries in Mexico. NAFTA also eliminated import and export restrictions over 15 years and imposed export duty tax on foodstuffs, to protect domestic consumers. Sensitive products received longer phase-out schedules of 15 years, including sugar, corn, frozen concentrated orange juice, winter vegetables, and peanuts (Villarreal 2014). However, NAFTA also required partner countries to eliminate all non-tariff barriers to agricultural trade, replacing import licence requirements with tariff rate quotas and gradually phasing these out over the 15-year implementation period. NAFTA included provisions where a partner country could apply the tariff rate if imports of a product reached a ‘trigger’ level set out in the agreement (Villarreal 2014). Following NAFTA, a number of free trade agreements were signed. In 2001, Mexico signed a free trade agreement with the European Community (EUTA). The EUTA was initially signed with the EU-15 countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and United Kingdom).

3. Methodology

Historically, the gravity equation has been highly effective in describing trade flows in empirical studies. The Anderson and van Wincoop (2003) model is now one of the most well used gravity models in the literature. Goods are differentiated by place of origin where each country is specialized in the production of only one good and preferences are identical, homothetic, and approximated by a constant elasticity of substitution (CES) function. Countries are representative agents that export and import goods. In this model, Anderson and van Wincoop (2003) use multilateral resistance terms to further capture unobserved
heterogeneity and thus should be used to avoid a biased estimation of the model parameters. Anderson and van Wincoop (2003) noted that the methodology for these multilateral resistance terms can be difficult to estimate, and thus suggested using time-varying multilateral trade resistance terms in the form of source and destination effects. Baier and Bergstrand (2007) followed this methodology and extended the methodology to incorporate time varying fixed effects as well as country-pair fixed effects to obtain unbiased estimates and to capture the individual country heterogeneity that can change over time. Baier and Bergstrand (2007) found that conventional time-invariant fixed effects are insufficient to capture the unobservable factors of the gravity equation. The Anderson and van Wincoop (2003) model is the starting point for augmenting the gravity model for our estimation with the addition of the time-varying effects.

Given the introduction of the free trade agreements, trade unions, and integrated areas, it is important to analyse whether they impacted Mexico relative to the entire panel. The estimation will also include important cultural, geographic, and historical factors that increase the probability of a country trading, as detailed in the literature. Specifically, by including these factors, it is possible to analyse whether signing a regional agreement emphasises a cultural, historical, or geographic bias. Does NAFTA confirm a regional bias? If a cultural, historical, or geographic link cannot be formulated or no longer impacts trade, is it possible that a trade agreement will still impact trade? For the EUTA, would a negative coefficient for Mexico show that there is a regional bias between the EUTA members and a FTA is not going to decrease the overall bias involved?

\[
\ln X_{ij} = \alpha_0 + \alpha_t + \alpha_i + \alpha_j + \beta_1 \ln Y_i + \beta_2 \ln Y_j + \beta_3 N_i + \beta_4 N_j + \beta_5 \ln \text{DIST}_{ij} + \beta_6 \text{ADJ}_{ij} + \beta_7 \text{LANG}_{ij} + \beta_8 \text{REL}_{ij} + \beta_9 \text{STAB}_{ij} + \gamma_1 \text{NAFTA} + \gamma_2 \text{EUTA} + \gamma_3 \text{LAIA} + \mu_{ij}
\]  

[1]

In this equation, \(Y_i\) and \(Y_j\) proxy for the economy size of country \(i\) and country \(j\) and represent the consumption and demand level of a country. It is likely to have a positive relationship with trade flows. Population (\(N_i\) and \(N_j\)) of both countries are also utilized in this model, and sometimes are used instead of GDP. Another instance of this is to use GDP per capita instead of population and GDP. \(\text{DIST}_{ij}\) is measured as the great-circle distance in kilometres between the capital cities of country \(i\) and \(j\). \(\text{ADJ}_{ij}\) is a dummy variable, representing whether the countries share a national border and is of great interest in this analysis. \(\text{Language}\) is equal to one if both countries share a common national language and zero otherwise. \(\text{Religion}\) is defined similarly. These are to understand if sharing a language or religion actually impacts exports over a long period of time. Two other variables included in the analysis are \(\text{Colonist}\) and \(\text{Common Coloniser}\). These two variables are binary, representing whether they were both colonized and if they were colonized by the same colonizing power. For trade creation, \(\text{NAFTA}\), \(\text{EUTA}\), and \(\text{LAIA}\) are binary variables, representing if both countries are in the agreement.

Mexico was affected by multiple crises before and after trade liberalization. Therefore, this analysis studies the 1982-85 Mexican and Latin American debt crisis, 1994 Tequila Crisis, and the 2007-9 Global Recession. In the Tequila Crisis of 1994, Mexico experienced a currency crisis sparked by Mexico’s sudden devaluation of the peso against the U.S. dollar and political instability. The Mexican economy suffered a severe recession due to this crisis, and the peso declined in value, recovering by the end of 1995. GDP declined in 1995 by over 6.2 per cent. Therefore, this analysis is interested in the interaction with 1994 and 1995, especially on GDP. The effects of these crises were seen in the drop in growth throughout those years, as seen in chart 2 for Mexico. The estimated equations include the variables in equation [1] with the addition of each independent variable interacted with the important years. Therefore, GDP for country \(i\) will be interacted with each year. Considering one of the main motivations for liberalizing trade in the 1980s was to receive funding from the IMF, World Bank, and the United States to recover from their debt crisis, it is important to understand how these crises affected their exports.
4. Results

Table (4.1): Mexican exports, 1962-2011

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Country j’s GDP</td>
<td>1.045***</td>
<td>1.028***</td>
<td>0.972***</td>
<td>0.871***</td>
<td>0.845***</td>
</tr>
<tr>
<td></td>
<td>(0.0537)</td>
<td>(0.068)</td>
<td>(0.0613)</td>
<td>(0.075)</td>
<td></td>
</tr>
<tr>
<td>Country j’s Population</td>
<td>0.0781*</td>
<td>0.223***</td>
<td>0.0492</td>
<td>-0.082</td>
<td>0.0457</td>
</tr>
<tr>
<td></td>
<td>(0.0472)</td>
<td>(0.0774)</td>
<td>(0.0685)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico’s Population</td>
<td>3.846***</td>
<td></td>
<td>0.579***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.600)</td>
<td></td>
<td>(0.206)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico’s GDP</td>
<td>-0.171*</td>
<td>-1.567***</td>
<td>-0.514*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0910)</td>
<td>(0.345)</td>
<td>(0.277)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance</td>
<td>-1.339***</td>
<td>-1.589***</td>
<td>-1.744***</td>
<td>-0.279</td>
<td>-0.845***</td>
</tr>
<tr>
<td></td>
<td>(0.120)</td>
<td>(0.205)</td>
<td>(0.147)</td>
<td>(0.215)</td>
<td>(0.0802)</td>
</tr>
<tr>
<td>Common Coloniser</td>
<td>2.235***</td>
<td>2.650***</td>
<td>0.405</td>
<td>1.333***</td>
<td>1.466***</td>
</tr>
<tr>
<td></td>
<td>(0.197)</td>
<td>(0.316)</td>
<td>(0.37)</td>
<td>(0.203)</td>
<td>(0.182)</td>
</tr>
<tr>
<td>Colony</td>
<td>-0.899***</td>
<td>-1.765***</td>
<td>1.828***</td>
<td>0.537**</td>
<td>0.0957</td>
</tr>
<tr>
<td></td>
<td>(0.255)</td>
<td>(0.419)</td>
<td>(0.386)</td>
<td>(0.233)</td>
<td>(0.207)</td>
</tr>
<tr>
<td>Stability</td>
<td>-0.631</td>
<td>0.176</td>
<td>0.102</td>
<td>0.620***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.474)</td>
<td>(0.231)</td>
<td>(0.173)</td>
<td>(0.201)</td>
<td></td>
</tr>
<tr>
<td>Border</td>
<td>-0.675***</td>
<td>-1.085***</td>
<td>-0.929***</td>
<td>0.538**</td>
<td>-0.17</td>
</tr>
<tr>
<td></td>
<td>(0.201)</td>
<td>(0.408)</td>
<td>(0.326)</td>
<td>(0.227)</td>
<td>(0.171)</td>
</tr>
<tr>
<td>Religion</td>
<td>-0.612**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.261)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAFTA</td>
<td>1.560***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.312)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAIA</td>
<td>0.445</td>
<td>-0.45</td>
<td>0.193</td>
<td>0.745***</td>
<td>0.0703</td>
</tr>
<tr>
<td></td>
<td>(0.312)</td>
<td>(0.773)</td>
<td>(0.249)</td>
<td>(0.163)</td>
<td>(0.138)</td>
</tr>
<tr>
<td>BUTA</td>
<td>0.370</td>
<td>-0.669***</td>
<td>-0.687***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.298)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-64.02***</td>
<td>40.72***</td>
<td>11.04</td>
<td>0.0706</td>
<td>4.147***</td>
</tr>
<tr>
<td></td>
<td>(8.247)</td>
<td>(9.391)</td>
<td>(8.384)</td>
<td>(2.448)</td>
<td>(1.221)</td>
</tr>
<tr>
<td>Observations</td>
<td>958</td>
<td>197</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.842</td>
<td>0.847</td>
<td>0.825</td>
<td>0.882</td>
<td>0.886</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

These results are a very important addition to the literature. First, NAFTA is highly positive, but decreases in power in the 2000s. LAIA, positive only in the 1990s, is again insignificant in the 2000s. This confirms the results with regards to the cultural, political, and historical results for trade. Mexico’s exports with countries that share a language are high, but in the 1990s sharing a border was higher. Reflecting the increase in exports due to the signage of NAFTA. For the European Union Trade Agreement, as Mexico shares very few cultural links with Europe, other than being a former colony of Spain, the European Union Trade Agreement is negative for the years after signing the trade agreement. It is possible the EUTA has not seen an increase in any exports to Europe because it has not fully come into force yet. Since NAFTA has been signed for almost 20 years and LAIA for over 30 years, it is possible
to understand their long-term effects. For LAIA, there is an insignificant effect for exports. NAFTA, on the other hand, is highly positive for exports. Considering 81 per cent of Mexico’s exports go to NAFTA countries in 2011, this is not that surprising. What is surprising is the decreasingly waning power of NAFTA, as Mexico begins to export differently to other countries, such as Asian countries.

Furthermore, the cultural factors for trade are a bit of a puzzle. For example, for Mexican exports, political instability was completely insignificant until the 2000s, a period with the least amount of observations for that variable. Sharing a religion is insignificant in the 1960s-70s but highly positive by the end of the sample. Sharing a language is still positive for exports for the entire sample while LAIA is negative or insignificant. In addition, the EUTA is insignificant or negative for the decade it has been in force. As discussed in the literature, there are different reasons for signing a free trade agreement, either geography or cultural/historical links. Given distance is negative for the beginning of the sample, Mexico could have decided to enhance trade with countries that are closest, enforcing their pre-determined trade links.

Table (4.2): Mexico’s exports in crisis years

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>-</td>
<td>0.411</td>
<td>0.109</td>
<td>-0.23</td>
<td>-0.331**</td>
<td>0.0297</td>
<td>0.0274</td>
<td>-0.065</td>
</tr>
<tr>
<td>1982</td>
<td>2.834**</td>
<td>*</td>
<td>(0.46)</td>
<td>0.351</td>
<td>(0.377)</td>
<td>(0.188)</td>
<td>(0.165)</td>
<td>(0.123)</td>
</tr>
<tr>
<td>1983</td>
<td>-</td>
<td>0.0011</td>
<td>0.0014</td>
<td>-</td>
<td>0.000770</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1984</td>
<td>0.00134</td>
<td>**</td>
<td>0.0010</td>
<td>***</td>
<td>0.00003</td>
<td>0.00004</td>
<td>0.000048</td>
<td>-</td>
</tr>
<tr>
<td>1985</td>
<td>-</td>
<td>(0.0004)</td>
<td>(0.001)</td>
<td>(0.0006)</td>
<td>(0.000)</td>
<td>(0.00013)</td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>1994</td>
<td>0.00192</td>
<td>0.009</td>
<td>0.022</td>
<td>2**</td>
<td>0.001</td>
<td>0.0012</td>
<td>0.0012</td>
<td>0.0012</td>
</tr>
<tr>
<td>1995</td>
<td>2.172***</td>
<td>1.021**</td>
<td>1.041**</td>
<td>1.300***</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1996</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The variables of interest are the interaction variables for crisis years. Mexico’s GDP in 1981 is negative for exports. However, in 1994, the beginning of the Tequila crisis, it is negative for exports, again. This is profound; three of the crises resulted or originated in a large devaluation in currency. It would be expected that would affect imports, as it would be more expensive to import. In 1982, and 1994, the exchange rate (Rate) for the partner country does not have any effect, or is marginally negative for exports. The LAIA is largely positive for exports over the crises, as is NAFTA. On the other hand, the positive coefficient for NAFTA during these crises for exports decreases in effect in 2007, the beginning of the Global Recession.

5. Conclusion

This paper used a well-regarded and robust gravity model to reflect on the policy and cultural questions for Mexico over the last 50 years by using a panel of 20 countries. By utilizing well-used variables as suggested in the literature, it was possible to analyse the policy implications of trade agreements and crises. The analysis was completed for a diverse panel,
including multiple developing and developed countries over 50 years. The cultural, historical, and political factors create the reasons for trade and trade agreements. NAFTA clearly reflects a propensity to trade with those closest to Mexico, and countries with a higher GDP. The negative coefficient on EUTA and distance for exports reflect the increasing cost to export at a larger distance, even with a trade agreement to reduce those costs. The EUTA has not increased exports over the last 10 years and LAIA has waned in power over the last 30 years.

6. References
The economic effects of the Consumer Credit Act 1974

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Supervisors: Professors Bernardo Bátiz-Lazo & Santiago Carbó-Valverde

1. Introduction
This paper aims at studying the effects of the Consumer Credit Act 1974 (CCA74) on the British economy. This law was the result of one of the recommendations of the Crowther Report, published in 1971. The Crowther Committee, appointed in 1968, concluded that a single legal framework should regulate all consumer credit products. Their final report proposed a drastic change in the understanding of consumer credit at that time. It brought together both the extension of funds for, and the deferment of payments of, purchases of consumer goods, as consumer credit.

Specifically, the goal of the paper is to determine whether there was a significant increase in the outstanding volume of consumer credit due to the enactment of this law. Later on, there will be an analysis of the effect of such an increase on household savings, inflation, and the macroeconomic stability. The main contribution of this paper is to use quantitative methods so as to assess the historical narrative of an event of economic relevance, using novel data constructed from archival records. There is evidence of significant and positive effects of the CCA74 on the outstanding volume of consumer credit motivating the analysis of this phenomenon on the overall British economy.

Before 1974, consumer credit was not well-defined in the United Kingdom. Until that time, the deferment of payments of consumer goods’ purchases and the extension of funds for the same products, were two different things. Therefore, in 1968 the Crowther Committee was appointed to analyse the market of consumer credit as a whole in the U.K., and to give some policy recommendations (Goode, 1979). The main conclusion of the ‘Crowther Report’ issued in 1971, was that the amendment of some of the laws regulating that market was not sufficient, and that it would be preferable to enact a new regulatory framework that would bring together all consumer credit related products under a single umbrella (Crowther et al., 1971).

Additionally, one of the main purposes of the proposed Consumer Credit Act was to improve consumer rights by improving the quantity and quality of information about the cost of these products, available for consumers, so they could shop around for better options. The main target was to oblige financial intermediaries to publish their annual percentage rates (APR) so as to give a standard measurement of the true cost of credit. Reducing information asymmetries should also increase competition among the different suppliers of consumer credit, and therefore lower the cost of credit for British households. Moreover, a better legal framework would guarantee a more stable market for consumer credit, thus reducing the volatility of volumes and prices.

2. The Consumer Credit Act 1974
2.1 The passing of the CCA74
The CCA74 was the result of a process that had started as far back as September 1968, when a committee under the chairmanship of Lord Crowther was appointed to analyse the current regulatory environment concerning consumer credit (Goode, 1975). By that time, consumer credit was a very complex concept. Before the CCA74, extension of funds for, and deferment of payments of, purchases of consumer goods were two different things (i.e. legally). Furthermore, several different laws unsatisfactorily regulated consumer credit, so amending these laws was not the optimal choice to improve regulation (Crowther et al., 1971).

Before the CCA74, consumer credit was regulated by the Bills of Sale Act 1854 (amended several times up to 1891), the Moneylenders Act 1900 (amended in 1911 and
1927), the Sale of Goods Act 1893, the Hire-Purchase Act 1938 (amended in 1954, 1964, and 1965), and the Advertisements (Hire-Purchase) Act 1967 (Goode, 1979). The task of the committee was thus to carry out a comprehensive analysis of this series of overlapping interrelated laws. As the result of that investigation, they issued several recommendations that would allow the government to improve the regulatory framework of consumer credit while increasing protection for borrowers.

Instead of recommending the amendment of some of the acts regulating consumer credit transactions, the committee decided to propose two new different laws (Crowther et al., 1971). The first one was a Lending and Security Act and the second one was a Consumer and Loan Act. The proposal was presented as the ‘Crowther Report’ in March 1971. In September 1973 the government published a white paper entitled ‘Reform of the Law on Consumer Credit’.

The Consumer Credit Bill was introduced in the House of Commons by the Conservative government in November 1973. After the dissolution of Parliament due to the General Election, the new Labour government presented it to the House of Lords in February 1974. The fact that the Bill passed fairly swiftly through the Parliament and was re-presented by the Labour government after the General Election shows that this reform was widely seen as necessary and that there was a common agreement between both parties relating to this specific issue. The Consumer Credit Bill focused mainly on the Consumer and Loan Act proposed by the Crowther Report. The Consumer Credit Act was finally passed on 31st July 1974.

2.2 Expected effects of the Consumer Credit Act 1974 on the economy

According to Duggan (1986) there are four reasons why the disclosure of the true cost of consumer credit could aid borrowers to make a rational purchase of credit. First, they can compare the cost of credit against cash purchases. Second, borrowers will detect unusually costly products. Third, they can get a standardized measurement of the cost of credit in annualized terms (annual percentage rate or ‘APR’). Finally, using all this information, they are able to shop around for better deals.

In line with this reasoning, one of the principal mechanisms that the ‘Crowther Report’ proposed to improve the protection of borrowers’ rights was to compel lenders to publicly disclose the total cost of credit (Crowther et al., 1971; Duggan, 1986). With this new information available, borrowers would be able to shop around looking for better offers, thus encouraging competition among suppliers. Reducing information asymmetries and increasing competition could decrease the price of consumer credit (Danielian, 1929), and its demand could grow (Crowther et al., 1971). This idea was introduced in Part II, section 20 of the Act.

Although it is still not clear what the effects of consumer credit on the economy are, there are some channels through which consumer credit might have real effects. This debate has been around for a long time. Danielian (1929) argued that consumer credit might affect the national income through the productivity of the industries that make use of it, through the supply of capital, and by facilitating exchange. Nonetheless, the author concludes that these effects are uncertain and indefinite. Savings margins might be reduced by higher demand for consumer credit (Danielian, 1929) because part of households’ savings can be allocated to liquidating the debt.

According to the Crowther committee, the CCA74 would not lead to inflationary pressures, a decrease of the volume of savings, or instabilities of the economy in general (Crowther et al., 1971). Over-indebtedness did not appear as a challenge, since the proportion of the population under difficulties was very low at the time of the publication of the report.

There are clear indications that the report was in favour of the development of freer

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593 The government announced the introduction of a voluntary code in Feb. 1973. The code set guidelines for loans to individuals, especially dealing with the disclosure of the true cost of credit (Goode, 1979).

consumer credit markets. With a better-informed public that has sufficient financial education to avoid misusing these products, the growth of consumer credit should not have negative effects on the welfare of the population. On the contrary, it increases access to goods and services, through the inter-temporal reallocation of income. For a British household that was expecting a steady growth in its future income, this could mean an effective increase of its realized utility.

3 Econometric strategy
3.1 Summary statistics
Table 1 presents the sources of all the variables used in the econometric strategy. Data are taken from the United Kingdom quarterly economic accounts, the Office for National Statistics, and the Bank of England. Splicing two different series, since there is no available information for volumes of consumer credit for the pre-1975 period, creates the series for consumer credit. Using the sum of the three series that the Bank of England analysed to follow the evolution of consumer credit fills this lack of information. This series is then spliced with the series for consumer credit lending excluding securitizations to individuals from 1975.

Figure 1 shows the evolution of household consumption, households’ disposable income (both on the left axis) and the outstanding volumes of consumer credit (right axis), all as a percentage of GDP. From this graph it is possible to see that there is a clear positive trend in all of the series. Households’ disposable income grows from about 55 per cent of GDP to almost 60 per cent. Households’ consumption, which exhibits a less marked growth, increases nonetheless from more or less 50 per cent to around 53 per cent of GDP by the end of the sample. Consumer credit, increasing almost 4 times, goes from around 5 per cent of GDP to almost 20 per cent. Although there were important crises during this period, households perceived a constant increase in their future expected income, and were increasing their consumption accordingly.

Table 1: Data and sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable proxied</th>
<th>Variable name</th>
<th>Units</th>
<th>SA</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>UKEA</td>
<td>Household consumption</td>
<td>Household final consumption expenditure: National concept</td>
<td>£m</td>
<td>SA</td>
<td>CONS</td>
</tr>
<tr>
<td>UKEA</td>
<td>Households’ disposable income</td>
<td>HN: Real households disposable income</td>
<td>£m</td>
<td>SA</td>
<td>CONS</td>
</tr>
<tr>
<td>UKEA</td>
<td>Savings</td>
<td>Households and NPISH saving ratio</td>
<td>%</td>
<td>SA</td>
<td>NA</td>
</tr>
<tr>
<td>UKEA</td>
<td>GDP</td>
<td>Gross domestic product: chained volume measures</td>
<td>£m</td>
<td>SA</td>
<td>CONS</td>
</tr>
<tr>
<td>ONS</td>
<td>Inflation</td>
<td>RPI all items: Percentage change over 12 months</td>
<td>%</td>
<td>NSA</td>
<td>NA</td>
</tr>
<tr>
<td>BoE</td>
<td>Consumer credit pre-1975</td>
<td>Sum of advances by British banks to retail distribution, hire-purchase finance houses, and personal (excluding for house purchase)</td>
<td>£m</td>
<td>NSA</td>
<td>CURR</td>
</tr>
<tr>
<td>BoE</td>
<td>Consumer credit post-1975</td>
<td>Consumer credit lending excluding securitizations to individuals</td>
<td>£m</td>
<td>NSA</td>
<td>CURR</td>
</tr>
<tr>
<td>BoE</td>
<td>Consumer credit price</td>
<td>Bank Rate</td>
<td>%</td>
<td>NSA</td>
<td>NA</td>
</tr>
</tbody>
</table>

*CONS = constant prices. CURREN = current prices. NA = not applicable. DEFL = deflator. The base year for the deflator and the constant prices is 2011 = 100.*
Particularly for the consumer credit series, we observe an increase before the enactment of the CCA74, but a very sharp decline after just six months of its enactment. From its trough in the first quarter of 1977, it grows steadily almost until the end of the sample. This series also seems to exhibit an important persistence component, not highly observed in the other two. This is an initial suggestion of the effect of sudden external shocks on consumer credit.

**Figure 2** shows the evolution of households’ savings and inflation, highlighting the enactment of the CCA74. Before 1974, inflation seems to be moderate and not very volatile, but after this date there is a significant increase in inflation. It was probably the most important concern of the government around that time. Policy was directed at fighting inflation and although there is a second peak after the implementation of the ‘Thatcher reforms’, these seem to have had an important effect in reducing inflation.
Also, as seen from the graph, households’ savings ratio at least doubled during the sample period. It went from around 6 per cent in the late 1960s to more than 12 per cent during the 1980s. Up to this point, it appears from both graphs that households were enjoying a constant increase in their consumption, led by increases in their disposable income and their indebtedness. At the same time, they kept on increasing their savings, thus supplying more resources to the financial markets.

Table 2 presents the summary statistics of all variables for the whole sample. All values are reported as a percentage of GDP. Household consumption was on average 51 per cent of GDP. Disposable income, previous savings, and new indebtedness usually finance this consumption. Households’ average disposable income during the sample period was 57 per cent of GDP and the mean outstanding volume of consumer credit was 11 per cent of GDP. Households’ average saving ratio was 10.5 per cent and inflation was on average 9.9 per cent, proving to be a period of high inflation compared to the historical levels for the U.K. Table 3 presents the t-tests to compare the means of all variables before and after the CCA74. It is clear that the means of all variables are higher after 1974 all being significant at the 1 per cent level.

<table>
<thead>
<tr>
<th>Table 2: Summary Statistics of whole sample</th>
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<tbody>
<tr>
<td>Variable</td>
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<tr>
<td>----------------------------</td>
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<tr>
<td>Consumer credit</td>
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<tr>
<td>Household Consumption</td>
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<tr>
<td>Households’ Disposable Income</td>
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<tr>
<td>Households’ Savings Ratio</td>
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<tr>
<td>Inflation (RPI)</td>
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</tbody>
</table>

<table>
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<tr>
<th>Table 3: T-tests Before and After the Consumer Credit ACT (levels)</th>
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<tr>
<td>(1)</td>
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<tr>
<td>Consumer credit</td>
</tr>
<tr>
<td>Household Consumption</td>
</tr>
<tr>
<td>Households' Disposable Income</td>
</tr>
<tr>
<td>Households’ Savings Ratio</td>
</tr>
<tr>
<td>Inflation (RPI)</td>
</tr>
<tr>
<td>Log GDP</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

3.2 Effect of the CCA74 on consumer credit volumes

Equation [1] presents the reduced form of the econometric strategy, where \( V_t \) is the outstanding volume of consumer credit, \( P_t \) is the proxied price of consumer credit, \( \text{Act}_t \) is a dummy variable that takes the value of 1 for those periods where the Act was in force and 0 otherwise. The interaction term is the multiplication of the proxied price and the dummy variable. \( X_{it} \) is a set of explanatory variables that influence the outstanding volume of consumer credit, such as household consumption, households’ disposable income, households’ savings ratio, and GDP, and \( \varepsilon_t \) is the error term.

\[ V_t = \alpha + \gamma P_t + \theta \text{Act}_t + \gamma \text{Interaction}_{it} + \beta_{i2} X_{it2} + \varepsilon_t \]  

[595] This level of inflation is only comparable with that observed just after the two world wars (Thomas, Hills, & Dimsdale, 2010).
Table 4 presents the initial results of the estimation of the econometric strategy. The first model estimates the effect of the CCA74 on the outstanding volumes of consumer credit just controlling for the time trend, since all the series display a positive trend. The second model, instead of including the time trend, uses as control the proxied price of consumer credit, households’ consumption, households’ disposable income, the savings ratio and the logarithm of the GDP. In the first two models the effect of the CCA74 is significant but negative, which can be driven by the important initial reduction in the outstanding volumes of consumer credit just after the enactment of the CCA74. Nonetheless, once the interaction term is included in the third model, the effect of the price on consumer credit is isolated, and there is evidence of a positive and significant effect of the CCA74 on the outstanding volumes of consumer credit.

4. Conclusions
The CCA74 was a law that brought together all consumer credit products under a unique regulatory environment. The purpose of the law was to better regulate all consumer credit products and more importantly, increase consumer rights by forcing the financial intermediaries and retail stores to make publicly available the information about the true cost of credit. The Crowther committee expected that through this channel, issuers of credit would increase their competition and therefore would reduce the cost of consumer credit. Since households were expecting their future income to increase, a reduction of the cost of credit would incentivize an increase in the demand for these products. The econometric strategy
shows that there is significant evidence that this was the case.

These results motivate the next part of the research project, which is to analyse the effects of the increase of consumer credit on households’ savings, inflation, and the macroeconomic stability. According to the Crowther committee, there should not be any significant negative effects on any of these variables. Nonetheless this was a period that witnessed an economic recession with historically high inflation rates. Therefore a thorough analysis of this phenomenon is very important, as it could shed valuable information for current policy debates around consumer credit.

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The limits of sovereign power to confiscate: A micro-behavioural analysis of the Ottoman practice of wealth seizure, 1770s-1839
Yasin Arslantas (London School of Economics)

The economic significance of hydroelectricity: autarky politics in Norway
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A pauper education: children in the Irish workhouse school, 1851-1911
Simon Gallaher (University of Cambridge)

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Shane Horwell (University College London)

Betting on the Wirtschaftswunder: the resumption of foreign investment in Germany after WWII
Philipp Kessler (University of Mannheim)

Government role in bank distress: a case of Imperial Russia in the 1899-1902 financial crisis
Nikita Lychakov (Queen’s University Belfast)

Where art thou? The role of indigenous agency in pre-independence Algeria
Laura Maravall Buckwalter (Universidad Carlos III de Madrid)

Greta Seibel (London School of Economics)

Lease markets for land and recovery from war: How factor markets, institutions and social relations determine economic recovery from war in the former county of Flanders, c.1450-1550
Bram van Besouw (Utrecht University)

Standardized footwear, invalid labour, and the technology of production: Marc Isambard Brunel and the Battersea Shoe Factory
Meaghan Walker (University of Alberta)
Abstracts of Academic Papers
**I/A  Medieval Economy of England**

**Alexandra Sapoznik** (King’s College London)

*Bees in the medieval landscape: economy, technology and environment, 1000-1500*

The recent catastrophic decline in bee populations has caused concern for food systems worldwide. By contrast, the medieval environment was teeming with bees, and bees and their products were important commodities managed by lord and peasant alike. Agricultural treatises describing the most productive methods for beekeeping were written to help landlords in this endeavour. Yet peasants, too, often sought to own bee swarms and medieval beekeeping was an activity particularly associated with smallholding peasants.

Bee products – honey and wax – were in high and increasing demand over the middle ages. Honey renders paid to support the household of the king are noted in the Domesday Book of 1086, which also records almost 1400 beehives across lowland England. As mead consumption declined over the middle ages, honey remained an important sweetener eaten in large quantities by wealthy households even as sugar became increasingly available. Furthermore, only candles made from beeswax could be used for celebrating the Mass. As the population grew over the high middle ages, the number of parish churches and other religious institutions also increased, driving the need for wax in ever greater quantities.

One of the outstanding features of the medieval English landscape was the overall lack of dense woodland, which meant that bees had to be kept in manmade hives. In this, England differed from many parts of northern Europe, where sylvan honey and wax were produced in vast quantities. Although very large quantities of wax and honey were certainly imported into England over this period, manorial records demonstrate the prevalence of domestic apiculture.

Using a variety of sources, including archaeological evidence, illuminated manuscripts, manorial and college accounts, court rolls, law codes and agricultural treatises, this paper will present the findings from a British Academy small grant-funded project on the role of beekeeping and bee products in the medieval economy, mapping an economic geography of English apiculture. This overlooked aspect of the medieval economy sheds light on market-driven production and commercialization within the economy, for the ownership of bee swarms was a sought-after privilege among peasants and the production of wax and honey were potentially important sources of revenue in a period in which much of the population was under increasing economic strain.

Landscape and environment play an important part in this study, for bees and beekeeping were vital to the pollination of a range of plants integral to medieval ecosystems. By examining medieval visual culture and agricultural treatises in conjunction with more quantitative methods of research I aim to provide a clearer understanding of the place of beekeeping in the medieval economy, offering a new perspective on commercialization, resource management and human intervention in the environment.

**Martin Allen** (University of Cambridge)

*The first Sterling Area*

In the 1970s Nicholas Mayhew proposed that Britain and Ireland was one Sterling Area for much of the thirteenth and fourteenth centuries, with a common currency largely consisting of English coins. The evidence for this principally consisted of coin hoards of similar composition from various parts of the British Isles, while official prohibitions and regulations of the use of coins in England and Scotland elucidated the disengagement of Scotland from the common currency in the second half of the fourteenth century. This was an important insight, but it has been largely ignored by economic historians. Estimates of the English coins involved were an order of magnitude lower than the amounts suggested by the hoards, which seems to indicate that the coinage system in Scotland was much more integrated with that of England than may have been envisaged previously.

currency have been routinely used as figures for the money supply of England, but this is mistaken. This paper will establish when the various parts of the British Isles became part of the Sterling Area or left it, examining the implications for our understanding of the English economy.

The integration of Wales into the Sterling Area began with the Anglo-Norman occupation of Gwent and parts of North Wales in the late eleventh century. The Welsh princes of Gwneidd in North Wales imitated the English coinage at Rhuddlan in the late twelfth and early thirteenth centuries, and by the mid-thirteenth century Wales had an increasingly monetized economy using English currency. Ireland had its own Hiberno-Scandinavian coinage, minted in Dublin, from about 995 to the Anglo-Norman invasions of Ireland in the late 1160s and the sack of Dublin in 1170. Anglo-Norman coinages were issued on an Irish standard from the 1180s, and in about 1208 King John introduced a new Irish coinage fully integrated with the English currency. From the mid-fourteenth century onwards supplies of English coins to Ireland were insufficient for the needs of its economy, and in the 1460s an autonomous Irish coinage was introduced. The Scottish coinage began with David I's invasion of northern England in 1136, which led to the production of copies of English coins for David I and his son, Prince Henry. The Scottish currency became fully integrated with that of England in the first half of the thirteenth century, but this integration ended in the second half of the fourteenth century, following debasements of the Scottish coinage. The Isle of Man seems to have been integrated into the Sterling Area in the thirteenth century.

New estimates of the Irish and Scottish currencies in the second half of the thirteenth century are presented, indicating that England and Wales had no more than about 80 per cent of the English sterling currency in this period. Ireland had the lowest per capita supply of currency and the slowest rate of growth in money supply. The overall per capita supply of currency in the Sterling Area greatly increased in the second half of the fourteenth century, as population fell. Data from coin hoards and single finds of coins indicate that supplies of currency in active use in the economy and held in cash reserves greatly increased in this period of high per capita currency.

The paper will show that estimates of the English sterling currency are not estimates of the currency of England, and that they cannot be combined with data relating exclusively to England in economic modelling without qualification.

Dave Postles (University of Hertfordshire)
Financial organization in English boroughs

The issue of borough finance has largely been explored through external relationships and how those external sources had an impact on the ability of burgesses to manage their affairs. The financial composition of resources varied considerably, although may well have been generally insubstantial. Disinclination to investigate the financial organization and resources of boroughs and cities has been attributed to a number of reasons: the lack of detailed financial records before the very late middle ages; the conformist or conventional arrangement of what records are extant; and the generally ‘slender’ resources at the disposal of the privileged urban places. The financial organization inside boroughs and cities is, however, important for an understanding of the internal politics of urban governance as well as external relationships. The control of income and expenditure, however minimal the amounts involved, reflected internal constitutional developments and the limits of authority.

Comparison is principally presented here between the arrangements in the borough of Leicester and the City of Exeter through the fourteenth century. The contrast pertains to both the level of resources and the different solutions for accountability. A comparison of the city of Exeter and the borough of Leicester is instructive about the varying capacities of privileged urban places. Excluding taxation, which was intermittent and usually destined for external delivery, it is quite clear that Leicester’s ‘corporate’ resources accorded with the adjective ‘slender’. Ordinary income consisted of rents from a small number of selds at the gildhall and
payments for admission to the gild merchant. Since the expenses were normally inconsiderable, the paucity of resources was not problematic. In complete contrast, the resources at the disposal of the corporate government of Exeter were of a different order of magnitude. If we take eleven years between 1304 and 1353 for which receivers’ accounts are extant and complete, the total income for these eleven years exceeded a thousand pounds, almost a mean of a hundred pounds each year. The income consisted of entirely regular receipts. The principal categories comprised: rents from corporate property; issues of the city (including customs); and pleas and ‘profits’ (from amercements in the courts and from gild admissions). For the eleven years, rents contributed about 40 per cent of the charge, issues 25 per cent, and pleas and ‘profits’ 29 per cent. The substantial rental income was remarkable, but could also be precarious. A major constituent was the farm of Duryard, £25 in 1304, but increasing to £32. If the general rental income was compromised, income suddenly plummeted. Thus in 1341-42, the rental income declined to £11, causing a catastrophic collapse of revenue.

The resources of privileged urban ‘communities’ thus varied and were not inevitably ‘slender’. In the case of the city of Exeter, its financial stability was important in the context of its status as a city, integral to that status, and vis-à-vis the bishop and the cathedral chapter. The fiscal integrity of the city maintained its position when rivalry with the see occurred. At the other extreme, the borough of Leicester really did have ordinary revenues which were highly restricted. In both cases, however, the fiscal organization of the borough was the reason for the first internal negotiations about the constitutional development of each place. The privileges of boroughs and cities were acquired through the activities of different institutions in the twelfth and thirteenth centuries: ‘commune’, gild merchant, and portmoot. The consequence was variation in the status of the principal officer(s). In both Exeter and Leicester, mayors evolved as the leading official. Constitutional developments ultimately resulted in formal councils which acted as a brake on the authority of mayors and their informal advisers (although the Jurats in Leicester had an official role). The necessity to account for finances was an immediate ‘controversy’ in the affairs of these boroughs and cities. Much of the institutional organization in the English borough of the thirteenth and fourteenth century concerned the administration of funds. Since the financial records of the preponderance of boroughs and cities have not survived before the fifteenth century, these transitional aspects of financial control have been somewhat concealed.

Finally, where boroughs had been promoted by lords or had, as in the case of Leicester, been mediatized, the lord was as important both in the internal financial organization and the fiscal demands on the borough. The conceptual acceptance of the duty to conserve made such lords cautious in their exploitation of their urban assets but also prepared to interfere in the good governance of the borough, whether at the request of the burgesses or by their own initiative.

Nick Amor (Independent scholar)

*What TNA CP 40 tells us about the medieval woollen cloth industry*

In 1454 the English Parliament declared that ‘the making of cloth within all parts of the realm is the greatest occupation and living of the poor commons of this land’. As the country’s first major manufacturing industry, in the late middle ages woollen cloth provided domestic wealth and employment, as well as generating export earnings. While the export data is readily available, it has to date been more difficult to evaluate the size and nature of the domestic industry. Alnage accounts offer some clues, but they are intermittent, often unreliable and include only limited data – in Suffolk they do not give the occupation of the person presenting the cloth and, in the 1390s, do not even give the place of residence. Statutes, parliamentary rolls, calendars of state rolls, together with civic, borough, manorial and testamentary documents, add to our knowledge, but only occasional references to the cloth industry can be found in such sources.
In contrast, the plea rolls of the royal court of common pleas provide a database of epic proportions. The court sat during four terms each year to determine disputes between private individuals, and each term generated 1,000s of writs of process. Nearly all volumes of plea rolls survive. Most entries record debt claims for sums ranging from 40s. to many thousands of pounds. They allocate each claim to a county, thereby telling us where the cause of action arose. As from 1413 they invariably give the name, place of residence and occupation of the defendant. As well as the name, they also often give the place of residence and occupation of the claimant. Occasionally, they provide more detail.

The cloth industry involved relatively high value transactions, 40s. would barely have bought a second quality broadcloth. So cloth-workers figure prominently in these plea rolls. Studying just one volume every five years, and extracting the data for just one county (Suffolk), allows the identification of hundreds of woolmen, card makers, spinsters, weavers, fullers, dyers, shearmen and clothiers. It is then possible to:

- Tell how many of each craft are recorded in each period of say twenty years.
- Tell where they lived.
- Tell the value of their claims.
- Tell with whom they were in dispute.
- Tell the place of residence of those with whom they were in dispute.
- Tell the occupation of those with whom they were in dispute.
- Reconstruct family dynasties of cloth-workers.
- Use other sources in conjunction with the plea rolls to flesh out the details.

With this volume of data, trends can be identified and conclusions drawn on more than anecdotal evidence. We can begin to put the domestic woollen cloth industry on firm statistical foundations.

Two case studies are set out below illustrating the use of the plea rolls in conjunction with other sources.

1. The Rise of the Suffolk Clothier (in which the plea rolls are the pre-eminent source)

In the mid-fifteenth century the headport of Ipswich, which included Colchester, was, after London, the most important for the export of woollen cloth by Hanseatic merchants (figure 1.1). Suffolk cloth-workers dealt with them direct. As the Hanse abandoned Ipswich for London there was a sharp increase in the number of Suffolk clothiers (figure 1.2). They were a necessary link with the capital and did nearly half their business there. They did not, however, often deal direct with the Hanse, but with members of the city’s leading merchant companies, particularly grocers and mercers (figure 1.3). Indeed, Suffolk clothiers won a larger share of this London trade than those of any other county. Their business with the mercers was the most valuable. The rise of the clothier had the effect of further concentrating cloth production in Babergh (figure 1.4). It also probably led to the subjugation of other cloth-workers and the evolution in Suffolk of the putting out system.
Figure 1.1: Cloth exports from the headport of Ipswich

Source: Carus-Wilson and Colman

Figure 1.2: Numbers of Suffolk clothiers

Source: TNA CP 40
2. **Worsted Weavers in Norfolk** (in which the plea rolls fill in gaps in the evidence)

In the fourteenth-century Tunstead hundred on the north-east coast of Norfolk, which included the towns of North Walsham and Worstead, was ‘the heart of the medieval rural worsted industry’. Judging by the amount of poll tax paid in 1381 by weavers in various different places, those of Tunstead appear to have been exceptionally affluent (figure 2.1). Thereafter, their numbers fell and did not begin to recover until the early sixteenth century, while the number of worsted weavers in Norwich increased (figure 2.2). Subsequent tax returns for 1449 and 1524-25 indicated a marked fall since 1334 in the wealth of Tunstead hundred. Did this happen because overseas demand for single worsted declined while demand for double worsted remained buoyant; or because Norwich used commercial, industrial and/or political muscle to hijack the worsted industry; or because the worsted
industry in Tunstead was suppressed by reason of the weavers’ involvement in the Peasants’ Revolt and earlier acts of rebellion?

**Figure 2.1: Poll tax paid by weavers 1381 (%)**

![Poll tax paid by weavers 1381 (%)](image)

*Source: Fenwick*

**Figure 2.2: Number of weavers**

![Number of weavers](image)

*Sources: CPR, Fenwick, Dunn, TNA CP 40*
I/B  Credit, Risk and Law

Stefania Montemezzo (University of Bologna)
‘All that glitters is not gold’: bankruptcies of Venetian firms in the Renaissance

Renaissance Venice was one of the main centres for international trade and intercultural contacts. These were sustained thanks to the success of the Venetian merchants, who were able to thrive their companies thanks to a mix of personal cleverness and public support (as, to mention two, consulates and international agreements). However, not all companies and societies achieved success: in many cases, due to external factors (as wars or prices falls) or deceitful behaviours, firms collapsed and their cases ended up in front of the Venetian Giudici di Petizion, a special court for trials between merchants. Thanks to their records, in this paper I will analyse some cases of bankruptcy of Venetian firms at the end of the fifteenth century. In particular I will explain the main set of problems that arose during and after the collapse of societies, which were often linked to the familiar structure of Venetian companies. The equal partnerships among brothers within the fraterna originated issues in the acknowledgement of debt and hanging payments. Because of this configuration of the Venetian trade in the late medieval period, informal records, such as accountability and private writings and letters, gained an increasing importance in court, in order to prove the existence of impending business or incorrect behaviours.

With this paper I aim to understand the hidden side of Venetian trade in the Renaissance in order to understand how firms’ dismantling happened and how it was handled by the Venetian institutions.

Catia Antunes (Leiden University)
The Bankruptcy of Cunertorf, Snel, Janssen & Co, 1570-95

Avner Greif postulates that institutions are paramount for the development of firms. They have played a central role in the transition from family- or religiously-lead business networks into a business system where individuals, their firms and their networks are central. His approach to the Maghribi and Genoese cultural economic formation concludes that the Genoese individualism was highly supported by a system of institutions that were protective of the property rights of individuals even if that protection might infringe on the property rights of groups, as was the case when cheaters and defectors in a foreign town saw their punishment being thrashed upon their community in retaliation for their behaviour.

In his writings, Greif presents a plausible correlation between institutional developments, the formation of firms, defence of property rights and ultimately economic success. However, Greif fails to acknowledge that this might not have been a linear process, as institutions often failed to respond to the necessity firms held for protection of property rights. Even in highly developed urban economies, as was the case of the Low Countries in the sixteenth and seventeenth centuries, which has earned Jan de Vries and Ad van der Woude’s adjectivation of ‘Modern’ (The First Modern Economy), institutions were unable to protect firms as postulated by Greif.

I propose to bring forth the case of the firm Cunertorf, Snel & Janssen, a late sixteenth-century firm in Lisbon, but constituted by men from the Low Countries. This firm was fairly successful and its portfolio extended into Asia, the Atlantic, the Northwest of Europe and the Baltic. Its close relationship with merchant elites in Iberia and the main commercial centres in Northwestern Europe and the Baltic reflect a diversified set of interests in production outlets and consumption markets alike. Even if this was possibly one of the most successful firms of its days, Cunertorf, Snel & Janssen faced a serious risk of bankruptcy when a juridical dispute brought before a court in the Low Countries was institutionally mishandled, seriously injuring the social capital of the partners and the economic feasibility of the firm. The analysis of the original trial records and court procedures will bring to light the reason why the courts in the Low Countries failed to protect the above-
mentioned firm as well as its partners. Furthermore, these courts were seriously challenged by other avenues of conflict resolution that were more efficient and certainly less damaging for the partners. My hypothesis is that even if institutions might have been paramount for the defence of property rights of firms and subsequent economic growth that was still not a guarantee in the most developed European economy by the end of the sixteenth century.

**Magrit Schulte Beerbühl** (Heinrich Heine University of Dusseldorf)

*Risk and law in a colonial and globalizing world: the case of Mathias Giesque and the English bankruptcy law, c.1690-1706*

The Nine Years War (1689-98) along with widespread privateering caused a wave of bankruptcies in England and on the European mainland. Particularly hit were those merchants with widespread international trade relations. Mathias Giesque, a German born merchant living in London, belonged to the unfortunate. He had a mercantile house in London and a branch in Bilbao. His business relations were not confined to Europe but even stretched into the colonies.

The many bankruptcies of these years gave rise to a reform of the old bankruptcy laws by the Parliament in London. That reform was decisive towards a more modern law in England which after the independence of the United States decades later served as the foundation for the American bankruptcy law.

The volume of the surviving records of Giesque’s bankruptcy allows an unusually detailed impression of his far-reaching trade and economic risks and moreover, in the contemporary bankruptcy proceedings and the changing practice of conflict regulation.

**Lisbeth Rodrigues** (University of Lisbon)

*Social capital and litigation: the case of the Misericòrdia of Lisbon during the eighteenth century*

This paper addresses the relationship between social capital and litigation in the eighteenth century, taking the Misericòrdia of Lisbon as a case study. Over the last decades, legal institutions, as well as the concept of social capital (Coleman 1990; Putnam 1995; Fukuyama 1995) have drawn the attention of social and economic historians. While the former have mainly focused on the chronology and subject-matter of litigation during the early modern period (Kagan 1981; Sharpe 1983; Brooks 1998; Champion 1994; Muldrew 1998; Brooks and Lobban 1997), the economic literature has centred on how institutions influence the economic performance (Greif 1993; North 1990; Ogilvie 2004; Ogilvie and Carus 2014). Both, however, recognize that social capital is a crucial element for efficient economic exchanges. It is argued that transactions imbued with high levels of trust demand less monitoring and, in these cases the propensity to incur in opportunistic behaviours decreases, as well as litigation.

In Portugal, little research has been conducted on this topic, and this paper aims to be the first step to fill this gap. For the case, the Misericòrdia of Lisbon affords a good example. Founded in the late fifteenth century by Queen Leonor (1458-1525), the Misericòrdia was a lay brotherhood designed to perform the spiritual and corporal works of mercy. By the eighteenth century, it appeared as the most relevant charitable foundation in the city, performing several duties from other institutions, such as the management of hospitals, the visit to poor prisoners or the upbringing of abandoned children. In addition to its practices of charity, the confraternity engaged in multiple urban activities and, accordingly, the social universe and the levels of social capital of its contractual relations were widely diversified.

In this paper, I provide a newly assembled dataset that comprehends about 1200 lawsuits and includes information on the length of the judicial procedures, the subject-matter of litigation, the profile of the litigants (name, address and occupation), the amounts of money involved and the judicial costs. It shows two aspects: 1) the Misericòrdia made great use of the courts of law; 2) almost every social segment of the population was represented in them. Thus, it will be argued that the regular use of these institutions by the confraternity suggests a
contractual universe permeated with low levels of social capital. From this, two questions arise: did social status and wealth matter when resorting to the courts? Moreover, what was the impact of social capital on transaction costs? It will be argued that the Misericórdia used the law more directed towards a display of its power, rather than to solve contentious economic agreements. Systematic data support this argument, such as the values that triggered the conflict, the length of the disputes and the costs of the judicial proceedings.

**Keywords**: social capital; litigation; Misericórdia; courts of law.

**References**


I/C Institutional Change in the Long Eighteenth Century

Dan Bogart (UC Irvine)

‘There can be no partnership with the king’: political instability and the English East India Company

Political instability is one of the major sources of poor governance and slow economic growth. The fragility of regimes and social unrest which follow from political instability are especially problematic for firms that partner with the government on developmental projects. Partnership often involves government subsidies to compensate firms for making investments. In times of political instability, these might be cancelled or altered in ways that are difficult to predict. Partnering firms have an incentive to invest less or at least delay investments until they better understand the future. This paper gives new estimates of political instability’s effects by studying the English East India Company. Its history offers a useful perspective because England experienced several contentious changes in power and fiscal crises during the Company’s first 150 years of operation.

The English East India Company (or EIC) was founded in 1600 through a charter from the English monarchy. It was granted a monopoly over all trade between England and Asia. In return, it paid special import duties and served the monarch’s interests by checking the influence of European rivals in Asia. The partnership worked well for both in the long-run, but it was on shaky ground for much of its early history. The lack of strong legal protections meant that the monarch could easily renegotiate the EIC’s charter and extract its profits. On several occasions between 1600 and 1750 the EIC was forced to lend to the monarch or to pay bribes to retain its privileges. The English monarch also violated the monopoly by authorizing private traders to enter the EIC’s market. One of these events even prompted the EIC’s legal counsel to warn ‘there can be no partnership with the King’. The other major governmental actor, Parliament, also proved to be an unreliable partner. It helped to renegotiate the EIC’s charter several times between 1694 and 1744.

This paper argues that political instability weakened the government’s commitment to honour the partnership, and as a result the EIC invested less in shipping capital. Several renegotiation events and extractions followed changes in the monarchy, parliamentary elections, and moments of fiscal crisis. As I argue below fiscal crises weakened commitment by raising the monarch’s utility from extraction. New monarchs and elections had similar effects because new governments suffered little loss in reputation by renegotiating a controversial charter granted by a previous government.

In order to study the effects on investment, I use a new annual series on EIC shipping capacity measured in tons. Shipping was the main activity of the EIC and its capacity was closely related to sales revenues and profits. I augment a standard reduced form investment model with variables for the government’s deficit ratio, indicators for years with new monarchs, and years with elections to the House of Commons. They capture moments when political instability discontinuously rises either through fiscal crises or regime changes. Additional variables include EIC sales revenue, shipping costs, war, and the capacity of the EIC relative to its main rival, the Dutch East India Company. The main results point to negative effects of deficits, new monarchs, and elections on the growth of shipping capacity. The magnitudes are equivalent to an exceptionally large negative shock to EIC sales growth.

This paper contributes to several literatures. The first relates to the history of capitalism, where one prominent theme concerns politics and its relationship to early corporations. This paper builds on a number of studies which argue for a connection between instability and weak corporate performance. It is one of the few in the historical literature to model and identify the effects of instability on investment.

This paper also contributes to the literature analysing British institutions in the 1600s and early 1700s. Much of the literature focuses on whether there was a commitment to protect
property rights in land and government debt, but less has been said about rights granted to corporations. The narrative and econometric evidence in this paper show that the British government, including Parliament, could not always make credible commitments during the seventeenth and early eighteenth centuries. Political instability, emanating from contentious regime changes and fiscal crises, was the key problem.

Finally, this paper contributes to the broader literature dealing with political instability and uncertainty. One key issue is whether firms’ investments are significantly affected. This paper is novel because it offers evidence on one of the most important firms in history, and it analyses the effects of different shocks on the same investment activity over a 100-year time span.

Sean Bottomley (Institute for Advanced Studies, Toulouse)

Property rights and wardship in England, 1603-60

In an oft-cited paper, Douglass North and Barry Weingast argued that until 1688, the Crown was able to alter and/or expropriate property rights unilaterally, with deleterious consequences for economic development. It was only when a new era of representative government was instated immediately after the Glorious Revolution, that effective restrictions were imposed on the monarchy and property rights secured. The corollary of secure property rights was an increase in the expected returns to investment and so in turn an increase in the incentive to invest: the Glorious Revolution was handmaiden to the industrial revolution. This account is controversial. In particular, Gregory Clark has argued that because the implied rate of return to land changed little between 1540 and 1800, land rights at least must have been reliably secure throughout: ‘to read the Glorious Revolution as ushering in a stable regime of taxes and property rights that laid the foundation for the industrial revolution is to write Whig history of the most egregious sort’.

This paper contributes to this debate by presenting new evidence concerning the Court of Wards and Liveries between 1603 and 1660, when its abolition was confirmed. The Court, which combined judicial and fiscal responsibilities, had been established in 1540 to help revive the Crown’s right to manage estates held under certain feudal tenures (usually knight service), which had descended to a minor (the ward) until they attained their majority (twenty-one for men, sixteen or fourteen for women). In their search for extra-parliamentary revenues, the Stuarts exploited these rights with especial vigour (netting £83,085 from wardship and accompanying levies in 1639) – and without scruple. When, for example, a family would dispute the tenure by which they held their estate, the Court often refused to hear their evidence or to take a verdict until the jury had found for the Crown; all sorts of pressures were brought to bear until the ‘right’ decision was reached. Moreover, the Court’s officers were themselves notoriously venal. One officer reputedly observed upon the Court’s abolition that ‘his ordinary losses were as the shaving of his beard which would grow faster thereby. The losing of this Place, was like the losing of a Member, which was irrecoverable’. Thereafter, once the Crown had been able to assume control, estates were reportedly ruined by the wasting of woods, the overcropping of fields and, in effect, asset stripping.

Unsurprisingly, wardship was a source of great parliamentary and popular grievance and its sustained revival controverts Clark’s argument. But, while North and Weingast have focused on the Glorious Revolution as the key constitutional harbinger of secure property rights in England, the experience of wardship indicates that a more nuanced account of constitutional change during the seventeenth century may be in order. The feudal tenures which underpinned wardship were abolished as part of the Restoration Settlement of 1660, an

599 Anon, The way to be rich, according to the practice of the Great Audley, (London: E. Davis, 1662), p. 17.
event described by Blackstone as ‘a greater acquisition to the civil property of this kingdom than even Magna Carta’.\(^{600}\) In conjunction with recent contributions to the literature that have focused more on changes that occurred post-1688, it may be more accurate to describe developments in this period as a continuum of institutional change underpinning economic development, rather than to lend primacy to one ‘Revolutionary’ event.

**Ling-Fan Li** (National Tsing Hua University)

*The secondary market of English government debt in the late seventeenth century: the case of the Stop of Exchequer 1672*

In 1665, Parliament passed an Act to raise money with a guarantee of repayment with interest at 6 per cent per annum. The lenders advanced money to the King, and received receipts numbered in sequence and signed by the Lord Treasurer. These receipts (called Treasury orders), by notice to the Auditor of the Receipt, could be sold and assigned to a third party without charges. In order to restore the Navy and prepare for war, on 2 January 1672 Charles II announced the decision to stop repayments of treasury orders, which was the Stop of Exchequer.\(^{601}\) At the time, most of the treasury orders were held by London goldsmith-bankers. In February 1677, by Letters Patent Charles II authorized payment of annual interest at 6 per cent on the debt of £1.3 million owed to those affected by the Stop. The repayment of interest faltered after 1684. Until 1702, a provision for the discharge of interest on the debt was made again: payment of interest at 3 per cent annually to begin in December 1705.

A large part of the defaulted loans came from money deposited with the goldsmiths. Consequently, a great number of people, who did not directly lend money to the Crown, were also hurt by the Stop. There were two layers of credit chains: one between the goldsmith-bankers and the Crown, the other between the depositors and the goldsmith-bankers. When Charles II discharged the debts of goldsmith-bankers owed to their depositors, and used tax revenue to repay the debt, the personal debt of goldsmiths to their creditors was converted into the debt of the Crown. This method was the precursor of the permanent annuity financed by regular taxation, which emerged in the 1720s.\(^ {602}\)

With the help of the Assignment Books, this paper will examine the social background of the creditors holding annuity, reconstruct market prices of annuity, and analyse what elements influenced the secondary market of annuity. Most secondary transactions of these annuities involved monetary reasons, but there are signs that these annuities were quite useful and acceptable in the sphere of family finance, i.e. endowment, legacies or marriage settlement. For example, Peter Aylworth, a citizen and clothworker of London, granted his annuity of yearly interest of £12 6s as dowry to his daughter, Hannah.\(^ {603}\) A general impression about the reasons behind transactions of annuity can be drawn from table 1. The annuities were also employed for debt settlement, and to act as security for future payment.

<table>
<thead>
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<th>Table 1: The types of secondary transactions (%)</th>
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<tr>
<td>Monetary</td>
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<tr>
<td>81%</td>
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</table>

*Source:* National Archives, E406/16-26


\(^{603}\) PRO, E406/16 f.45.
Since North and Weingast published their article arguing a dramatic development of capital markets within a decade after the Glorious Revolution, scholars have fiercely debated the relationship between the institutional change and the development of capital market, between the institutional change and economic growth; and the consequence of the institutional change on public and private borrowing. Taking advantage of price information for secondary annuity transactions, this paper constructs the yearly interest payment to secondary price ratio of annuity to measure the risk associated with the investment perceived by the investors. The bigger ratio is, the higher the risk (i.e. of default) perceived by investors. As shown in table 2, there was no noticeable change in the ratio before and after the constitutional change of 1689. Instead, the interest to price ratio was high in 1685-1701 when there was no repayment. Once the provision for the discharge of interest was made, the secondary market not only became active prior to the actual date of repayment, but the ratio of 1702-5 fell to the level of 1678-84. It seems that the credibility of government perceived by the financial market did not dramatically change between the last years of Charles II and the first 5 years of the new regime.

Table 2: The ratios of yearly interest to secondary price

<table>
<thead>
<tr>
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<th># of transactions</th>
<th>Interest/secondary price</th>
</tr>
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<tbody>
<tr>
<td>1678-1684</td>
<td>31</td>
<td>0.134 (0.093)</td>
</tr>
<tr>
<td>1685-1701</td>
<td>88</td>
<td>0.334 (0.223)</td>
</tr>
<tr>
<td>1702-1705</td>
<td>285</td>
<td>0.160 (0.068)</td>
</tr>
<tr>
<td>Pre-1689</td>
<td>39</td>
<td>0.176 (0.229)</td>
</tr>
<tr>
<td>Post-1689</td>
<td>366</td>
<td>0.198 (0.129)</td>
</tr>
</tbody>
</table>

Source: National Archives, E406/16-26
Note: The standard deviations are shown in the bracket.

Aaron Graham (University of Oxford)

Credible commitment and the political economy of Jamaican finance, 1769-1839

What was necessary for credible commitment in colonial conditions in the eighteenth century? Even the most recent studies on credible commitment in eighteenth-century Britain still largely focus on a few paradigmatic examples, but this paper will use a new dataset to examine how and why its colony of Jamaica constructed sophisticated fiscal and military structures and an effective system of public credit in this period to support the plantation economy and the slave system that underpinned its operation. It will argue that in order to create credible and reliable systems of finance and credit, white elites in Jamaica had to carve out a protected political space within the colonial system that was accessible to local elites and isolated from the unpredictable vagaries of metropolitan politics and policy. This inevitably involved white elites in a succession of successful political clashes with the imperial government and its own fiscal and military projects, suggesting that, in this context, credible commitment was ultimately a matter of political processes rather than institutional

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structures. The paper will show that successful exclusion of imperial influence before the 1830s and the particular conditions of Jamaican society both enabled and encouraged white elites to raise large sums of money in this period and funnel them into the maintenance of a military garrison intended to deter slave revolts, using the new data-series to quantify for the first time the extent of this contribution. It will demonstrate that this process not only secured the plantation system but also created a wave of economic activity that trickled down into the island through local contractors and helped to support the diversification of its economy. This article will therefore conclude that the process of creating credible commitment for public finance in a colonial context was ultimately the product of political confrontation, and that the political economy of Jamaican taxation in this period embodied this important dynamic.

**Keywords:** Caribbean; eighteenth century; colonial; state formation; credible commitment.
I/D Growth and Inequality

Christian Stohr (London School of Economics)

Mountains, clusters, and cities: regional inequality in Switzerland, 1860-2008

This paper elaborates new estimates of regional GDP and labour productivity in Switzerland. I analyse regional inequality on three geographical levels: 97 micro-regions, 16 labour market basins, and 3 large regions, where higher-level regions are aggregates of lower-level regions. The highest level is defined along topographical contrasts; the intermediate level is sensitive to differences in regional factor endowments; and the lowest level captures agglomeration effects distinguishing central places from hinterland regions.

For the manufacturing and service sectors the estimates are based on highly detailed employment data and national labour productivity estimates by industry. In earlier periods the data covers 29 manufacturing industries and 10 service sectors; and for later periods it covers 24 manufacturing sectors and 23 service sectors. For the agricultural sector I combine detailed land use and cattle censuses with national value added from different crop cultures, milk-, meat production, and cattle breeding.

The general trend on all three levels is convergence of aggregate labour productivity until 1990 and divergence thereafter. However, this general trend hides a few important subtleties. Therefore, I decompose regional inequality along different dimensions. Between 1860 and 1930 convergence is mainly driven by structural change between sectors, whereas from 1930 to 1990 declining productivity differentials within the three sectors drove convergence. Divergence after 1990 was due to increasing differentials within manufacturing and services.

Regional productivity differentials were largest in agriculture and weakest in services. Agricultural inequality followed a bell-shape evolution, although it remained high even in the late twentieth century. Inequality is most visible between topographically defined regions. Arguably, the transformation of agriculture during the second half of the nineteenth century implied regional specialization constrained by topographical characteristics.

Inequality in manufacturing evolved in waves with increases during the Belle-Epoque, the postwar boom, and after 1990. These waves were driven by the intermediate-level component. This suggests that factor endowments determine regional specialization, which affects inequality when growth accelerates in some industries.

In services, inequality follows a bell-shape pattern until 1980 and divergence thereafter. Until 1980 this evolution is driven by the lowest geographical level, and thereafter by the two lower levels. This suggests that productivity in services was most sensitive to agglomeration effects in urban regions and large metropolitan areas.

This paper contributes to the elaboration of sub-national GDP measures (Geary & Stark 2002; Crafts 2005; Geary & Stark 2015; Schulze 2007; Enflo et al. 2010) and to the study of regional inequality (Williamson 1965; Kim 1998; Martínez-Galarraga et al. 2013; Enflo & Rosés 2015). Switzerland is an interesting case study because it combines important disparities along different dimensions. The paper innovates by including three levels of regions revealing that different mechanisms operate at different geographical levels. Regional inequality has long been a hot topic in Swiss politics, public opinion, and research (Piveteau 1974; Frey 1985; Frey 2008) but the necessary data for a thorough long-run analysis of the problem has not been available so far.

Keywords: regional GDP; productivity; regional inequality; inequality decomposition; Switzerland.

References
Francisco J Beltrán Tapia (University of Cambridge), Alfonso Díez-Minguela & Julio Martínez-Galarraga (Universitat de València)

Tracing the evolution of agglomeration economies: Spain, 1860-1991

Agglomeration economies refer to the benefits that come when firms and people locate near one another. In a seminal contribution, Krugman (1991) showed that, through a process of circular causation, the interaction between agglomeration economies and relatively low transport costs leads to the concentration of economic activity in a limited number of locations. This model also implies that initial conditions, such as population density, are self-reinforcing, thus stressing the role of history on economic geography. Following recent studies (e.g. Dobkins and Ioannanis 2001; Combes et al. 2010), this paper attempts to quantify the effect of agglomeration economies on population growth and how this effect has evolved over time. In order to do so, we have built a panel dataset that traces the evolution of the population of 471 Spanish districts between 1860 and 1991. The data, taken from the population censuses, is recorded approximately every decade (in total, the panel dataset comprises 13 time-periods). Given that the growth of a particular location not only depends on its own economic dynamism but also on that of competing neighbouring population centres, this dataset also incorporates the existence of important neighbouring locations using GIS techniques. The period under analysis witnessed major structural changes (e.g. increasing market integration, industrialization, etc), so it is very unlikely that the relationship between the forces at play remained constant throughout the period. This paper thus assesses how the effect of agglomeration economies on population growth have evolved over time and what are the potential mechanisms explaining those changes. Likewise, due to congestion and pollution costs, agglomeration economies are subject to diminishing returns, so this contribution also explores how agglomeration economies depend on district size.
References

Max-Stephan Schulze (London School of Economics) & Paul Caruana Galizia (Humboldt University Berlin)
Empires diverging: A spatial analysis of Habsburg and German Regional GDP, 1870-1910
This paper examines patterns of regional convergence and divergence in and across the late nineteenth-century Habsburg and German empires – two economies that were both characterized by profound regional differences in geography, resource endowments and incomes. Although displaying broadly similar levels of aggregate economic development in the early nineteenth century, in terms of per capita product the Habsburg Empire and its economically more advanced Austrian half fell well behind their German neighbour over the course of the century. However, it can be potentially misleading to think in terms of diverging national economies (countries) when sub-national (regional) inequalities mean that more similarities can be found inter-nationally than intra-nationally. Hence the focus here is on the regional dimensions of aggregate economy divergence. Drawing on new GDP estimates for 45 regions across Austria-Hungary and Germany, we, first, ask to what extent German and Habsburg regional GDP inequality levels differed. Second, we use basic spatial analysis to address the question of whether economic change across the regions of Central Europe was characterized by the formation of spatial clusters and whether these extended across national boundaries. The new evidence suggests cross-border clustering and significant income divergence both within such clusters and between them, pointing to the emergence of ‘clubs’. Further, our findings point to persistent proximity effects – the farther away from centres of economic activity and technological and industrial advance, the less likely an area is to industrialize itself.

Keywords: convergence and divergence; Habsburg Empire; Germany; regional GDP; regional inequality; spatial clustering.

Leandro Prados de la Escosura (Universidad Carlos III de Madrid)
International inequality in living standards, 1870-2007
Has international inequality in living standards cumulated since globalization began? This relevant question is recurrently raised. Answers, however, rest almost exclusively on GDP per head, despite the widespread claim that well-being is multidimensional.

This paper attempts to provide an answer using a capabilities approach to address this question as well as other relevant ones such as: Do inequality trends in well-being dimensions concur? Do well-being dimensions alter the view on long-run inequality derived from real per capita GDP?

The paper explores measures inequality and polarization in health and access to knowledge and compares them to that of income per head on the basis of a new set of well-being indicators including life expectancy, education (literacy and enrolment), real income, and human development.

In the present state of the art, it is not possible to derive within-country inequality measures for each dimension considered for a large enough sample across space and time. Fortunately, for the purpose of the paper, empirical evidence for the late twentieth century
suggests, however, that inter-country inequality provides a lower bound for ‘world’ inequality.

Over the entire time span considered, 1870-2007, 95 countries are considered, and its number rises up to 103, 138, and 156 countries for the samples starting in 1913, 1950, and 1990, respectively. These samples represent above 90 per cent of the world population (and practically all after 1950).

Some (preliminary) findings can be summarized as follows:

- Inequality in living standards declined since globalization began while substantial gains in well-being were achieved.
- Inequality trends in well-being dimensions concur.
- Well-being dimensions alter the view on long-run inequality derived from real per capita GDP. Longevity and education improved in globalization backlash. As a result, inequality in social dimensions declined (especially over 1920-70) while income inequality increased.
- Polarization declined over the long-run for both income and social dimensions.
- The diffusion of the health transition(s) drove inequality in life expectancy.
- China and India have had a major influence on inequality trends.
- The decline in human development inequality was driven by education and life expectancy – the latter during the early health transition.
- The reduction in the gap between the West and the Rest was the main driver of total inequality reduction in human development up to 1970, while the reduction of inequality within the Rest represented the main driver of the slow reduction in human development inequality since 1980.

**Keywords:** international inequality; living standards; life expectancy; education.
I/E  Cameralism in Practice: The Principles of Early Modern State Administration

Martin Seppel (Tartu University)
*Cameralism: a success or failure in economic thought?*

The introductory paper in this session will look more closely at conceptual questions about cameralism and discuss some of its most important effects. It seems to be appropriate to speak about a ‘cameralist turn’ if we look at the change in the principles of governance from the last third of the seventeenth century to the mid-eighteenth century. It was a significant turning point in the process of state building when the state started to emphasize the sustainability of the population and state resources in the name of the state revenues and power. However, some of the latest research (e.g. Wakefield 2009) has shown the other side of cameralism, stressing its idealized character and cynical aims.

Keith Tribe (Independent scholar)
*Baltic Cameralism*

While cameralist teaching was primarily developed in the course of the eighteenth century in the universities of Northern Germany, it also gained a foothold in Sweden (Uppsala, Åbo/Turku) and Denmark (Copenhagen), and quite probably in other institutions fringing the Baltic. The initial objective of this essay is to explore the geographical reach of this teaching and the form that it took in the Baltic region. In Northern Germany, cameralist teaching was primarily oriented to the administration of domain lands and the general welfare of a population, which is probably also true of the Baltic. However, the Baltic was throughout the eighteenth century an important trading area, the prime source of masts, pitch and hemp for the British Navy, which was the most significant economic enterprise in the British economy by employment and consumption of resources. While there is some literature on the Baltic trade from the British perspective, this essay will also examine the prospect of an ‘export-oriented Cameralism distinct from the Northern German variety, where the focus of attention was exclusively domestic.

Göran Rydén (Uppsala University)
*Between the divine and the individual: eighteenth-century Swedish iron making and layers of household practices*

Swedish cameralist writers often imagined society in three different, but related, layers. At the top of the structure was the all-encompassing Divine household, with a benevolent God at the helm of his creation. In a mid-section we find the ‘Common’ household, circumscribing the politically defined countries, while the base of the structure was imagined as a mass of Individual households. Writers, like the first Swedish professor of economy (Anders Berch, 1711-74), devoted most of their efforts to scrutinize the Common household, and modern scholars have followed suit, but it is essential not to forget that these analyses were always inserted in a much wider worldview, with divinity and individual people. The aim of this paper is to discuss how these different levels were related to each other, and how perceptions and practices of work and labour were crucial in this. The aim is, further, to make a case for including more layers within this structure. The empirical focus in my contribution is the iron making communities, so called bruk, in central Sweden, and their perceptions of the oeconomy, the s.c. Brukshushållning.
I/F Social Infrastructure

Nicola Tynan (Dickinson College), Brian Beach (College of William & Mary) & Werner Troesken (University of Pittsburgh)

Who should own and control urban water systems? Disease and the municipalization of private waterworks in nineteenth-century England

Nearly one third of England’s more than 300 privately built waterworks became publicly owned by 1910. Although advocates of municipal ownership argued that the transition to public ownership was associated with sharp reductions in waterborne disease rates, particularly typhoid fever, thus far economic historians have been reluctant to attribute a causal relationship between disease and ownership regimes (Falkus 1977; Hassan 1985). Using newly digitized data on waterworks ownership, we study the extent to which public acquisition affected deaths from typhoid fever. We pair detailed waterworks information with annual district-level typhoid fatality rates for the period 1869 to 1910. Exploiting variation in the timing of municipalization, we find that deaths from typhoid fever fell by approximately 19 per cent in the years following municipalization.

Although a large body of previous research has explored how the switch between public and private ownership affects waterborne disease rates, that research yields conflicting results and is limited to the United States (Troesken 1999, 2001) and Argentina (Galiani et al. 2005). One potential challenge facing researchers seeking to identify the effects of municipalization or privatization is that changes in ownership are not randomly assigned. When a change in ownership regime follows an epidemic, mean-reversion might confound identification. Our relatively long time period and the large number of cities in our sample allow us to explore this concern. We find that epidemics are not persistent suggesting this is not a challenge to our findings. When placed in the context of the current literature, our results suggest that the efficacy of any ownership regime may depend on the broader economic and institutional setting.

Our research contributes to an understanding of the causes of Britain’s mortality decline during the late nineteenth century. Szreter (1992) attributes the largest quantitative decline in mortality to public health measures, one of which is increased municipal responsibility for water provision. There was no coordinated movement for municipal acquisition, as towns typically responded to local concerns at different times, and mostly acquired waterworks by agreement. Clusters of acquisitions, however, did follow significant pieces of legislation, particularly the 1875 Public Health Act and 1894 Local Government Act, which provided towns with the authority and means to municipalize.

References


Bernard Harris (University of Strathclyde) & Andrew Hinde (University of Southampton)

Public works loans, social intervention and mortality change in England and Wales, 1850-1914

In an earlier paper (Harris and Hinde 2014), we examined the influence of public works loans on changes in mortality in England and Wales during the late nineteenth and early twentieth centuries. These loans appeared to have had very little effect on the decline of mortality from enteric fever and diarrhoeal diseases in 13 ‘high-performing’ districts, and they only had a limited effect on changes in mortality in 32 areas which borrowed varying sums of money between 1871 and 1900.

Our analysis was confined to the loans which were requested by urban sanitary authorities and sanctioned by the Local Government Board (LGB) under the Public Health and Local and Confirmation Acts. As the LGB was only set up in 1871, any loans which were contracted before that date were excluded. Since we know that mortality from typhus and enteric fever declined substantially before this date, we cannot exclude the possibility that earlier investments in water supply and sanitation had an important effect on the rate and timing of mortality decline from these causes.

This issue is important in the context of the debate about the causes of mortality decline in the second half of the nineteenth century. Simon Szreter (1988: 22) argued that it was not until ‘the last 30 years of the nineteenth century [that] ... most of the significant improvements and works of construction and concrete applications of preventive health measures went forward’ and that this chronology corresponded very closely to the most important improvements in mortality. He characterized the previous 40 years as a ‘heroic age’ in which public health entered the political consciousness, investigations were mounted and legislation was enacted, but also as one in which rather little was actually achieved.

However, it is clear that loans for public works were being requested and sanctioned from a much earlier period. This includes the loans requested under Local Acts from the eighteenth century onwards, together with those sanctioned by the General Boards of Health and the Privy Council between 1848 and 1871. The current paper extends our previous analysis by looking at the value and distribution of these loans and at their potential impact on the decline of mortality from the 1850s. It also extends our analysis of the role played by local authority loans after 1870 by including the loans sanctioned by the LGB under other Acts, as well as those approved under Local Acts from the 1870s. This new information will provide a much fuller picture of the full range of loans contracted by local authorities during this period and a fuller test of their impact on mortality change.

References


Lars Fredrik Andersson & Liselotte Eriksson (Umeå University)

Voluntary or compulsory? Exploring dynamics of mutual cooperative formation in Swedish health insurance at the turn of the twentieth century

Loss of income due to sickness was one of the greatest risks to wage-earners’ standard of living during the nineteenth and early twentieth century. On the emerging industrial wage-labour market, family-insurance strategies fell short in mitigating wage earners’ income losses. Public insurance was limited to poverty relief and market-based labour insurance was absent. By pooling the risk of wage-income losses due to sickness, mutual health insurance societies became an attractive form of working-class insurance.

Lars Fredrik Andersson & Liselotte Eriksson (Umeå University)

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Voluntary mutual societies designed to aid their members in the event of sickness or death were established throughout the western countries in the eighteenth and nineteenth centuries. Figures from the U.K. and the U.S. shows that the co-operative self-help movement included a substantial part of the workforce at the turn of the twentieth century. Mutual health insurance societies had important advantages in relation to market based insurance during the process of industrialization. Due to the intrusive methods of monitoring, health insurance societies were able to respond effectively to two classic problems in sickness insurance: the issues of moral hazard and adverse selection.

While previous studies on health insurance have addressed information asymmetry issues in fraternal, voluntary health insurance on the one hand and factory based compulsory health insurance societies on the other hand, no research has compared the two forms of insurance and their efficiency in controlling for moral hazard and adverse selection. To address this issue we will focus on Swedish occupational health insurance societies that was both organized on voluntary and compulsory basis. By comparing the outcome in terms of sickness in the two forms of organization, this paper can empirically examine the scope of moral hazard in relation to adverse selection and, more importantly, compare the advantages/disadvantages of mutual cooperative formation with compulsory factory schemes.

The study will be based on the rich qualitative archival records and quantitative statistical reports of Swedish health insurance societies. The study focuses on occupational societies during the period 1901-10; a period where the Swedish health insurance system was in the making and organized along both mutual, voluntary, fraternal principles and compulsory, ‘factory scheme’ principles.

John Taylor (University of Liverpool)

Surviving the war: the funding of British higher education in the First World War

The outbreak of the First World War in August 1914 had an immediate impact on British universities. As existing and prospective male students enlisted, total enrolment was reduced sharply. Most universities relied heavily on fee income from students and immediately faced a financial crisis. Based on a detailed study of administrative and financial papers from six universities and government records held in the National Archives, this paper examines the steps taken by universities and the response of government, and highlights both short-term consequences and long-term implications.

The paper begins with an examination of university finances immediately before the War, a topic that has received very little attention from economic and social historians. The impact of the War is then considered in detail, especially the threat of institutional closures and the search for financial savings. Other sources of income, especially from endowments and local authority grants, are also analysed. Against this background, the reaction of government is studied, especially the debates over whether assistance was justified. After 1916, attention begins to shift towards the funding of higher education after the end of the War, culminating in a momentous, yet little known, meeting between universities and the Chancellor of the Exchequer in November 1918 that led to the establishment of the University Grants Committee (UGC) and helped to shape the funding of higher education for much of the twentieth century.

The War also prompted a new emphasis on the research function of universities, both working in partnership with government and with business and industry. In the context of the changing financial management of universities demanded by the War, the paper looks at how such work was funded, especially associated issues of tax exemption, and how the ownership of ‘intellectual property’ was considered.

The paper sheds new light on the increasing dependence of universities on funding from government and on the growing recognition within government that universities had a ‘public’ role, both contributing to the development of a skilled workforce and providing knowledge that would underpin economic reconstruction after the War. The debates on
funding arrangements to be adopted during and after the War were, in effect, discussions about the autonomy of universities and were a precursor for ongoing arguments throughout the twentieth century.

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Industrial Change and Development in the Twentieth Century

Zhudyzbek Abylkhozhin (National Academy of Sciences of Kazakhstan) & Gani Aldashev (Université Libre de Bruxelles)

The effectiveness of land reforms in traditional societies: Central Asia in the 1920s

A key debate in development economics concerns the effectiveness of large-scale land reforms for raising land productivity and reducing poverty. Economists have documented numerous examples of reforms that failed (e.g. pre-1978 China, Tanzania, Zimbabwe) together with some cases where reform was successful (mostly in India, in particular in West Bengal). However, successful cases are generally rare in the history of developing countries. Which aspects of developing societies hamper the effectiveness of land reforms? Economic history can provide insights into this problem by contributing numerous cases of reforms from earlier periods, in widely differing settings.

One interesting hypothesis is that traditional pre-reform institutions that permeate the economic relationships in rural areas clash with the logic of land reforms that, by redistributing the key productive assets, might fundamentally change the power structure in local contexts. In this paper, we focus on the role of traditional institutions of clan-based solidarity, and exploit the detailed micro-level data we collected from the Russian statistical expeditions in early twentieth-century Central Asia and the series of agricultural reforms implemented by the Soviet government during the 1920s. This case is particularly interesting as it allows us to combine detailed micro-level information with several large-scale reform attempts that differed substantially in terms of reform contents.

We start by documenting the functioning of clan-based traditional institutions among nomadic pastoralists and sedentary Central Asian peasants, focusing in particular on the informal-insurance and redistributive role that these institutions played during the period under study. We illustrate the quantitative importance of these roles using the data from the Russian Imperial statistical expeditions of the early twentieth century.

Next, we describe agrarian reforms of the 1920s, focusing on both the factors that triggered them and on describing their content. We also explore the Soviet government’s motivation behind them. In particular, we address the political goals of weakening the feudal structure that remained essentially intact in the aftermath of the 1917 Revolution. These political objectives of the reforms are compared with analogous reforms in other developing-country traditional-institution contexts.

We then analyse the effect that the reforms had on the economic behaviour and outcomes of Central Asian pastoralists and peasants. In doing so, we compare the expected effects of reforms by the authorities that implemented them with the realized effect. Finally, we provide economic explanations for the reasons behind the failure of these reforms. The main theoretical mechanisms that we identify are two: (i) the trade-off faced by the poorer strata of the society between the low-return and low-risk traditional economic structure, and the higher-return new agricultural organization that involved substantial risks of failure; and (ii) the (unfulfilled) need for new coordination mechanisms and cooperation among members of society that were not linked through clan networks. We conclude by discussing the relative importance of these two channels, using both quantitative and qualitative data.

Jim Phillips (University of Glasgow)

Generation and changing economic order in the Scottish coalfields from the 1920s to the 1980s

This paper applies a generational analysis to explain the changing political economy of the Scottish coalfields, from the private and liberal order of the 1920s, where trade union voice was radically circumscribed by authoritarian management, to the social democratic order of the 1960s, where joint industrial regulation was embedded in the coal mining sector, publicly-owned from 1947 to 1994. The paper analyses the linkage between changes in coalfield economic order and the formative experiences of three identifiable generations of miners’ representatives. The paper brings together existing literature, employer and union records, including pit-level data from the 1950s to the 1980s, and uses interviews conducted by the author with members of the youngest of the three identified generations.

Analysis is structured by the identification of three successive forms of economic unit in the coalfields. Each represented an ever larger economy of scale, and substantial qualitative changes in coalfield employment. ‘Village Pits’ – my designation – opened in the late nineteenth century were larger than earlier units, concentrating upwards of 500 miners. Many survived much of the twentieth century, but their relative importance was superseded in the 1920s and 1930s by ‘New Mines’, this term adopted from an important industry publicity film, employing up to a thousand miners, and then by post-Second World War ‘Cosmopolitan Collieries’, each massing upwards of two thousand workers. The ‘Cosmopolitan Collieries’ label was widely used within the industry in Scotland from the 1960s to the 1980s, denoting the coming together in one workplace of miners from a widened geographical locale, with sometimes highly differentiated prior experience in terms of geological conditions and production methods. These successive changes in the predominant form of coalfield economic unit shaped distinct generations of trade unionists. The emphasis is on formative experience: how mining trade unionists were shaped as young men by their workplace environment. The paper is more, however, than a study of trade union leadership. The identification of distinct generations of miners’ representatives also illuminates the changing economic and political priorities of the cross-generational body of miners who elected them, and thereby the manner in which economic and political order in the coalfields evolved across the twentieth century.

The changing organization of production is a relevant element of this analysis. New Mines, larger than Village Pits, were superior in amenity and environment, stimulating greater collective self-confidence and expectations among mining trade unionists and the workers they represented. This prepared the political ground for nationalization, but pits closed and jobs were lost at an accelerating rate after employment peaked in 1956-7. In these circumstances the New Mine generation of representatives pushed the Village Pit veterans to extract greater concessions from policy-makers, notably the establishment of the Cosmopolitan Collieries, opened with huge reserves and fully-mechanized production. New factories were also established in the coalfields. These provided work for redundant miners and women too, and changing gender relations were a further element of the changing economic order. The strike of 1984-85 was an unsuccessful defence of the social democratic order. The Cosmopolitan Colliery generation pressed the New Mine generation to help protect economic resources and communities against the threat of a further new order, characterized by market liberalization, privatization, anti-trade unionism and deindustrialization.

Formative experiences in the workplace are examined in their broader economic and political contexts. The distinct generational groups were embedded in particular lived, social and global experiences. The social character of their residential localities – or communities – is relevant, as are the prevailing economic and political conditions and realities of their youth. The emergence and evolution of the Communist miner in Scotland from the 1920s to the 1980s reflected a variety of social and political factors, including housing conditions and the impact of world events, from the First World War onwards. But the purpose of this analysis is to explain changes in the broader political economy of the coalfields and the attitudes of the
miners who followed, supported and elected Communist representatives from the 1920s to the 1980s. So the emphasis here, while acknowledging broader social influences, is primarily on the workplace and the organization of production. The generational representatives entered their adult worlds as workers. They were coal miners before they were trade unionists. Strikingly, the three generations were employed mainly within the three distinct types of economic unit, the establishment of which coincided roughly with their arrival in the world of work. So the organization of production is positioned as a significant distinguishing feature of the formative experiences of the three generations of representatives. Emphasis is placed on changing scale and ownership of production units, and attention paid to advances in mechanization and improvements in welfare and amenity provision within the mines. These aspects of production are emphasized, again, as factors in constructing changing economic and political priorities among the broader mass of the miners – whatever their age – who worked in these different types of unit, and who elected the representatives whose formative workplace experiences were in these different types of unit. These changes in the organization of production shaped the pattern of industrial relations and the politics of the leadership and the cross-generational body of miners that they represented. Ownership, production regime and the broader ‘order’ structured the formative ‘interior time’ which the generational representatives took as their subjective reference point when making sense of developments later in their working and political lives. A recurrent theme is that of the cross-generational gap, as each emergent generation of representatives challenged the priorities and leadership of its predecessor.

Cristiano Andrea Ristuccia (University of Cambridge)
Saved by the British Empire: how the U.S. escaped the Great Depression

This paper presents a new set of data on installed machine-tools in the metalworking sector that goes a long way in remedying the long-standing knowledge gap on the evolution of U.S. installed capital over the late 1930s and early 1940s that has crippled analyses of productivity dynamics in the central part of the twentieth century. On the basis of these new data I challenge recent positive assessments of productivity in the 1930s (Field 2011), and re-formulate the case for the central contribution of the Second World War to the end of the Great Depression on the basis of an export-led supply boom.

Keywords: productivity; great depression; Second World War; capital input; machine tools; U.S. growth in the twentieth century; machinery hypothesis; metalworking; growth accounting.

Fabio Lavista (Insubria University)
Structural policies, regional development and industrial specialization: the Italian case, 1952-2002

The paper is the first output of ongoing research aimed at providing a deep insight on the evolution of the industrial specialization of European countries from the Second World War to the establishment of the European monetary union. The research intends to compare the development of European industries and to analyse the processes of convergence and divergence of their structures in the long-run, considering the latter as a consequence of both the progressive integration of the European market and the adoption of different macroeconomic policy regimes, a mix of economic cultures, policies and institutions. In particular, it aims at analysing the correlation between different institutional environments, firms’ performances and the diverging industrial specializations of European countries, measured by a unique index for the whole period.

Given this framework, the paper will present the research and will focus on the Italian case, analysing the evolution of the structural policies adopted by the Italian governments from the beginning of the 1950s to the 2000s and their effects on the structure of the Italian industry. From the mid-1950s the Italian government, taking advantage of international aids,
started to design developmental interventions, focusing in particular on the underdeveloped southern regions. These interventions aimed at providing the physical capital needed to induce an industrial take off. They acted through the modernization of infrastructures, the design of an incentive system and the direct intervention of state owned enterprises, which played a major role, together with some regional planning agencies and special public financial institutions. From the mid-1950s to the beginning of the 1960s the main focus was on infrastructure endowment, during the subsequent years the emphasis was placed on the possibility of starting a process of heavy industrialization, in particular in the steel and in the chemical sectors. In the course of the next decade attention was paid to high technology industries. The political constraints derived by the peculiar institutional framework, the effects of the international crisis, that followed the oil shocks of the 1970s, and the changing macroeconomic environment at the end of that decade heavily influenced the outcome of these structural policies.

The paper underlines these interactions and their effects in term of industrial specialization showing how the need to preserve employment levels in an increasingly unstable economic environment, along with growing financial constraints, heavily influenced the possibility to define effective policies aimed at the modernization of Italian industry, with long-term consequences on its structure. In the end some more general conclusion on the link between institutional changes and industrial specialization are drawn.
I/H  Trade and Finance

Paolo Di Martino (University of Birmingham), Alberto Rinaldi & Barbara Pistolesi (Università di Modena e Reggio Emilia)

International financial flows, domestic credit intermediation, and industrial growth in the periphery of the gold standard regime: evidence from Italy, 1861-1913

The role of international capital flows in fostering growth in the periphery has a pivotal part in the literature on the functioning of the classic gold standard (1870-1913). One feature of such standard literature is that the periphery of the system is seen as a mere extension of the core assuming, for instance, that the gold standard rule took the same form everywhere, although with varying degrees of success. A growing body of studies, however, argued that what we call the gold standard was, in the periphery, a collection of diverse and complex mechanisms, spanning from unconvertible paper money with convertible public bonds, to ‘shadowing’ of the system without formal adherence to it, to the use of bi- or even tri-metallism. It is an open question, then, how these different forms impacted on the ability to attract international investment, also taking into account Flandreau’s critical view of the gold standard “as the good housekeeping seal of approval” idea. Further, it is another open issue the role of domestic credit institutions in channelling such financial resources and/or to respond to the challenges of exogenous expansions or contractions of financial supply.

Italy is a good case-study to start addressing such questions. Firstly, during the classic gold standard era the country experienced a number of different situations, from metallic convertibility in the 1860s and 1880s (but with severe breach of the ‘rules of the game’) to full floating in the 1890s, to informal adherence since 1900. These changes are meant to have had an impact on credit import. The exact weight of this variable on the process of industrial growth, however, is in itself at the centre of a debate. On the one hand, various studies by Fenoaltea pointed out the key role of capital import in shaping the pattern of industrial growth; on the other hand an older qualitative tradition suggested that domestic credit intermediation was in fact the key variable at play.

This study aims at looking at these open issues using a quantitative approach. The paper first uses econometric techniques to establish the relationship between financial variables and the pattern of industrial production and aggregate investment. Further, it analyses the provenience of credit support, distinguishing between domestic and international sources, providing a new series of capital import derived from other published data and analyses it in relation to data on industrial production. Provisional results suggest a strong connection between the attitude of the Italian banking sector (in terms of ratio between investment in public and private assets) and the pace of industrial growth. Such policy is, in turn, correlated to international capital flows. However, while in the 1880s capital import mattered, this was much less the case in the 1890s and 1900s when migrants’ remittances provided most of the liquidity for investment. Adherence to the gold standard helped the inflow of international capital in the 1880s, but in the following decades financial flows became independent from monetary conditions.

Keywords: gold standard; international capital flows; banking and finance; credit intermediation.

Rui Esteves (University of Oxford) & Florian Ploeckl (University of Adelaide)

Gold and trade: An empirical simulation approach

The global economy from the second half of the nineteenth century until the First World War experienced two major trends in international trade and finance. The First Globalization led the fast growth of world trade, characterized by an expansion of the range of goods traded as well as the countries involved into the global system. Similarly, monetary systems in many countries were directed towards the adoption of the gold standard, which became one of the
mainstays of the international financial order. Many authors have attempted to identify the causal relation between trade and monetary systems.

The adoption of the gold standard could enhance trade volumes through a reduction in transaction costs, for example exchange rate volatility (Lopez-Cordova and Meissner 2003, Flandreau and Maurel 2005). Its status as a ‘Good Housekeeping Seal of Approval’ could also have indirectly affected trade as counterpart to foreign investment and greater macroeconomic stability. However, it is also likely that a reverse mechanism applied. The increase in trade relationships between countries potentially influenced the ability of states to change their financial system and peg to gold (Meissner 2005, Bordo and Flandreau 2003). In other words, there is an inherent endogeneity problem with estimating such a relation. Moreover, several gravity studies have emphasized the presence of network effects that swayed the countries’ decision to adopt gold. Identification of causal relations in networks with traditional statistical methods is very hard, in the absence of natural experiments.

This project introduces a new estimation method which allows us to address questions of endogeneity for particular settings in which traditional identification methods are not available or suitable. The paper applies this approach to the relationship between international trade and the adoption of the gold standard during the second half of the nineteenth century, illuminating the role of trade in the development of the international financial system as well as the impact of the international adoption of the gold standard on the trade system of the First Globalization. Our data cover close to 40 independent countries between 1860 and 1913.

This paper investigates this relationship between trade and monetary arrangements and addresses the endogeneity issue by employing a RSiena simulation approach (Steglich, Snijders, Pearson 2010). This method, recently developed in the sociological literature to address questions of influence and selection, utilizes a Stochastic Actor Oriented Model to simulate the development of network structures and behavioural characteristics (Snijders, van de Bunt, Steglich 2010). The method requires a basic network setup, which in our case is built from bilateral trade relationships, and explains the changes in actor behaviour as optimal reactions to the contemporary network structure and the behaviour of other actors. The choice of monetary system (and in particular, the decision to adopt a gold peg) is the behavioural variable simulated in the model.

Jon Moen (University of Mississippi)
Reserves and the common pool resource problem

Reserve pooling was the preeminent tool used during the Panic of 1873 by the New York Clearing House to protect New York banks from runs on deposits. After 1873, suspension of payments and clearinghouse loan certificates became the key tools to stop panics. Wicker (2000) has argued that pooling was a highly effective tool in combatting panics; why it was never used in panics after 1873 remains unresolved. He does note that voluntary collective action was not in the interest of many banks after 1873. Timberlake (1993, p. 201) asserts that reserve pooling would become subject to the ‘economics of the commons,’ with all banks feeling no hesitation to overgraze the common resource. While he provides no direct evidence for this prediction, that pooling was never even tried again suggests that such concerns were foremost in the minds of many bankers in New York City.

I view reserve pooling as an example of a common pool resource as developed by Elinor Ostrom (1990). The pool of reserves in 1873 was created by the potential users, the banks working through the New York Clearing House. For the pool to work, the banks had to deal with several questions. The first was how would reserves be allocated during a crisis? Would they be priced or rationed? Another was how would moral hazard or adverse selection be limited? How would the lending arrangements be enforced and violators punished? Finally, how would new users or the appearance of outside intermediaries whose behaviour could affect the effectiveness of pooling reserves be dealt with?
This paper looks at several issues that will help explain why the New York City banks never used a common pool of reserves to combat panics after 1873. They include the number of banks contributing to the pool, the variation in the size of the banks in the pool, and the concentration of reserves held by banks in New York. These factors are inspired by Buchanan’s theory of clubs (1965). Between 1873 and the Panic of 1907 reserves became more concentrated at the ‘Big Six’ national banks, owing to an increase in correspondent bank deposits from the interior. It is likely that the big banks would be reluctant to pool these reserves, as they felt compelled to meet correspondent demands during the national banking era panics.

The nature of reserves – legal tender, specie, bank notes, etc. – may have also contributed to changes in the willingness of banks to cooperate in pooling reserves. The United States also did not return to gold convertibility until 1879. Before 1879, legal tender notes (Greenbacks) were the reserves that could be paid to depositors. After 1879, specie and legal tender notes were reserves that could be paid to depositors. The reluctance to pool specie reserves may have increased after 1879, as specie was the only medium that could be used to settle international transactions.

There is some evidence of cheating on the pool in 1873. The New York Clearing House threatened to expel members who did not participate in the reserve pool in 1873. Some banks also put legal tender deposits into special accounts, substituting national bank notes in the pool in their place. Under normal conditions national bank notes did not count as reserves. Banks that did not pay interest on correspondent deposits became reluctant to pool their reserves with the banks that did pay interest after 1873.

In further research I will look at the minutes of the Clearing House Loan Committee and New York newspapers for discussion of the limitations of reserve pooling. Until the Panic of 1907, panics did not significantly threaten the New York banks; the nascent reluctance to pool reserves that appeared in 1873 was enough to prevent further pooling arrangements. Clearinghouse loan certificates proved adequate in providing liquidity in these panics. The Panic of 1907 caught the banks by surprise. But even during this last panic the national banks seemed reluctant to coordinate their efforts to issue loan certificates through the New York Clearing House. The common pool problem of bank reserves was not serious enough to be overcome by private efforts until 1907 revealed the extent to which such a pool would be needed if panics got any more severe.

Lucia Coppolaro & Giulio Cainelli (University of Padova)

*Does liberalization promote international trade? An empirical analysis of the Kennedy Round GATT negotiations, 1964-67*

The General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO), are commonly praised – or criticized – for having enhanced the liberalization of trade barriers and the growth of world trade. Yet Andrew Rose (2004a, 2004b) questioned the ability of the GATT/WTO to promote the liberalization of trade policies and favour the growth of world trade. Rose’s contribution stimulated a lively debate about the effects of an institutionalized system on world trade and national trade policies (Gowa and Kim, 2005; Subramanian and Wei, 2007; Tomz, Goldstein, Rivers, 2007; Eicher and Henn 2011; Dutt, Mihov, Van Zandt 2013).

Our paper seeks to contribute to this debate by providing a comprehensive econometric analysis of the effects of the Kennedy Round of GATT negotiations on world trade. The Kennedy Round represents the climax of post-World War II international cooperation and reduction of trade barriers. The Round slashed duties by 35 per cent on average, with about two-thirds of the cuts reaching 50 per cent. We ask whether the tariff reductions implemented as a result of the Kennedy Round enhanced the growth of trade and, consequently, whether GATT played a role in increasing trade.
We provide novelty in terms of data. Both Rose’s study and the following works, with the partial exception of Subramanian and Wei (2007), applied the widely used measure of import duties as share of total imports and total trade for each sample country. In so doing these works underestimated the great unevenness in the patterns of trade liberalization across products. In this paper, we disaggregate international trade by products in order to quantify the effect of a tariff reduction on the imports of a given product. This disaggregation is fundamental in assessing the impact of GATT tariff reductions, as GATT multilateral trading system was less successful at liberalizing trade in some sectors such as agriculture and textiles.

We use a standard ‘gravity’ model of bilateral merchandise imports and a panel dataset covering 105 countries and about 3,000 products. The import and tariff data we use for the disaggregated estimations are obtained respectively from the United Nations Comtrade Database “Standard International Trade Commodity, Revision 1”, (organized on a five-digit basis, for the years 1962-79) and the GATT official publication “Legal instruments embodying the results of the 1964-1967 trade conference” reporting the schedules of tariff reductions implemented by GATT members from 1968 to 1972 as a result of the Kennedy Round.

While Rose (2004) averaged imports and exports, as in Eicher and Henn (2011) our dependent variable is bilateral imports. To appreciate variation across countries from 1968 to 1979, we compare the impact of tariff reduction on the imports of those GATT members that reduced tariffs in the Kennedy Round with those GATT members that did not reduce tariffs and with non-GATT countries. If the Kennedy Round had effected an impact on imports, we expect countries in the first group to have a higher growth of imports than countries from the other two groups.

References
II/A Tools of Credit

James Davis (Queen’s University Belfast)

The use of merchant law in the local courts of medieval England

This paper examines the use and importance of lex mercatoria (merchant law) in the courts of English small market towns during the century and a half after the Black Death. In essence, merchant law was a set of commercial procedures that were important in defining the obligations of sales, debt and contract, as well as outlining a system of speedy, efficient justice that suited the lifestyle of itinerant traders. It had developed in a customary manner from the twelfth century onwards, but there was no precise uniformity in practices. The theory of merchant law procedures, for which historians often look to an early fourteenth-century treatise from Bristol, did not always equate to the reality of its invocation and implementation. This paper examines why certain courts, including manorial courts, referred to and employed merchant law. What were the legal requirements, and what practical advantages were gained, for both litigants and court officials? It was apparently important to be judged by one’s mercantile peers, but the customary procedures also related to the type of acceptable proof and the viability of certain written credit instruments.

A sample of market court and pie powder court rolls are examined from East Anglia (Newmarket, Thetford, Bildeston, Hingham, Heacham, Horsham St Faith, Grishaugh), Sussex (Dumpford), and Cheshire (Halton, Middlewich, Northwich), spanning the fourteenth to early sixteenth centuries. The majority of debt and contract pleas in these ‘market courts’ related to sales credit; they thus give some insight into how low-level commercial relations were handled at this time. The approaches of these local courts towards commercial debts are compared, alongside both direct and indirect references to merchant law. It is clear that the prevalence of claims under merchant law were dependent not only on the type of debt plea and litigants, but also the context and customs of the particular court.

This paper considers the balance between the courts’ practical consideration of merchant law and the extent to which this was more of an exercise in perception and reputation. These small town courts were offering procedures for debt pleas at a time when trade was generally contracting and money was in short supply. Historians such as Pamela Nightingale have highlighted the reduction in credit supply in the fifteenth century, following the general trend of monetary contraction. However, most work on this subject has concentrated on either higher-status mercantile endeavours or else rural courts. The broad networks of sales credit in small market towns have received less attention, except for the case studies of Writtle by Elaine Clark and Loughborough by Dave Postles, even though a significant level of trade was passing through these markets. It is argued here that certain small town and seigneurial courts, designated specifically as curia mercati or pie powder courts, were advertising ready access to the procedures of lex mercatoria. In many ways these small markets were seeking to ape the facilities of many royal chartered boroughs in offering more efficient, rigorous, and merchant-friendly systems of enforcement. Their efforts went beyond the ad hoc use of lex mercatoria in manorial courts and were an attempt, not always successful, to temper concerns about the extension of sales credit in local markets. However, this was apparently a regional phenomenon, with a stronger recourse to merchant law in late medieval East Anglia than in the market courts of northern England.

Chris Briggs (University of Cambridge)

Mortgages on a medieval English manor: Alrewas, Staffordshire, 1327-50

This paper provides a case of study of manorial tenants’ use of mortgage contracts to raise credit. Some 40 individual mortgage transactions were recorded in the Alrewas manorial court rolls of the second quarter of the fourteenth century. Through a close discussion of the relevant court roll entries, the paper will chart the variety of arrangements entered into at Alrewas, and seek to demonstrate the flexibility with which conditional grants of land were
employed. Consideration will also be given to the lenders and borrowers involved in the mortgages and their likely aims and objectives in entering into these arrangements. More generally, and perhaps more importantly, the paper will place the Alrewas evidence in a wider context, by noting that the mortgaging of manorial tenant land appears to have been relatively rare in this period across England as a whole, and perhaps rare too by European standards. The paper will ask why there was such an unusual concentration of relatively sophisticated rural financial transactions at Alrewas. Addressing this question involves a consideration of tenure, lordship, and holding structure.

Matthew Stevens (Swansea University)

The evolution of the bond in late medieval England

This paper surveys the main forms and uses of the principal private financial instruments used in fifteenth-century England, broadly referred to as ‘bonds’ or ‘bills’. While debts incurred via these instruments have often been the subject of study by historians seeking to understand change in the late medieval economy, little labour has been invested in the study of these documents themselves in the decades since Michael M. Postan’s important survey article of 1930, ‘Private financial instruments in medieval England’. Building on Postan’s work, I shall identify broad chronological patterns in the changing relationships between the form and use of simple and complex (or conditional) bonds; the feasance and defeasance terms, values and payments of conditional bonds; and the forms of multiple instruments underpinning single credit transactions. It shall be demonstrated that bonds, while taking a broad variety of forms throughout the fifteenth century, were increasingly streamlined in response to patterns of litigation at common law, with the conditional bonds generally superseding the simple bonds and the use of multiple low-value conditional bonds augmenting the use of single conditional bonds for one larger sum.
II/B Exploring Ideology in Economic and Social History

Amanda Capern (University of Hull)

Historians, religion and economic change

This discussion paper is an attempt to think through some of the conceptual issues that have dominated the historiography of religion in relation to the early-modern English economy and consider their impact on the historical visibility of women. There is a longue durée historiography that has defined the ‘traditional’. It began with Samuel Rawson Gardiner’s characterization of the seventeenth-century British civil wars as a ‘puritan revolution’. Gardiner’s reverence for a man – Oliver Cromwell – stood in for his belief in a generation of gentry men wedded to reform of church and the nation state. The conceptual afterlife of Gardiner’s ‘puritan revolution’ in the Weber-Tawney thesis (The Protestant Ethic and the Spirit of Capitalism [1930] and Religion and the Rise of Capitalism [1926]) and Wallace Notestein’s immensely influential Raleigh lecture (‘The Winning of the Initiative by the House of Commons’ [1924/5]) focused the attention of several generations of historians on the distribution of the property to the gentry and their apparent rise to social and political power at the expense of the ennobled elite. The men of the gentry were studied, endlessly, Namierite style, in works such as Douglas Brunton and Donald Pennington’s Members of the Long Parliament (1954) and Mary Keeler’s huge work of masculine prosopography, The Long Parliament, 1640-1641 (1954) until the men emerged as what R.W.K. Hinton once called ‘a capitalist ring of accomplished wire-pullers who formed the left wing of the Plutopuritans’ (HJ, 1958: 185). It was no accident that John Habakkuk, Joan Thirsk and Lawrence Stone worked so thoroughly on property distribution and redistribution after the civil wars. Lending power to the traditional paradigm all along was an equally powerful historiography on puritans and religion in works that followed in the wake of William Haller’s The Rise of Puritanism (1938) and that found full voice in Christopher Hill’s Marxist recasting of the whole paradigm in The World Turned Upside Down (1972).

This discussion paper will argue that even when women featured in these interconnected historiographies they were not historically visible because all the debates took place within a paradigm which rendered their role supplementary. Theoretically – as Joan Wallach Scott once pointed out – what is the role of the supplement in history? It adds to the whole but does not change it. The paper will also consider emerging historiographies of religion that use space as a new paradigm for analysing geographies of social authority – for example, Nicola Whyte, Inhabiting the Landscape: Place, Custom and Memory 1500-1800 (2008) and Alexandra Walsham, The Reformation of the Landscape: Religion, Identity and Memory in Early modern Britain and Ireland (2012). Do they get around the problem of the supplement? It will be argued that historians can use early-modern women’s religious ideas to unsettle the traditional paradigm of religion and socio-economic change.

Amy Erickson (University of Cambridge)

Rethinking the significance of inheritance and marriage to capital

For at least a quarter of a century, historians have repeatedly demonstrated the significance of property inheritance in the female line, and the central role of marriage in property transfer. Yet historians, as well as the media and the wider public, continue to be surprised by women landholders and women of independent wealth, and to underestimate their prevalence and influence. They are seen as exceptions to be remarked upon rather than integral to the system of property exchange and transfer. What explains the power of ideologies of male landed proprietorship that interpret primogeniture and coverture as reflections of lived experience as well as of a patriarchal paradigm? Both primogeniture and coverture were very real systems, but with a legally limited application, further circumscribed by demographic conditions.

In 1992, Women and Property in Early Modern England was intended to map the legal and social terrain of property transfer to help open a way to change the discourse. This
paper is a review of what a short distance we’ve come in nearly 25 years and why the idea that primogeniture and coverture characterized the past continues to dominate. Not only television history and newspapers, but also academic history continues to rehash the line of ‘look, isn’t it remarkable that women inherited / managed estates / ran businesses / were doing something “non-traditional”’. This paper examines what ‘traditional’ means in the context of wealth transfer and asks who benefits by continuing to believe in that tradition. What purpose does it serve to see women as constantly exceptional, and who profits? What is the mechanism by which an idea of past male hegemony is perpetuated?

One method by which the ‘traditional’ norm is perpetuated is to overlook the contribution of those writing on the subject of gender and inheritance, most of whom are women. Research in psychology demonstrates that academics of both sexes are biased in favour of men. So interview panels rank a C.V. with a male name on it higher than the same C.V. with a female name on it; research councils award grants disproportionately to male applicants; and lecturers create class reading lists heavily biased towards male authors. In a similar way, I suspect that scholars, female and male alike, exaggerate the significance of research by men and downgrade the significance of research by women. In this context it must be ‘normal’ that published research by women on a topic with women at its core can be brushed to the margins by the profession.

This paper considers what might be required to create a ‘new normal’ in the context of property transfer, which incorporates the body of research conceptualizing property transfer as a matrix rather than lineally masculine. It contributes to the panel possible practical ways to rethink oppressively dominant assumptions and start to move on to more realistically inclusive models.

Pat Hudson (Cardiff University)

GDP per capita: an ideological construct

National accounting techniques, developed in the USA, Europe and Australia in the interwar period, and considerably sophisticated since, have become the cornerstone of much research and accepted wisdom both in contemporary global development debates and in economic history. In particular, GDP per capita has become the tool/yardstick of choice in most work that considers comparative levels of economic growth across the world and that attempts to measure the relative economic success or failure of regions and nations. It has also come to dominate research geared to calibrating the changing pace (the timing of acceleration and deceleration) of growth in different countries over many centuries, and hence has come to be instrumental in attempts to identify the casual factors propelling economies forward, or holding them back at particular points in time. Although the difficulties of estimating GDP are much debated before figures are accepted or employed, and although it is widely acknowledged that historical estimates across time and space leave much to be desired in terms both of accuracy and comparability, the notion of GDP as an ideological construct, rather than as an objective measurement tool, is rarely countenanced.

The adjective ‘ideological’ refers to an orientation that characterizes the thinking of a group or nation. Ideological constructs and ideological reasoning, if widely accepted and practised by majority or dominant groups in society (and academia) are rarely perceived as such but enter the mindset, the vocabulary, the ether, of popular understanding and discourse, becoming a form of little-questioned common sense. In this presentation I argue that GDP per capita has developed from being a useful measurement device for restricted purposes, time periods and circumstances to becoming a hegemonic and normatively forceful tool applied to address many questions across diverse time periods and cultures. As such it has contributed to a biased view of the origins and trajectory of global economic and social betterment and hence of the conditions that might promote globally sustainable development in the future.

Because national accounting techniques were developed in the mid-twentieth century to aid macro-economic management in societies that had (generally) industrialized early along
a high capital- and energy-intensive route and without suffering the penalties of colonization and informal empire, measurement tools such as GDP per capita best suit such circumstances and reflect the relative success of pursuing that route rather than other paths that might, through necessity or choice, prove more appropriate for particular parts of the globe and for sustainability over millennia rather than a century or two. GDP best captures the characteristics of economies that have efficient recording mechanisms for taxation and other purposes; that have centralized (often synonymous with capital and energy intensive) rather than highly dispersed (and manual) forms of (lower environmental-impact) economic activity; that have a relatively small subsistence or informal sector; and that have insignificant levels of FDI. It takes no account of the distribution of income or of other measures of societal well-being. It omits time discounting and sustainability considerations. Its continued unquestioned and widespread use by economists and historians closes down debate about alternative measures, restricts our understanding of the timing and causes of change and, above all, limits our vision of what ‘economic development’ is and how it might be directed.
Measuring participation in the probate process: Who made wills in early modern England?

Wills and other probate records, such as inventories, are being used by more and more economic historians, yet there have been few attempts to establish their representativeness. Clark, Cummins, and Keibek have all recently used wills as economic and demographic sources but, for example, Clark’s calculations of their representatives were based on only four prosperous south-eastern counties. More generally, social historians often tend to assume that wills and other probate records were made by only the wealthiest in early modern society, and by extension, that wills are representative of that section of late medieval and early modern society. Neither is true, and the picture is considerably more complex. This paper draws on a national sample of probate indexing to establish rates and patterns of participation in probate at national and regional levels, emphasizing the importance of local recording practices as much as structural economic change.

Probate refers to the whole system for the execution of the wishes of the dead regarding their possessions. In England this process operated through a variegated pattern of predominantly ecclesiastical, but occasionally also secular jurisdictions. Remarkably, the probate system that had evolved by the late fourteenth century changed very little until 1857, with the exception of the short lived centralized probate court of the interregnum. This diffuse system resulted in incredible local and regional variations in testamentary practices and record keeping.

By compiling indices to wills and administrations from all available jurisdictions, we have assembled all the recorded wills, at local, diocesan, and provincial levels, for many counties of England, totalling nearly three million records. Comparison of this probate record with projections for decadal numbers of adult male deaths reveals remarkable variation between regional probate practices. Yet within each jurisdiction proportions of adult males engaging with the probate system remained remarkably stable until the upheavals of the Civil Wars. In many counties of southern England participation hovered around 20-40 per cent of adult males, while in the north and remote regions such as Cornwall, participation was negligible.

The centralization of probate during the interregnum had the effect of increasing recorded participation in areas where it had traditionally been low, and actually decreasing it where it had been high. After the restoration there was markedly less variance between counties with higher and lower levels of probate participation. This highlights the significance of local administrative practices, as much as regional differences in wealth or capital distribution, in determining the recorded level of participation. The social structure of testators was also subject to considerable variation, with humble occupations, such as labourers, representing as many as 40 per cent of testators in pre-Civil war Cambridgeshire. This analysis brings new light, and new possibilities, to the study of one of the most numerous sources of information on the early modern population of England.

The economics of the reconstruction of Catania after the 1693 earthquake

In January 1693, southeast Sicily was struck by a major earthquake (the deadliest in Italian history). Almost fifty urban centres were destroyed, partially or entirely. Catania, the largest city in the area, was the most severely hit. According to the official accounts of the time, it lost 16,000 citizens out of an estimated population of 20,000, and nearly all its buildings were razed to the ground. Following the disaster, Catania became an enormous construction site as houses, palaces, churches, and monasteries were progressively rebuilt.

The objective of the paper is to give a concise analysis of this massive process of reconstruction. The paper will address four questions in particular: What were the preliminary
economic conditions? How long did the reconstruction last? What impact did it have on the local economy? How does Catania compare to similar reconstructions such as London after the 1666 Great Fire, or Lisbon after the 1755 earthquake?

This research draws on extensive archival material, including records of the public notaries, of major families and monasteries, of the diocese, and of the central government. It is based, in particular, on well-preserved series of accounting books that allow us to follow twenty large construction sites for over a century (the cathedral, the monastery of San Nicolò, the monastery of Santissima Trinità, palazzo Biscari, the hospital of San Marco, etc.) These accounting books – that had not previously been studied systematically or thoroughly – are extremely useful, as they keep a record of year-by-year sources of income and expenses (including building investments). The systematic study of the reconstruction of the popular dwellings is more difficult to achieve. Yet, a huge notarial documentation shed light on these too.

The main findings of the papers are that: a) the reconstruction process lasted more than a century, and that it had three main peak periods (1693-97, 1718-24, and 1759-71); b) that there was a great deal of diversity in the way actors managed to finance their building works; c) and finally that the reconstruction contributed, in a number of ways, to the economic boom experienced by Catania in the eighteenth century.

**Keywords:** post disaster reconstruction; eighteenth century; Sicily.

**Ali Coşkun Tuncer** (University College London) & **Gürer Karagedikli** (Middle East Technical University)

‘The people next door’: housing and neighbourhood in eighteenth-century Ottoman Edirne

This paper is the first systematic analysis of property prices and housing market in the Ottoman Empire with reference to the city of Edirne (Adrianople) during the eighteenth century. The study of house prices is essential for our understanding of real estate markets, patterns of urbanization and long-term evolution of living standards. Both theoretical and historical studies suggest that prices of residential properties are primarily driven by two factors: their physical characteristics (i.e. size, style etc.) and their location (i.e. proximity to key centres, access to transport etc.) (Glaeser, 2008; Nicholas & Scherbina, 2013). Despite the importance of the topic, due to the scarcity of data, there are only a handful of systematic studies, which focus on the pre-1800 period with a view to identifying patterns and determinants of housing prices (Casson & Casson, 2015; Raffa et al, 2013; Drelichman & Agudo, 2014).

Housing in the Ottoman Empire has also attracted the attention of economic and social historians both in the context of understanding the structure and organization of the Islamic city and general characteristics of the Ottoman urban life. In his well-known study, Fernand Braudel observed that unlike European cities, at the heart of the Ottoman cities stood the central mosque, shopping streets and the ‘exchange’; and each city had distinct Muslim, Christian and Jewish quarters implying a segmented urban structure (Braudel, 1985: 509). These views regarding the organization of the urban space have also been explored by Ottoman historians for several cities of the empire such as Istanbul, Aleppo, Ankara and Kayseri during the seventeenth and eighteenth centuries (Faroqhi, 1987; Marcus, 1983; Behar, 2003).

In this study, we discuss the dynamics of residential house prices in the Ottoman Empire around these hypotheses with the help of new archival evidence. We limit our analysis to Edirne, which was considered the second capital city of the Ottoman Empire and with approximately a quarter of the population consisting of non-Muslims including Greeks, Armenians, and Jews. Based on c.1000 original Ottoman house sale contracts (menzil mubahâa’ a hîcceti) kept among the registers of the local court (şerîyye sicilleri), we collect information on prices of houses sold over a period of eighty years. Moreover, for each sale,
we identify the physical characteristics of the property, its location, and the profile of buyers and sellers including their gender and religious affiliation. As for the location information, we determine the approximate coordinates of each sale quarter (mahalle) with the help of historical maps, registers and modern georeferencing methods. This allows us to test the impact of some of the key indicators on house prices such as proximity to commercial and political centres. Besides this general location information, our sale records also provide us with a detailed account of immediate surroundings of each property, which can be used to ascertain the religious affiliation of neighbours. By relying on this material, we test the impact of certain type of micro-neighbourhoods on the prices of houses sold and address the question to what extent there was religious segregation at micro-neighbourhood level, and whether micro-neighbourhood was an explanatory factor in determining house prices. Furthermore, our dataset suggests that more than one-third of the buyers and sellers in eighteenth-century Ottoman Edirne consisted of females. Hence, we are able to assess the relationship between gender and house sales and provide a picture of the relative purchasing power of women in the Ottoman city.

After constructing this extensive dataset, we set out to test some of our arguments by relying on standard OLS regression methods. In the first stage of our econometric analysis, we use house characteristics, buyer and seller profiles, location information and micro-neighbourhood types, and we construct a fixed effects panel data model to identify the determinants of house prices. In the second stage, we estimate a hedonic price index to discuss the long-term patterns in house prices in the Ottoman city of Edirne. Our initial findings point out that prices of residential houses were closely linked to their size and their proximity to the commercial centre of the city. Moreover, in line with earlier historical studies, we conclude that the housing market in Ottoman Edirne was significantly segmented as far as different religious groups are concerned, and the cost of switching micro-neighbourhoods across religious groups was considerably high. In other words, when the buyers’ religion differed from that of the micro-neighbourhood of the property, this would require paying a premium as reflected by higher sale prices. As for the purchasing power of different social groups, we suggest that on average women compared to men and Muslims compared to non-Muslims were at the bottom of the property ladder. Finally, our hedonic price index points out that increase in house prices throughout the eighteenth century closely trailed the loss of value of the Ottoman currency.

References
II/D Backwardness and Growth

Bob Allen (New York University Abu Dhabi)

Why didn’t the Middle East industrialize in the nineteenth century?

Between 1870 and 1913, the factory spinning of cotton yarn took off on the European side of the Mediterranean as hundreds of mills were built in Spain, Portugal, Italy, and Greece. Scarcely any mills were built in the Middle East or North Africa. Why the difference? The paper first investigates the markets for raw cotton and yarn and argues that Mediterranean producers all faced similar international prices set by competition in global markets. The basic explanatory approach is the infant industry argument. I claim that when an industry was established anywhere it was very inefficient in terms of its raw cotton consumption, annual production per spindle, and especially in terms of staffing levels. Without a tariff it did not pay to establish an industry in the Mediterranean in the late nineteenth century. Once an industry was established, however, efficiency improved dramatically. To measure this, I concentrate on staffing levels and collect data that show that workers per 1000 spindles declined with national experience. The same function fits many countries, so I claim it would have fit the Middle East too. A model of the rate of return to building a cotton mill is developed to understand why investment occurred in Europe but not in the Middle East. For a country with ‘infant’ productivity levels, investment would have been unprofitable without a tariff. I compute the minimum tariff needed to make the industry profitable. The Italian tariff of 1878 was about the minimum that did the job, although higher tariffs would have been necessary under some other conditions. The Middle East could not have followed this pattern due to the Anglo-Turkish convention of 1838 and the Anglo-Persian convention of 1841, which limited tariffs to 5 per cent (later raised but not by enough). The situation in Egypt was even more dire after British occupation, for the country’s 8 per cent revenue tariff was offset by an 8 per cent sales tax on cotton goods produced in Egypt. The sales tax was intended to nullify the tariff and prevent Egypt from industrializing. The tax worked, but it was not necessary as a higher tariff was needed to make cotton mills profitable. This view of the Middle East contrasts rather sharply with interpretations that attributed poor economic performance to allegedly baleful consequences of Islam.

Ekaterina Khaustova (Russian State Social University)

Real wage rates and economic development in late Imperial Russia, 1850-1917

How backward was the Russian economy in the nineteenth century and how rapidly did it grow? These questions can be studied with historical national income estimates, but these suffer from many uncertainties and are not well tailored to explore many of the possible causes.

I explore these long standing questions with a newly constructed database of annual consumer prices and wage rates for Moscow and St. Petersburg. These data are used to construct real wages in Russia for male and female, skilled and unskilled workers from 1850 to 1917. These are compared to those in other countries. It is shown that the annual wages earned by male adult workers sufficed to sustain a household at subsistence level for the entire pre-revolution period, with the exception of the years 1914-17. International comparisons show that Russian labour-class living standards occupied an intermediate position in the world economy. Theoretical modelling shows that this is the expected outcome implied by the nature of Russian serfdom and by the character of the Russian village in the late nineteenth century.

Keywords: prices; wages; serfdom; labour market; repartitional commune.
Cristián Ducoing & Magnus Lindmark (Umeå University)

Natural assets in the former periphery: Sweden and Chile since 1850

Several economic indicators describe Chile and Sweden as similar economies circa 1850-70; they were main actors in the exploitation of metallic mineral resources, copper in the case of Chile and iron in Sweden. Both countries were characterized by extreme low population density and concentration of the inhabitants in the territories around the capital. Chile had a density around 1.84 inhabitants per square kilometre and Sweden had low population density too (7.7 inhabitants per km² taking into account the current territory, without Norway), with vast sectors in the north of the country with almost no inhabitants. Both states were middle income countries in comparative terms and had enormous natural assets, such as extensive forests, abundant lakes and rivers (water resources in general with central implications in the development of hydroelectricity during the twentieth century) and minerals in the subsoil. 150 years later, both countries have made impressive improvements in their economic development; now Sweden is part of the most developed countries in the world and Chile is a regional leader in Latin America. However, this development has been uneven and non linear and the effects on and by the natural assets of these countries could shed light over the reasons behind the world economic divergence and why the Latin American countries have failed to achieve sustainable development, in terms of ecological sustainability and economic welfare.

In this paper there are four main objectives: the first one is to elaborate new natural asset estimations for Chile and Sweden in the long-run, with the same methodology and using estimators comparable in the long-run for both countries (real prices, share of natural assets in the total income and present discounted values); the second one is to measure the influence of these natural assets in the future well-being and the economic development of both countries. This measure could shed lights over the different paths of development, as has been described by Lindmark and Acar (2013) in the case of Sweden. The third objective is to understand the impact of natural assets and factor endowments in the energy capacity and the energy prices of the territories analysed, using the methodology of Bertoni and Willebald (2015). We will complement this analysis connecting energy prices and capital stock with the theoretical framework proposed by Tafunell and Ducoing (2015). The fourth and last objective is to compare the influence of the mineral exploitation of both countries and the linkages produced by these commodities in the economy. Recent works have shown the main influence by the kind of mineral resources exploited (Badia-Miró and Ducoing, 2015); in the analysis of Chile and Sweden the influence over linkages of the minerals exploited by each one could be the base to understand the main differences of their development paths.

References


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608 In the new estimations by Bolt and van Zanden (2014) the GDP per capita of Chile in 1850 was around SGK 909 and in the case of Sweden this figure was 1076. These estimations are based in the works by Braun et al. (Chile) and Schön and Krantz (Sweden).

609 Also, it could be an improvement to use the methodology described by Lindmark and Andersson (2014) to do better estimations of the capital stock.

610 They compared New Zealand and Uruguay and how their energy factor endowments affected the economic development.

611 In this article there is research about the long-run differences between Australia and Argentina in their capital accumulation over the twentieth century.

**Keywords:** natural resources; economic development; Chile; Sweden.

**JEL codes:** N50; Q32; Q43; Q56.

**Jean-Pascal Bassino** (University of Lyon), **Kyoji Fukao & Osamu Saito** (Hitotsubashi University)

*Making the most of scarcity? Japanese natural assets since the 1870s*

Recent empirical work investigating the determinants of long-run changes in living standards includes attempts by economic historians and environmental economists to estimate time series of the total value of natural assets for European countries or the United States as a component of total national wealth, i.e. comprehensive wealth (CW) (e.g. McLaughlin et al. 2014).

This approach, which has been pioneered by researchers of the World Bank (Hamilton and Clemens 1999), has been initially employed for developing countries and has become a standard approach in the empirical assessment of (weak) sustainability. While the World Bank approach is essentially based on snapshots, studies by economic historians are taking into consideration the economic dynamics of the depletion/conservation of natural assets, and their role in the process of economic development in the long-run.

Estimates of CW are obtained by aggregating the value of natural, human, and produced capital. Genuine Savings (GS) is the net value (negative or positive) obtained by combining changes in stock values of the different components of CW over a given period of time. From a theoretical viewpoint, the relevant indicator of sustainable wellbeing is not a flow (GS) but a stock: the value of CW per capita (Dasgupta 2001, 2009). Population growth results in a ‘dilution’ of CW, particularly its natural capital component (the human and physical capital components can be accumulated at a pace exceeding demographic growth; this is rarely the case for natural capital).

Some issues remain however unsettled or under discussion in the estimation of CW. In particular, Arrow et al. (2013) acknowledge that the standard procedure used for estimating the value of natural assets (and therefore CW and GS) ignores the value of fish stocks due to data limitations; the same remarks apply to the value of other assets such as water or biodiversity. An additional limitation is that there is no clear consensus in the GS and CW literature on the treatment of intangible assets. Another conceptual issue is related to the share of financial capital that is not backed by tangible or intangible assets. Considering the magnitude and volatility of the stock of financial assets, and the intricate linkages between financial assets and natural assets, some clarification is required.

Furthermore, the literature dealing with historical trends in CW and GS does not fully take into consideration institutional and technological changes, and the international economic integration that have affected the access to and the management of natural assets by the different stakeholders in the nineteenth century, during the shift to modern economic growth,
and in later decades. In the context, Japan appears as a particularly interesting case for three main reasons:

Initial (i.e. pre-Meiji) conditions were characterized by an exceptionally efficient use, by the international standards of the time, of very scarce natural resources, especially in forestry, including silviculture (Totman 1989; Saito 2009, 2014). Available evidence suggests that dramatic changes in institutional arrangements introduced in early Meiji had a negative impact on the sustainability of natural assets management, in particular in forestry; institutional changes introduced during WWII also had destructive consequences.

In spite of their scarcity, natural assets played a critical role in the initial phase of Japanese economic transformation, in the late Tokugawa and early Meiji. Silk, tea, and coal accounted for a large share of Japanese exports during that period. The steady rise in land productivity of Japanese agriculture in the late nineteenth and early twentieth centuries enabled feeding a growing population using exclusively domestic resources. The nutritional status of the population improved markedly although import of foodstuffs remained negligible until the 1920s.

Although initial conditions were characterized by extremely resource efficient practices, the adoption and local adaptation of imported technologies resulted in a shift toward a more resource intensive economic development trajectory. The evidence presented by Ayres (2008) and Warr et al. (2010) suggests that, as far as energy is concerned, these changes have been gradual.

Keywords: natural capital; comprehensive wealth; weak sustainability; resource efficiency; biological wellbeing.

References
II/E Neo-Liberalism and the Thatcher Revolution

Ben Jackson (University of Oxford)

Currents of neo-liberalism: British political ideologies and the new right, c.1955-79

It has become a commonplace in commentary on recent British politics that each of the three main political traditions in Britain has been deeply marked by the influence of neo-liberalism. The Conservative government of 1979-97; the New Labour government between 1997 and 2010; and the 2010-15 coalition government between the Conservatives and the Liberal Democrats: each has been characterized as implementing a neo-liberal ideology that has assumed a hegemonic status in British political argument. These governments are said to have been united by their preference for a liberal economic model which relies on labour market flexibility, low direct taxation, and the growing might of the City of London. The importance of neo-liberal ideas to British public life after the 1970s is difficult to contest, but the category of ‘neo-liberalism’ is itself fraught with ambiguities. Used in an ahistorical fashion, it can brush over significant change over time in neo-liberal ideas and neglect the tensions between different strands of neo-liberal ideology. This paper seeks to avoid these problems by drawing on recent research on the history of neo-liberal ideas to investigate the emergence of the British variant of neo-liberalism and to offer a more detailed account of its relationship with the three main political ideologies in Britain.

The paper distinguishes between different currents of neo-liberalism that have been absorbed into British political thought, and shows that this process to some extent pre-dated the electoral success of Thatcherism in the 1980s. The paper further suggests that labelling recent British political discourse as unvarnished ‘neo-liberalism’, while at times analytically useful, simplifies a more complicated picture, in which distinctively neo-liberal ideas have been blended in different ways into the ideologies of British Liberalism, Conservatism and even Labour Socialism. The paper therefore turns the spotlight on a more obscure aspect of the making of British neo-liberalism by exploring how politicians and intellectuals of varying partisan stripes generated policy discourses that presented neo-liberal ideas as an authentic expression of their own ideological traditions. Perhaps the most surprising finding of this paper, then, is that neo-liberalism, although frequently characterized as rigid and dogmatic, has in fact proved itself to be a flexible and adaptable body of ideas, capable of colonizing territory right across the political spectrum.

Aled Davies (University of Bristol)

The political economy of British pension funds: Neoliberalism versus Social Democracy, c.1970-86

Private and occupational pension provision grew substantially in postwar Britain. By 1979 half of the population was a member of a pension scheme. The resulting accumulation of private long-term savings in large funds radically altered the ownership and investment patterns of the British economy. Investment by individuals was displaced by investment by institutions, so that by 1981 pension and insurance funds had become the nominal owners of almost half of all shareholdings on the London Stock Exchange. This paper focuses on the range of political responses, during the 1970s and 1980s, to this major restructuring of British capitalism.

For many in the Labour Party and the trade union movement the pension fund revolution offered an opportunity for the advancement of social democracy in a hostile economic and political climate. Fearful of the concentration of private economic power conferred on the funds the left sought to extend public and/or worker control over their investment decisions. Many trade unions demanded increased representation on the boards of the occupational funds in order to oversee the deferred savings of their members – but also, in some cases, to direct these funds into industrial and social investment. This formed part of an attempt to reconcile the divorce between ownership and control engendered by the
institutionalization of pension saving and investment. At the same time, a number of individuals and organizations associated with the Labour Party attempted to harness the power and resources of the institutional funds in order to help revitalize Britain’s ailing industrial economy. While the Labour Party’s traditional left-wing generally favoured outright nationalization of the financial institutions, moderate Labour figures attempted to align the interests of the funds with the economic welfare of the nation. The most interesting proposal was that made in 1980 by the ex-Prime Minister Harold Wilson, together with a number of senior trade union leaders, for a joint-public sector/institutional fund which would provide loans and equity capital to British businesses.

Supporters of the free market economy within the Conservative Party recoiled at the left’s proposed extension of the state into the nation’s private pension funds. Yet their attitude to institutional pension fund investment was ambivalent and uncertain. On the one hand, the extension of occupational pensions in the postwar period demonstrated the capability of the market to provide welfare in place of the state, and had given millions of workers a stake in the private economy. Yet the concentration of these large funds was vulnerable to left-wing takeover which could provide the mechanism for a massive expansion of public ownership. The inertia and indifference of pension fund members in the face of this threat frustrated the radical ‘neoliberal’ activists and ideologues associated with Sir Keith Joseph and Alfred Sherman’s think-tank, the Centre for Policy Studies. Yet, beyond this vulnerability, they also held a deeper ideological hostility to the institutions. Despite enabling the widespread ownership of capital, institutional investment obscured the direct relationship between the individual and the private economy. Occupational pensions were seen as paternalistic gifts from employers which served to insulate the individual from the responsibility of making their own choices and managing their own risks, and thus served to constrain individual freedom. The political aim of the radical neoliberal associated with ‘Thatcherism’ was not simply to roll-back the state and expand the private sector, but to imbue society with the values of entrepreneurial individualism. This remaking of society was deemed necessary for the long-term stability of the free, capitalist economy – which itself was the only economic system capable of securing individual freedom. To help achieve these aims the Centre for Policy Studies proposed to encourage every individual to take up a personal, private pension – with the long-term goal of dismantling occupational pension funds altogether. This would ensure that individuals had total control over how to save and invest for their retirement. Personal pensions were eventually introduced in 1988, though the radical opposition to occupational pensions was limited by both the practical constraints of Britain’s pensions system, and by more conventional Conservative ministers who saw no problem with good occupational pension schemes in the private sector.

Historians of the political economy of postwar Britain have paid relatively little attention to the massive expansion of private and occupational pensions in the period, despite its substantial and far-reaching effects. The political responses to this pension fund revolution provide us with a unique and important case study of the ideological and political conflicts which took place in the 1970s and 1980s. In doing so it reaffirms the usefulness of framing the period as experiencing a transition from ‘social democracy’ to ‘neoliberalism’, yet it also allows us to understand the tensions and complexities within each of these categories.

The findings presented in this paper demonstrate that individuals and organizations across the Labour Party and trade union movement attempted to adapt to the changing political economy of postwar Britain in the 1970s with a range of new policy ideas. Though they were never implemented, historians should endeavour to rescue the aims, aspirations, and approaches of British social democrats in the 1970s from the ‘condescension of posterity’ to which subsequent Thatcherite (and New Labour) narratives have condemned it.

With regard to the relationship between ‘neoliberalism’ and ‘Thatcherism’ the findings here suggest two key points. Firstly, the attempt to de-institutionalize pension provision reaffirms that neoliberalism was not simply an anti-state, laissez-faire agenda. Its
aim was to reform society by creating citizens equipped with the moral values of entrepreneurial individualism in order to secure the future sustainability of the free market order. Secondly, that these radical neoliberal ideas were closely tied to a relatively small group of committed individuals and organizations associated with the Thatcher government. The ability of these ideologues to dictate the general approach of the government was significant, yet – in this case at least – they did not have total control over the entire policy formation process. The tension between neoliberalism and more conventional Conservative approaches to social policy deserves further study.

Florence Sutcliffe-Braithwaite (University College London)

Thatcherism, housing policy and homelessness

Historians of Thatcherism and of the broader, disparate phenomenon often called ‘neoliberalism’ have frequently commented on Thatcher’s flagship housing policy – the ‘Right to Buy’ council housing introduced in 1980. This paper examines debates within the party between 1975 and the early 1980s about the ‘Right to Buy’ alongside debates about mortgage subsidies offered through the tax system, and the right of the homeless to housing, in order to unpick the influence of neoliberal economics and other factors in the shaping of policy.

As Matthew Francis has highlighted, the ‘Right to Buy’ fitted into a tradition of Conservative thinking about the ‘property owning democracy’ going back to the 1920s. Selling council houses also had an electoral appeal, and privatization helped government finances. But it was not merely such practical considerations which drove home-ownership policy. While the free-market was praised by Thatcherites, in relation to boosting home-ownership it was certainly not to be allowed free rein. This becomes clear when we examine how debates over the subsidization of mortgage-payers were tied in with debates about selling off council housing. Both these things heavily distorted the market. And some free-market economists (such as John Jewkes) argued forcefully against such policies. Yet Thatcher was unmoved by such arguments, highlighting definite limits to her reverence for the free market. While Thatcher was ardently opposed to a blanket subsidy on council house rents, she supported such a subsidy for mortgage-payers, because her deepest commitment was to the promotion of her vision of free, responsible citizens, not promotion of the free market. This, ultimately, was what she thought home-ownership encouraged.

In 1977, the Conservative Party also had to contend with another policy issue: the Labour government was giving parliamentary time to a bill placing a duty, for the first time, on local authorities to find homes for all those in ‘priority’ groups (including all families with children) who found themselves homeless. This was a significant extension of the right of British citizens to a home. Though Hugh Rossi, as the (somewhat ‘wet’) Tory spokesman on housing, did work to achieve a compromise, weakening the scope of the duties placed on local authorities, he did not aim to kill the bill, nor did the Conservatives try to repeal or even significantly alter the resulting 1977 Housing (Homeless Persons) Act until as late as 1996. This paper examines why this was the case, suggesting three reasons. First, Thatcherites found the compromise that Rossi had achieved when the Act was passed made it more palatable. In addition, the high profile of homelessness in the 1980s (increasingly taken as a symbol of all the ills of Thatcherism) made it a touchy subject. But I also suggest that the residualization of council housing that was an unintentional side-effect of the Act fitted into Thatcher’s overall vision of housing. Again, alongside ‘neoliberal’ economics and a desire to cut state spending, a particular moral vision of the virtues of homeownership and the dangers of mass council housing shaped Thatcherite approaches to housing.

612 Matthew Francis, “‘A Crusade to Enfranchise the Many”: Thatcherism and the “Property-Owning Democracy”’, Twentieth Century British History, (2011).
II/F Fertility and Social Engineering

Nina Boberg-Fazlic, Maryna Ivets, Martin Karlsson (University of Duisburg-Essen) & Therese Nilsson (Lund University)

Disease and fertility: Evidence from the 1918 Spanish flu epidemic in Sweden

The 1918 Spanish flu epidemic constitutes one of the largest unanticipated mortality shocks in the history of Sweden. At least 10 per cent of the Swedish population was infected and almost 1 per cent died within the course of a few months. In this paper we study the fertility response to this event, more specifically whether the high birth rates in 1920 and 1921 can be explained by the epidemic. In order to do so, we combine several data sources. We use a complete history of deaths in Sweden as recorded in the church books and combine this with data on health district level. Here we use information on the number of influenza cases as collected by provincial doctors as well as information on the number of births and mother characteristics as collected by the midwives. This allows us to conduct a thorough analysis of the fertility response to the Spanish flu. Our data allow us to distinguish between the effects from mortality and those from morbidity, which may potentially be very different. As for mortality, fertility may respond for several reasons. First, there could be a behavioural response of fertility delay because of increased uncertainty during the epidemic, leading to higher birth rates thereafter. Second, replacement may take place due to higher infant mortality during the epidemic. In the case of morbidity, fertility may again respond behaviourally due to increased uncertainty during the epidemic or biologically through worsened health conditions and higher rates of miscarriages. Using the detailed information on miscarriages and the number of still or pre-term births, our data allow us to identify the behavioural fertility response to mortality as well as to morbidity. In order to identify these effects we use a fixed effects model using variation across time and district. We find evidence for behavioural effects both from mortality and morbidity, with stronger effects from mortality. Fertility was higher in districts with high influenza prevalence in the years after the epidemic than in districts with low influenza prevalence. We find replacement effects especially for boys as well as a selection into unmarried mothers in districts where many women died during the flu epidemic. These findings contribute to the understanding of the link between mortality and fertility, which is one of the central relations in demography. As mother characteristics seem to differ during the years after the flu, we also study later in life outcomes, such as education and income, by combining the data on morbidity with individual census data from 1970. Differences could be due to negative parental selection during the baby boom or a cohort effect of being born into a ‘too large’ cohort. We show that the effects of disease go far beyond those of direct exposure and that these effects can still be measured 50 years later.

Keywords: demography; mortality; fertility.

Bastien Chabé-Ferret & Paula Gobbi (Université Catholique de Louvain)

Baby boom or baby bust: the impact of uncertainty on fertility during the Great Depression and the post-WWII growth era

The post WWII-baby boom is generally thought of as a massive surge in birth rates that took place between 1943 and the late 1960s followed by a substantial bust in fertility during the 1970s and 1980s. We propose a new mechanism as well as a new methodology to address what remains a puzzle. We argue that the level of uncertainty about future streams of income has exhibited some large swings around WWII and that they are well correlated to the swings in the fertility rate. Indeed, while the 1930s were marked by a very high level of uncertainty due to the 1929 crisis and the prospects of a world war, the 1940 and 1950s in turn were an epoch of strong and stable growth in income. Our interpretation is that fertility actually displayed a baby bust for the cohorts who were fertile during the Great Depression, then a relative baby boom and a bust again with the return to long-run values of economic
uncertainty in the late 1960s and 1970s. The novelty of our methodology lies in our effort to extract a fertility cycle by removing a centennial trend of declining fertility due to medical progress and income growth. The rationale for that is to allow fertility to be negatively correlated to income growth in the long-run trend, but to respond negatively to a short-term shock. We then correlate the fertility cycle with measures of uncertainty across U.S. states and cohorts. To make our point, we construct cohorts of women aged 40 to 69 using the Census waves 1940-90 and CPS 1990-2010. We then link each woman to the economic conditions during her fertile years in her state of residence: average income growth and volatility of growth. We find that uncertainty measured as the volatility of growth rates over fertile years is a robust and quantitatively substantial inverse predictor of fertility.

Mark Harrison (Universities of Warwick & Stanford)

If you do not change your behaviour: Managing threats to state security in Lithuania under Soviet rule

In Soviet Lithuania (and elsewhere) from the 1950s to the 1980s, the KGB applied a form of ‘zero-tolerance’ policing, or profilaktika, to incipient threats to state security. Petty deviation from socio-political norms was regarded as a person’s first step towards more serious state crimes, and as a bad example for others. As long as petty violators could be classed as confused or misled rather than motivated by anti-Soviet conviction, their mistakes would be corrected by a KGB warning or ‘preventive discussion’. Successful prevention avoided the costly removal of the subject from society. This represented a complete contrast to the Stalin years, when prevention relied largely on eliminating the subject from society.

The Russian word ‘profilaktika’ shares its root with English ‘prophylactics,’ a term for prevention in medical science. In Soviet society of the post-Stalin era the prevention of anti-Soviet behaviour was often presented as a public health issue that could be understood in epidemiological terms. Unhealthy attitudes and actions were treated as an infection entering society from abroad. Surveillance and intervention were appropriate responses. Intervention was based on triage, separating those who were treatable, and could be saved, from those who did not need treatment and also from those who were beyond treatment and required punishment or elimination. In this perspective, the principal treatment was the preventive discussion. While intervention started with prompt treatment of those showing signs of unhealthy behaviour, this was only a means to an end. The wider purpose of intervention was to save the healthy but susceptible from coming into contact with sources of infection.

Preventive discussions were widely practised in many different settings. This was the domestic front line of the Soviet police state; it was perhaps the largest programme for personally targeted behaviour modification anywhere in the world at that time outside schools and colleges. It was also a front line of the Cold War because the foreign adversary was seen as the most important source of misleading or confusing influence.

My work in progress envisages coding and analysing more than 300 individual records of ‘preventive discussions’ from the KGB archive of Soviet Lithuania. Here, I have two objectives. One is to describe the origins and operation of profilaktika. How did the concept and practice of profilaktika arise, evolve, and mature? What were the classes of people and the types of behaviour that the KGB came to define as constituting incipient threats to state security?

A second aspect of key importance is to understand how profilaktika worked, both on the individual subject, and in terms of any wider influence on the Soviet Union’s social and political order. Here, my topic can throw light on the wider relationship between incentives, social norms, and personal behaviour in a totalitarian society.

A starting point for this second aspect of my project is to examine more closely the claims that the KGB itself made concerning the effectiveness of its profilaktika techniques. The KGB maintained that profilaktika was extremely effective, with effects being registered both at the subject level and at a societal level. At the level of the individual subject, it was
argued, profilaktika effectively corrected behaviours that were construed as socially harmful or unhealthy, with a recidivism rate that was vanishingly small. Beyond this, there was a further public benefit or social externality from the elimination of ‘unhealthy’ personal examples. In this way, it was thought, individual treatment also affected collective behaviour.

The potential importance of this externality can be seen in the light of available figures on the scale of profilaktika. In the 1960s and 1970s the technique of the preventive discussion was applied to tens of thousands of people per year across the Soviet Union, and at twice that national rate in the turbulent little province of Lithuania. Even in Lithuania, however, these numbers represent only a small fraction of a per cent of the resident population. In other words, the overwhelming majority lived their lives without direct personal contact with the KGB.

My paper develops this problem as one of investigating the relationship between coercion and ‘nudge’ in the Soviet system of rule. Conformity with Soviet norms could be coerced or nudged. The individual subject of the KGB’s preventive discussion was coerced into conformity by the threats implicit or explicit in the encounter. Those around the subject, in contrast, were ‘nudged’ away from nonconformity by the subject’s changed behaviour and the lack of other examples. Thus, ‘nudge’ amplified coercion.

At the same time, however, the ruling party used many channels of influence to nudge citizens into conformity, including schools, the media, the ordinary police, and leadership and examples provided by its own members in every workplace, neighbourhood, and community organization. In the presence of many influences that could substitute for and complement each other to stabilize Soviet society, what causal role can be attributed to the KGB’s uses of coercion and ‘nudge’? Solving this problem is likely to present intrinsic difficulties.
II/G Specialization in Industrial Economies

Stana Nenadic (University of Edinburgh)

The value of craftwork in a nineteenth-century industrialized economy: The Scottish case

Arising from a current Leverhulme funded project titled ‘Artisans and the Craft Economy in Scotland c.1780-1914’, which is based on regional, sectoral and business case studies and a survey of craft design, exhibition and retail, this paper explores the character and value of craft production in a modernized industrial economy, placing the Scottish case study in a broader British and European context. The approach that underpins the research embraces the materiality of manufactured goods relative to craft skill, considering, for instance, the haptic or visual contemporary meaning of hand-made goods and is also founded on a consideration of the cultural and market value that craft skill embodied in certain types of workers, including foreign workers in Britain, as represented in the nineteenth century.613

The paper initially addressed the relevance of insights offered by the ‘flexible specialization’ model of industrial production within an evolved nineteenth century urban context, as advanced by Sabel and others.614 The distinct economic and social conditions of different types of city are explored, with Edinburgh and London shown to offer particular opportunities for the craft economy to thrive and offering contrasts with Glasgow, Birmingham or Sheffield.615 The paper then considers some of the detailed and evolving relationships between larger business organizations, new technologies of production and the maintenance of ‘traditional’ craft output within and linked to factory industry.616 Two case studies are considered, focused on decorative glass and the production of silver tableware with two firms providing the primary evidence – these being the Edinburgh-based Holyrood Glass Company and the London-based Edward Barnard & Sons, Manufacturing Silversmiths, the latter acting as a supplier of craft-made objects and components for provincial firms. The paper demonstrates that within individual firms where factory-based machine production was the norm, craftsmen were commonly employed to undertake prestigious commissions from which the companies involved derived high levels of positive market exposure. From mid-century, they were particularly engaged in exhibition work for prizes or in work intended for display in the public areas of business premises or in nearby country houses, where again there were high levels of market prestige to be gained, which gave added value to the rather more pedestrian outputs that comprised their everyday product profile. The companies examined made hand crafted components for complex, ingenious but predominantly machine-made goods such as fancy travelling cases with their glass and silver bottles and ivory brushes or complex glass and silver tableware such as epergne (which also commonly contained ceramic or other decorative elements), with complex subcontracting relationships between firms.617

An additional strand of this paper, which will be indicated at the end, concerns the ways in which larger industrial undertakings supported communities of specialist craft

613 Kenneth Lipartito, ‘Connecting the cultural and the material in business history’. Enterprise and Society, 14 (2013) 686-704 explores the potential for such inter-historical approaches.
workers on a semi-contractual basis, many of them migrants from Europe or elsewhere in Britain and some, as with the Bohemian glass engravers and ceramicists who clustered in Edinburgh and Fife and elsewhere in Britain from the mid-1850s, significant design innovators whose impact extended beyond their output. Communities of craft workers, who were physically mobile and due to high earnings could travel to exhibitions or back and forth to their places of origin, also sustained networks of craft production and supply between locations and product areas as well as cultures of craft identity and design influence on which the prestige of their outputs relied.618

**Keywords:** craft; businesses; communities; design; culture; supply networks.

**Gill Newton (University of Cambridge)**

*Employers with multiple occupations in the 1881 Population Census of England and Wales*

Using new evidence from the 1881 population Census of England and Wales, this paper will demonstrate that burgeoning entrepreneurship during Britain’s industrial revolution involved a substantial proportion of employers pursuing multiple occupations. Employers were much more likely to have (or at least to report) multiple occupations than the general population. Multiple occupations are thought to have been unusual among the total workforce: Woollard estimated the maximum proportion at 3 per cent of the economically active in 1881.619 But employers – meaning the c.180,000 individuals who appear in the Census Enumerators’ Books as masters or mistresses and/or who enumerated their employees in the 1881 Census – were more than five times as likely as other adults to give multiple occupations.

Multiple occupations in the Census take several forms. Some persons declare ceremonial positions or civic duties as well as business activities, such as ‘JP and textiles manufacturer’. Some pairings, such as ‘boot and shoemaker’ or ‘clock and watchmaker’, are natural extensions of each other that stem from a single skill. Others involve differently skilled pursuits that add value to the products of a single resource, such as ‘farmer and miller’. Among the most intriguing are those involving activities not related in any obvious way. By re-classifying separately the distinct parts of each occupational descriptor containing multiple occupations, non-business and functionally identical second or other multiple occupations can be disregarded. Thus we are able to focus on employers who pursued multiple economic activities that are semantically and functionally distinct.

Overall, ‘portfolio businesses’ consisting of two or more distinct occupational pursuits account for 10 per cent of all employers in 1881, and 13 per cent of employers not in agriculture. Among the largest employers in the country, portfolios of two or more businesses were common. These employers, with total workforces numbering in the low thousands, typically operated in the manufacturing sector. Some also had mining and landholding interests. Smaller scale employers in manufacturing and services also had high rates of portfolio business-owning. In agriculture, overall there was no difference between employers and non-employers in the propensity to have multiple occupations. All farmers, whether or not they employed others, were nonetheless more likely than the general population to hold more than one occupation.

The paper will explore regional as well as sectoral differences in the extent and nature of portfolio business holding, relative to employers with a single occupational focus. Firm size (number of employees) and farm acreages give two measures of the extent of employers’ interests, and this information is used to assess the importance of portfolio business holding at different scales. While the scope of the present paper’s analysis will be restricted to the 1881 Census, its methods will soon be used to explore similar evidence from other historical

Censuses as part of a new ESRC-funded research project on the drivers of entrepreneurship and small businesses between 1851 and 1911.

**Robert Bennett** (University of Cambridge)

*Are long-term entrepreneurship trends ‘U-shaped’: Economic transitions, 1851-2011*

A significant body of research and economic policy has claimed that, as economic growth develops, transitions in economies by sector (from farm to non-farm) and by organizational structure (from small to large enterprises, and then back to small) create a ‘U-shaped’ trend in entrepreneurship. Entrepreneurship rates fall, bottom out, and then rise. This has been observed in Britain since 1911 and in many other (but not all) advanced economies. However, the data on which these observations have been made are recognized as deficient, mainly for the earlier periods. This paper identifies the trends of entrepreneurship and small business through analysis of the population of employers and own account self-employed in England and Wales over the longer term than previously attempted: 1851-2011. There has been little previous reliable research on nineteenth-century business evolution covering the whole business population and how this relates to modern developments through the twentieth and twenty-first centuries. Jeremy (1998) argues that nineteenth-century data on small businesses are so scarce that economy-wide understanding of business dynamics has been impossible: ‘over the long period the statistics are not comparable and therefore not to be trusted for secular comparisons’, with the uncertainties increasing the smaller the size of businesses considered. As a result, despite numerous studies of the ‘industrial revolution’, we know almost nothing about the large scale patterns of entrepreneurship since the 1850s and how far any ‘U-shape’ in the twentieth century can be reliably identified. Claims that entrepreneurship is higher now than in any of the last 100 years are essentially untested. The paper constructs long term standardized aggregates for business numbers by gender and main sector (farm, non-farm) using a mix of published population census data, and new extractions from the census enumerators books for the whole of England and Wales.

The core contribution of the paper is an aggregate assessment of the British business population as part of a larger research agenda. The paper focuses on the relative importance of sole proprietors and employers, and long term changes in entrepreneurship rates. It also allows entrepreneurship to be related to gender and aggregate sector structures. The paper provides unique and entirely new information to tackle many critical economic and social policy questions that have not been answered with the data previously available. The paper lays the foundations for more detailed research which seeks to offer new insights into the development of entrepreneurship and business structures to help resolve debates about the extent, timing, scale and diffusion of Britain’s industrial change and entrepreneurship by sector, location, firm size and characteristics of firm owner.

**Keywords:** entrepreneurship rates; business organization; sector shifts; gender.
II/H Central Banking

Nadeem Aftab (Abu Dhabi University) & Tehreem Husain

The Great War and evolution of Central Bank in India

The Great War had a phenomenal impact on banking business globally, and served as a precursor to the creation of many central banks worldwide. In the case of India, although the notion of a ‘great Banking Establishment for British India’ (read central bank) dates back to 1836, it was created almost a hundred years later, but as the paper hypothesizes it was given impetus with the onset of the Great War.

The British government needed resources to finance the war and turned to India – the most important settlement outside Europe. Indian banks responded to this rise in public debt (in the form of war loans for the government) by expanding their deposit base by 73 per cent during the interwar period. Other banking fundamentals however did not sustain this expansion in banks’ balance sheets. The situation was aggravated in the absence of a fully functional regulatory body to monitor adequacy of reserves, asset-liability maturity mismatch, and money market tightness. This eventually led to a contagion-like financial crisis all across India and 83 out of 1100 banks failed during the war years. These bank failures underlined the need for a formal governance framework for the Indian banking industry and led to the birth of the quasi-central bank – the Imperial Bank of India in 1921. Later events led to the creation of the Reserve Bank of India, the central bank, in 1935.

Using different methods this study attempts to explore the relation between the financial crisis and the creation of a (quasi) central bank in India. The paper hypothesizes that the foundations of central banking in India were prompted by the Great War. The paper hypothesizes that due to the exigencies of war-finance and government resorting to banking system to finance the expenditure, the latter came under huge strain. The methods employed to assess the strain to the banking system involves macro-financial indicator analysis which divides the economy into four major sectors; fiscal, external, real and monetary. Trends of some crucial explanatory variables in each of these four sectors as well as in the Indian financial industry are analysed. In addition, some select variables have been used to create a financial pressure index which tracks the stressed macro-financial environment of these years. The indicators used and the financial pressure index do point to the stress created in the economy in the war period which, in later years, led to a spate of bank failures and eventually triggered the introduction of a formal central banking institution in India.

The paper uses archival sources, ‘Banking and Monetary Statistics of India’, published by the Reserve Bank of India in 1954 and ‘Statistical Tables relating to Banks in India’ which have been acquired by the Reserve Bank of India and the University of Chicago library respectively.

Keywords: central bank; financial crisis; public debt; war finance; India.

Luciano Amaral (Nova School of Business and Economics)

The birth of a modern financial system: Portuguese banking during World War II, 1939-45

The World War II period brought decisive changes to the Portuguese financial system, both of a quantitative and qualitative kind. In quantitative terms, the most noticeable fact was the unprecedented growth of financial depth. In qualitative terms, it was the increase in functional specialization of the various institutions present in the banking system.

Financial depth in Portugal (measured by the monetary aggregates M1 and M2 as ratios of GDP) passed from being one of the lowest in Europe at the start of the war into becoming comparable to that existing in richer countries at the end of it. This quantitative transformation was mostly caused by an unusually large influx of international means of payment (gold and foreign exchange), a consequence of Portuguese neutrality during the war. Neutrality allowed for Portugal to have trade with both belligerent blocks, resulting in the
appearance of quite atypical trade surpluses. Neutrality also allowed for Portugal to be transformed into a safe haven for refugees fleeing from the war zones, many of them bringing their savings. The accumulation of gold and foreign exchange was translated into the money supply, both currency and deposits.

But qualitative changes were equally important. The growth of deposits was more than a simple process of expansion, as it was accompanied by a complex transformation leading to a functional clarification of the different types of institutions in the system. This specialization can be summarized in the following way: 1) commercial banks increased their presence as the preferred sector for deposits of the public, taking an important share of the market from the state-owned savings bank (Caixa Geral de Depósitos, CGD) and the privately-owned but semi-official Bank of Portugal (BoP); 2) the BoP became increasingly the most important holder of commercial banks’ reserves; 3) the BoP practically abandoned its regular commercial activity. The banking system had, up to then, shown a certain lack of functional specialization, but after the war not only the BoP became an institution assuming most functions typical of central banks but also commercial banks largely replaced the CGD (and the BoP) as the main agents in the market.

Literature on growth and finance (Levine, 1997, for instance, as the pioneer in this type of approach) has stressed the role of both financial depth and functional specialization as causes of economic growth. This means that by the end of the war Portugal had acquired improved instruments to finance growth, and that those instruments must be counted as of importance to explain high growth in the Golden Age period (1950-73).

Eric Monnet (Bank of France) & Damien Puy (IMF)

Foreign reserves and international adjustments under the Bretton Woods system: A reappraisal

Despite numerous studies on the demand for foreign reserves conducted during the 1960s and early 1970s, we still know very little on the determinants of reserve accumulation during the Bretton Woods system. Studies on this topic stopped quickly after the end of the system and remained inconclusive (Grubel 1971, Williamson 1973). Despite subsequent improvements in econometric techniques, availability of data and new developments in the theoretical and empirical literature on international reserves, there has been no attempt to reinvestigate the demand for foreign reserves under the Bretton Woods period. Such a hole in the historical literature is especially surprising since the issue of international reserves was, and still is, recognized to be at the heart of the three problems of the Bretton Woods system: adjustment, liquidity and confidence (Machlup 1964, Bordo 1993).

This paper reopens the debate and provides a comprehensive examination of the determinants of the holding of international reserves by central banks. We have built a new database that allows us to take into account both trade and financial variables and to explore both the variation of reserves between countries and within a country overtime (at quarterly frequency for G10 countries and at annual frequency for 50 countries).

First, we show that contrary to a common view (Rodrik 2006, Obstfeld et al. 2010), the accumulation of reserves during the Bretton Woods system was not purely trade based. We find that domestic financial development (measured as M2 over GDP), financial openness, as well as mercantilist motives positively influenced the level of reserves. These results show that even before financial globalization, when capital controls were still a common practice, countries accumulated reserves for motives other than current account balances.

Second, based on our estimations of the demand for reserves, we shed a new light on the three well-known problems of the Bretton Woods system (Machlup 1964, Bordo 1993): liquidity, confidence and adjustment. Liquidity problems did not arise before the mid-1960s, later than usually thought, and may even not have existed at all before 1968, when SDR were finally created. Most important, the confidence problem proves to have been very severe.
According to our estimations, the determinants of the holding of gold were very different from the determinants of the holding of foreign currencies. There was an imperfect substitution between gold and foreign exchange reserves. It implies that the Bretton Woods system was a gold exchange standard and never functioned as a genuine dollar standard. Such a problem occurred more importantly for G10 countries, that is the core of the Bretton Woods system. More generally, the large and significant relationship between the size of the domestic money supply (both currency and deposits) and the accumulation of gold as foreign reserves suggest that the foreign reserves policy of central banks remained in the framework of the classical gold standard. Finally, our estimations confirm the view that the adjustment problem was prevalent among G10 countries (Bordo 1993); for at least 15 years, the U.K. maintained an overvalued currency and a too low level of foreign reserves whereas West Germany and Switzerland maintained an undervalued currency and a too high level of reserves.

Overall, these results expose the fundamental flaws of the Bretton Woods system in a new way and cast doubt on the view that the Bretton Woods system provided solutions to global imbalances and foreign reserves over-accumulation.

**Keywords:** Bretton Woods; international monetary system; foreign reserves; central banking; financial globalization and capital flows; dollar hegemony.
III/A  Early Modern Finance

Oliver Volckart (London School of Economics)

Power politics, princely debts and the failure of Germany’s common currency, 1549-55

This paper uses new primary sources to examine the creation and failure of the Holy Roman Empire’s common currency in the years around 1550. It advances four hypotheses:

1. Political actors were primarily interested in monetary harmonization not in order to help trade or advance economic integration, but to prevent the export and re-minting of their coins.

2. One strand of research claims that attempts to create a common German currency failed because the Empire’s economy was poorly integrated, with local silver prices diverging so far that the estates were unable to agree on a common standard. In fact, however, the estates quickly agreed on this point. They were able to do this because, due to Charles V’s victory in the Schmalkaldic War, the emperor’s power had increased so far that there was widespread belief in the viability of the project of monetary harmonization. Once all expected that the common currency would work, the silver-producing estates, who until then had insisted on a high mint equivalent in order to reduce the likelihood of their coins being exported and re-minted, were willing to accommodate the wishes of the estates without silver mines who demanded a lower mint equivalent.

3. The other common explanation of the failure of an Empire-wide currency argues that the number of political actors was too large and the will to cooperate too weak to allow for the overcoming differences. Examining the way Charles V’s currency bill of July 1551 was drafted shows, however, that the Empire’s monetary policies were shaped by a relatively small number of actors, with decision-making processes at every level being surprisingly effective. Moreover, the emperor’s growth in power since the Schmalkaldic War allowed the estates credibly to commit to monetary harmonization, so that co-operation in the late 1540s and early 1550s was relatively unproblematic.

4. The attempt to create an Empire-wide currency in 1551 failed for two reasons. First, the emperor and the princes pushed through a bimetallic ratio that they hoped would allow them to deflate the value of their debts. In this, they harmed the Rhenish electors. Somewhat later and using a carte blanche given him by the imperial diet, Charles V tried to weaken the elector of Saxony by deliberately undervaluing the taler. In this way, the common-currency project antagonized the highest-ranking estates of the Empire, making its implementation more difficult. Specifically, this increased the costs of enforcing the bimetallic ratio and the undervaluation of the taler to a level where they became prohibitive. On the market, the taler was overvalued and – conversely – the new guldiner undervalued. As a consequence, guldiners and with them the common currency disappeared.

In sum, the Empire’s common currency failed not because Germany was economically poorly integrated or the will to cooperate was lacking but because important actors tried to use monetary policies for ulterior ends.

Jeroen Puttevils (University of Antwerp)

The lure of lady luck: Designing lottery markets in the fifteenth- and sixteenth-century Low Countries

The abundant evidence for the ubiquity of lotteries in late medieval and early modern Europe notwithstanding, their origin and functioning remain poorly understood (Welch 2008). Economic historians of sixteenth- and seventeenth-century Europe have long recognized the potential contribution of lottery schemes to the funding of corporate or public expenditure, but
few scholars consider lotteries as an integral part of private or public financial markets. In accounts of the so-called financial revolutions in Italy, the Low Countries and England, lotteries are relegated to the margins of the analysis where their quirkiness is noted. Yet, lotteries quickly became a popular means to raise revenue first in Italy and the Low Countries in the fifteenth century and then spread throughout the continent during the sixteenth century (Muchembled 2004).

The focus of this paper is the Low Countries in the fifteenth and sixteenth century. While previous analyses of lotteries in the Low Countries have always considered one or a few schemes at a time, this paper will start by mapping the entire range and frequency of Low Countries’ lotteries. As such, the development of lotteries can be proven quantitatively for the first time. I have collected all formal permissions granted to lottery promoters. From the late fifteenth century onwards, all lottery organizers in the Netherlands required a patent, registered and taxed by the Chamber of Accounts (Thijs 1994). This source provides data on the type of institutions demanding permission (e.g. churches, city magistrates, private entrepreneurs, etc.), the purpose of the lottery they proposed (e.g. raising public revenue, funding charitable spending, private profit), as well as the main prizes envisaged.

With many different institutions organizing lotteries at the same time within the Low Countries, lottery organizers were subject to increasing competition which in turn fuelled creativity in developing lottery formulas which then spread further throughout Europe. These lottery formulas were constructed without access to formal probability mathematics which developed only in the seventeenth century, partially inspired by these very lottery schemes (Bernstein 1996, Franklin 2001, Hald 2003, Van Houdt 1995). This process of experimentation and optimization of lottery designs closely resembles the gradual and experimental development of other financial techniques such as share trading and derivatives markets in the early seventeenth century of the later Dutch Republic (Gelderblom and Jonker 2005, Petram 2011).

Lottery organizers paid close attention to one another; they copied successful (parts of) schemes. Town governments even sent some of their aldermen to towns which already had experience in lottery-organization to obtain valuable advice. Gradually, a menu of options developed which could be used to lure ticket buyers: extraordinarily large prizes, skewed prize distributions, different types of prizes, bonuses for multiple ticket buyers and for he/she who bought the largest number of tickets, discount on tickets for the next draw in a lottery series, and the pairing of the draw with a spectacular ceremony and entertainment in the public square.

Costs were vital to the profit to be made from the lottery. Organizers continually had to ponder whether they would spend extra money on advertising their lotteries and whether that would be worth it. These advertisement costs included the printing of broadsheets which stipulated the rules of the game and the prizes to be won (often visually) and the payment of public messengers. Administration costs (paying the sales agents and the clerks registering all the subscribers) and the acquisition of the prizes constituted significant costs as well. Many of these costs had to be made prior to the draw and ticket purchasing period. This brought Geerard Gramaye, an important lottery organizer, to put his ideas on different organizational formulas on paper. These notes allow a careful reconstruction of how lottery entrepreneurs thought about the risk and reward structure of lotteries and the risks they were facing.

Competition in the lottery market was not perfect. The royal government stepped in to regulate the market: royal patents were required to organize a lottery from the late fifteenth century onwards. The government believed lotteries could only be used for charitable purposes or the provision of public goods. To avoid the loss of revenue because of competing lotteries at the same time, the government patents specifically declared when the lottery should take place and often mention the name of the preceding lottery organizer. Yet, lotteries without patents were rampant at all times (information on these lotteries is obtained from a wide variety of sources, unfortunately less systematically preserved than the patents).
Moreover, the advertising of patented lotteries did often overlap in time, even when the patents were respected. Hence, potential ticket buyers could discriminate between different lotteries, both legal and illegal ones. So organizers needed to be creative enough to attract them.

In summary, this research argues that financial innovation, as exemplified by the creation of lottery schemes in the Low Countries, is not a matter of a brilliant first instance but the result of a process of continuous adaptation of existing forms fuelled by competitive pressure among suppliers of financial services, in this case lottery organizers.

**Hiroki Shin (Birkbeck, University of London)**

*The radius of the Bank of England Note revisited, 1720s–1820s*

Despite the recent progress in historical studies on the social aspect of credit networks in eighteenth- and nineteenth-century Britain, we still lack micro and social studies of monetary circulation during the same period. This is especially true regarding the circulation of paper currency in Britain. Researchers have generally believed that the Bank of England acted mostly as the ‘Bank of London’ throughout the eighteenth century, with its note circulation limited to London and the Home Counties. Particularly after the 1760s, the provincial needs for monetary liquidity are thought to have been chiefly met by local bank notes. When John Clapham examined what he called the ‘radius’ of the Bank of England note more than seventy years ago, he confirmed the conventional view of its limited circulation in the eighteenth century, thereby providing support for the existence of distinct spheres of circulation for the Bank of England note and country banknotes.620 The situation is supposed to have changed drastically with the establishment of the Bank’s regional branches beginning in the late 1820s and with the simultaneous decline of note-issuing country banks. This neat chronology, however, is at odds with the Bank Restriction period from 1797 to 1821, when the Bank of England stopped cash payments for its notes, resulting in a significant reduction of metallic currency in circulation and, inversely, boosting the amount of paper currency in the country. Arguably, the massive increase in the Bank of England’s note issue could have affected the balance of Britain’s paper currency circulation well before the Bank’s regional branches came into being.

This paper follows in the footsteps of Clapham’s early foray into the topic by drawing upon a similar but much larger set of samples from the Bank’s internal record: the Lost Note Registers that contain information about those who lodged claims for the Bank of England notes they lost. In the series of registers, the claimants’ places of residence, genders and occupations as well as the causes of loss were recorded. The result is a type of record that provides evidence of geographical and social coverage of the Bank of England note circulation. Whereas Clapham used a few hundred cases of lost note claims which appeared in the Bank’s Court Boos – and only up until 1768 – this paper analyses more than 8,000 cases taken from the registers between the 1720s and the 1820s.

The annual number of lost note claims was fairly stable until the 1770s, when it began to increase as a result of the expanding note issue. The increase in the 1770s to 1780s was moderate, however, compared to that in the Bank Restriction period. Starting with 385 claims in 1796, it grew to more than 600 claims in 1801, reaching 801 claims in 1810. The apex came in 1819, when 1,001 claims were submitted to the Bank. The widening of the community of the Bank note users was reflected in the lost note records, as claimants from diverse geographical and social origins claimed ownership of lost notes. According to the new set of data, the penetration of the Bank of England note into the provinces had already begun in the last decade of the eighteenth century with the suspension of cash payments: the radius of the Bank of England note during the Bank Restriction period was much wider than previous historians have assumed. This also points to the possibility that the Bank of England

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note and other types of paper money (e.g. country banknotes) formed overlapping spheres of circulation.

The pattern of the diffusion of the Bank of England note indicated in the registers points to various pathways through which it moved beyond London. For example, the conspicuous presence of claimants in naval and port towns in the Lost Note Registers suggests that the war economy affected the pattern of note circulation. Furthermore, claims from Scotland, Ireland and some continental countries imply that the Bank of England note moved beyond national boundaries. Within England, although historians have recognized extensive use of the Bank of England note in Lancashire, its place needs to be revised, as note losses were equally reported in Yorkshire, Gloucestershire, Somerset and Devon. Social and cultural factors in the expanding use of paper currency also require attention, as lost note claims came from pleasure destinations like Bath and Brighton and from university towns like Cambridge. The diffusion of Bank note use into wide social groups is particularly noticeable in a growing number of claimants belonging to retail trades such as butchers, bakers, grocers and ‘shopkeepers’. People of humbler occupations and social backgrounds (e.g. labourers, miners and servants) appear as users of the Bank of England note, demonstrating the broadening user base of paper currency. The record also shows that the gender composition of lost note claimants was changing, if only gradually, with the increased circulation of the Bank of England note. A close examination of the Lost Note registers thus demonstrates that Britain’s monetary landscape saw a profound transformation during the Bank Restriction period.

Overall, the paper aims at filling the gap in the history of money in terms of the geographical and social penetration of paper money in British society, which occurred earlier than previously believed. It also provides an insight into the process of the Bank of England note’s becoming a national currency.
III/B  New Approaches to Early Modern Ireland

Bronagh McShane (NUI Galway)

*Female agency in early modern Ireland: the case of the 1641 Depositions*

Held at Trinity College, Dublin and recently the subject of a major digitization project (www.1641.tcd.ie), the 1641 depositions are a collection of over 3,000 witness testimonies, made mainly by Protestant settlers, recording their alleged experiences during the 1641 Catholic uprising. Originating as sworn oral testimony spoken before at least two commissioners and recorded by a scribe, mainly in Dublin, the depositions contain answers to a series of pre-determined questions. Typically they begin with the deponent’s name, place of residence, social status; they then list financial losses incurred, in varying degrees of detail as well as listing any crimes carried out, including robbery, assault, imprisonment and murder. Recorded at a moment of extreme crisis, the depositions are of course a deeply partisan and biased source. Despite their limitations, however, they are nonetheless a valuable source of evidence for the social history of early modern Ireland, offering revealing insights into the nature and impact of the rising on individuals and communities who lived through it. More specifically, the 1641 depositions provide a unique potential for historians of women and gender in early modern Ireland; in a period when women’s voices are ordinarily either absent from or peripheral in contemporary sources, the depositions offer rare vignettes into the lives and experiences of individual women in Ireland before, during and immediately subsequent to the 1641 rising. Drawing on a selection of discrete examples extracted from the depositions, this paper considers the manner in which the turbulence and chaos of 1641 created particular (albeit short-lived) opportunities for female agency, allowing certain women to defy social and gender boundaries which usually governed their behaviour and to actively participate in arenas that were typically male dominated. It will examine the involvement of women in the violence that unfolded in 1641, both directly as instigators and perpetrators of crime and atrocity, and indirectly as abettors and harbourers of rebels within their local communities. The cases highlighted raise many important questions about the nature of female involvement in conflict and unrest more generally, for example, in what way did social status facilitate female agency, were women in some sense ‘under the radar’ when it came to activism in a way that men were not, what were the motivations compelling some women to action, and did these differ to men’s? Finally, the paper will conclude with a brief consideration of whether the experiences of women during the 1641 rising can be regarded as typical or unique when compared with that of their counterparts in early modern England and Europe.

Patrick Walsh (University College Dublin) & Aidan Kane (NUI Galway)

*Quantifying Ireland’s international trade 1683-1783: A regional perspective*

This paper has two central objectives, firstly to introduce a major new digital resource for the study of eighteenth-century Irish economic history, and secondly to exploit this new dataset to explore the regional geography of Ireland’s international trade. Ireland’s surviving eighteenth-century trade statistics are (along with England’s for the same period) exceptional in European terms for their breadth and depth of coverage providing detailed port-level data on the import and export of over seven hundred commodities (See Daudin and Charles [eds] ‘Eighteenth-Century International Trade Statistics’, Revue de OFCE, 140 [2015]). A continuous series annual survives from 1698 to 1823 in the U.K. National Archives at Kew, while separate broken series are extant for some of the period from 1683 through to 1698. These invaluable records, while well known to economic historians, are unwieldy to use or to subject to detailed economic analysis. Our research project hosted at www.duanaire.ie/trade (funded by the Irish Research Council and the NUI Galway Foundation) will, when completed, provide an online database of Ireland’s international trade. It will allow, for the first time, detailed analysis at port and commodity level as well as digital access to the original eighteenth-century import and export ledgers transforming access to this crucial
source for the economic and social history of early-modern Ireland. The main part of this paper introduces our project and highlights some of the challenges and questions raised by the data. The final part of this paper will provide some preliminary findings based on our analysis of the port-level data about the shifting regional geography of Irish consumer’s and merchant’s encounters with the global world of goods. The impact of war, the fiscal needs of the state and the vogue for ‘improvement’ will all be highlighted as factors in this changing economic geography.

Suzanne Forbes (Open University)

The potwalloping borough of Swords in 1727 and the potential of parliamentary reports for providing insight into Irish voters and their communities

Surviving reports and minutes of evidence from Irish House of Commons committees investigating election petitions in the eighteenth century provide a wealth of information about the lives of Irish voters, their occupations, their living conditions, their communities and the ways in which they interacted with candidates standing for election to Parliament. Although these sources have their limitations, amongst them a focus on the particular issues raised by candidates in their petitions to the Commons, these reports are particularly valuable given the paucity of other evidence, such as poll-books, for Irish elections during the period.

The report of the Committee of Privileges and Elections investigating the 1727 election in the tiny potwalloping borough of Swords in County Dublin is particularly informative. Long notorious for its corruption, Swords was the only constituency in Ireland whose residents were awarded compensation for the disenfranchisement of the borough in 1800 by successfully demonstrating that they were free from the influence of a patron. This paper will demonstrate that the independent nature of voters in Swords was evident in the early eighteenth century. By carefully analysing evidence offered by witnesses called before the Committee of Privileges and Elections, a great deal of information about the residents of Swords, and the ways in which they responded to attempts on the part of candidates and their agents to solicit their votes is revealed. Indeed, the independence of voters in Swords does not appear to have been the result of their political convictions, but rather a keen awareness of the value of their vote and their ability to exploit it for financial or material gain. Furthermore, this report indicates that many residents of the borough, even those from disenfranchised groups, particularly women in this instance, were also able to benefit financially from efforts on the part of candidates to influence the outcome of the election. Although focused on one early eighteenth-century election, this case study provides the basis for wider reflection on the potential of similar sources to provide insight into the lives of Irish voters and their communities.
III/C  Global Economy in the Long Eighteenth Century

Alejandro García-Montón (European University Institute)

Exploring buyer power in inter-imperial slave trade circuits: Transatlantic evidence from the seventeenth century

This paper addresses the question of to what extent imperially chartered monopolies enabled their holders to exercise buyer power in international markets. It focuses on the ways in which monopoly holders exercised buyer power and how would-be sellers reacted to the exercise of such power. By doing so, our approach aims at offering a more complex understanding of how economic relations between early-modern entrepreneurs and state-supported firms were grounded. These questions will be addressed through the exploration of formal inter-imperial slave trade circuits in the Atlantic world, a traditionally neglected field of study. The relations between the seventeenth-century Dutch entrepreneurs and the gatekeepers of Spanish monopolies will constitute our case study.

From 1663 to 1674 the Genoese Grillo & Lomellino managed to obtain a monopoly on the supply of slaves to Spanish America. That the company had neither the permission, nor the capacity for purchasing slaves in Africa potentially made it the best client for international slave suppliers: Trading with Grillo & Lomellino implied safer transactions, a higher volume of business, and more regular demand compared to doing business with non-sanctioned buyers in Spanish markets. Indeed, leading Dutch entrepreneurs chose purveying the Genoese firm rather than cooperating with each other to break its supply monopoly. In this way, Grillo & Lomellino informally acquired bargaining power.

Primary evidence shows how that power impacted the fortunes of Amsterdam merchants. From 1663, F. Ferroni was the exclusive Dutch supplier of Grillo & Lomellino and subcontracted other entrepreneurs, including the Dutch West India Company. However, in 1668 the Genoese defaulted on him. New Institutional Economics would predict a boycott of Amsterdam merchant community against Grillo & Lomellino. However, defying such predictions, the outcome was quite different in reality: While F. Ferroni retreated from slavery markets and left the city ruined, his peers continued profiting from, and depending on, the passageway to the Spanish colonial trades offered by Grillo & Lomellino.

Guillaume Daudin (Université Paris-Dauphine & Sciences Po), Loïc Charles (Paris-8 & INED) & Anne Coenen (Utrecht University)

Comparing early trade statistics: The case of Austrian Netherlands and France, 1759-91

The eighteenth century witnessed the rise of rational policy making in Europe. Accordingly, governments made significant efforts to gather economic information. External trade, which was considered as the most strategic economic sector was one of the main concern of early-modern states. This concern was at the origins of the building of a significant and administratively controlled body of statistics in several European states and regions. Surprisingly, with the exclusion of English trade statistics, these data have been rarely investigated to account for the broader economic evolution of European economies in the second part of the eighteenth century.

In this paper, we make use of two different sets of such external trade statistics. The first one is a series produced by the Bureau de la régie des droits d'entrée et de sortie of the Austrian Netherlands from 1759 to 1791, containing imports to and exports from that region. The second source is a series produced by the Bureau de la balance du commerce from 1716 to 1791 of French imports and exports. The two bureaus were sorts of national agencies, the Netherlands’s one being influenced by the structure and functioning of the French bureau. Both bureaus of trade are examples of the interest of national administrations for foreign trade statistics.

The first aim of our paper is methodological. We determine the robustness of these sources and their usefulness for the contemporary researcher aiming at comparative and
quantitative historical analysis. Here the existence of two sets of data is of special relevance since we will be able to control the economic trend provided by one set of data by looking at the other set. The second aspect of this paper is to use them to give a satisfying sketch of the evolution of the relative positions of France and the Austrian Netherlands’s economies in the international division of labour and their level of economic developments in the second half of the eighteenth century. More specifically, we want to discuss whether the possibility of an early industrial take-off in the Austrian Netherlands in this period and the part that French colonial trade might have had in spurring Flanders’s industries. Of special relevance is the fact that while data from the Austrian Netherlands do not systematically include the origins and destinations of goods traded whereas the French statistics provide this information.

The paper will be organized as such. In the first part, we present the administrative context in which both sets of data were produced. The second part discusses the way the two bureaus actually constructed their data and their reliability for economic historians. In the third part, we study whether the two datasets give comparable pictures of the evolution of the trade of the Austrian Netherlands for a number of goods. In the fourth part, we will provide an evaluation of the evolution of comparative advantages for three countries/regions – England, France, Austrian Netherlands – in order to assess the transformation that might have occurred in their economies during the second half of the eighteenth century.

**Keywords:** administrative history; eighteenth century; international trade statistics; France; Belgium; comparative advantage.

**Bronwen Everill** (University of Cambridge)

*‘For Want of Sugar’: Consumer culture in Atlantic West Africa in the Age of Abolition*

In the mid-eighteenth century, the development of African port cities signalled the reorientation of the western hinterlands of the urban centres of the Western Sudan towards the Atlantic. In a period of growth around the Atlantic world, the cities of Saint Louis, at the mouth of the Senegal River, and Goree, an island off what is now Dakar, became hybrid Atlantic spaces, with European, African, and Eurafrikan populations, cultures, languages, and consumption patterns. Freetown, founded at the end of the century, rapidly developed as a commercial and population centre as well.

Much of the writing on the commercial and consumer changes of the eighteenth century focus on northern Europe and the American colonies, even though the processes they describe could be seen in various societies involved in growing global trade. Many of the economic patterns of this period – increased consumer demand and consumer preference, the creation of consumption clusters, conspicuous consumption and identity formation, expanding global interconnectivity – were taking place in port cities along the Upper Guinea Coast. Joseph Miller has identified this period as one of ‘commercializing’ around the Atlantic World, with forces in West Africa commensurate to those taking place in Europe and the Americas. For instance, Anna Maria Falconbridge provides an insight into how this ‘industriousness’ manifested on the West African coast. In her visit to the Bullom shore, Falconbridge noted that, “the people appear more inclined to industry ... which a stranger may readily discern, by a superior way their houses are furnished in”. Indeed, even a brief review of Falconbridge’s first trip to Sierra Leone indicates that Jan de Vries’s ‘consumption clusters’ were certainly an important aspect of elite culture on the coast: King Naimbana did not serve coffee or tea to his English guests ‘for want of sugar’.

This paper reconstructs the role of three major African Atlantic port cities and their hinterlands in the emergence of an African Atlantic consumer culture from 1760-1820. Building on historiographical discussions of ‘industrious’, ‘commercial’, and ‘consumer’ revolutions in other parts of the Atlantic in this period, the paper will test the extent to which consumers in Senegambia and Sierra Leone were able to participate in these revolutions. Using probate inventories, receipts, wage information, customs data, and ship’s invoices, as
well as narrative descriptions and archaeological evidence, the paper will investigate the purchasing power of both urban and rural households and compare developments in Atlantic Africa to other sites around the Atlantic World. This paper will explore the developments in this region to argue that Atlantic port cities had a shared approach to consumer goods that helped to shape the development of attitudes toward consumerism (and anti-consumerism) at the end of the eighteenth century.
III/D  Twentieth-Century Business

Michael French (University of Glasgow)

Confectionary and corporate imagery: uses of advertising in Britain in the 1950s

In the 1950s consumption was released from the constraints of rationing and promoted with a renewed and more intensive vigour, including through the new medium of television. Studies have highlighted the diversity of approaches used by government agencies, producers, marketing and advertising companies and retailers. The underlying aims were to understand consumer behaviour better in order to expand sales and to establish brands that could command higher prices. The period saw a revival and extension of mass markets for some consumer products and more emphasis on segmentation, such as the focus on youth markets. The character, sources and impact of advertising have attracted considerable attention over the last twenty years in studies of consumption, marketing, social change and business history. The expansion of expertise in marketing and advertising has been well documented. Reactions varied. Some accounts have emphasized an enthusiastic embrace of ideas and marketing methods that originated in the United States as modern and, thus, essential. Others have highlighted evidence of resistance to American practices as, variously, distasteful, not well-suited to British consumers and markets or less effective than established ways of working. Frank Mort offered a middle ground, concluding that ‘British advertisers and retailers were characteristically eclectic and pluralistic’ (Mort, 2000).

This paper examines how leading confectionery firms understood and used advertising in the 1950s. It builds on studies by Fitzgerald and others by using business records to assess the sources of new ideas and their application including how television advertising fitted within broader marketing strategies.

Juan Baños & Francisco Javier Fernández-Roca (Universidad Pablo de Olavide, de Sevilla)

Familiar cohesion as explanation for longevity rates in familiar business: The Persan Case

Literature is scarcely reliable about the longevity of familiar businesses, their risks and the factors that contribute to their survival in the long term (Antheamue, Robic and Barbelivien, 2013). In this way, Stamm and Lubinski (2011) point out the difficulties of the succession processes that lead to a risk position the familiar businesses. In addition, De Massis, Chua and Chrisman (2008) show the importance of other factors that block the familiar succession. In analysing the survival rate, Ward (1986) claimed for more empirical research.

This work shows, through a case study, familiar cohesion as one of the reasons for business longevity given that it works for generational replacement, which is one of the most delicate moments for a familiar business (Rose, 1993). So, the cohesion between the members of the next generation enables the financial needs as the main criteria for the pace of delivery and settlement of estates and is a core pillar to implement new strategies (Colli, García-Canal & Guillén, 2012). Thus, a business family can create a dynasty, that is, a multigenerational family which has reached success and has multiplied the value of their different business and investments (Jaffe & Lane, 2004). In a contrary sense, the absence of familiar cohesion, can lead the business to a risk status in spite of having previously enjoyed financial strength.

For these reasons we have focused on the study of the families De los Santos and García that founded Persan, the most important company nowadays in Spain in the soaps segment. Persan had two familiar owner branches in the 80s-90s from the inheritors of the De los Santos brothers and the inheritor of Francisco García who played continuous clashes for control of the company and finished, after years of crisis, in a sole proprietor (100 per cent) from a part of the Moya Yoldi family (descendants of Francisco García). From such moment, at the beginning of the 2000, the company linked high growth rates to become what it is today, with sales of more than 350 million euros and equity of more than 65 million euros in 2013.
The findings show that family cohesion plays a main role for successfully overcoming the delicate transmission between generations, based on the maintenance of the family unity and the economic and financial strengthening of family businesses, in such a way that companies grow successfully undertaking new strategies and the family becomes a business dynasty (Colli, Garcia-Canal & Guillén, 2012; Fernández-Roca, 2014).

**Lars Bruno** (Norwegian Business School)

*Palm oil industry 1970-2010: Do we see a flying geese pattern emerging?*

Palm oil has in the past 50 years grown from a minor vegetable oil to become the most traded vegetable oil in the world. Malaysia has been the driving force behind the huge increase in palm oil production and trade. However, in the past 10 years Indonesia surpassed Malaysia as the world’s leading palm oil producer and exporter.

Several important international factors have contributed to the rise of the palm oil sector. The first, and isolated the most important, is the growth in demand for vegetable oils. The export volume of vegetable oils increased annually by 6.3 per cent from 1962 to 2008 (Basiron et al., 2004 and MPOB, 2011). Palm oil was the largest growing of the major vegetable oils with a 9.4 per cent annual growth in volume the same period. Increased living standards caused by economic growth in both developed and developing countries contributed.

A second factor was that animal fats, which were important prior to 1945, had supply problems. Given the nature of production, it was difficult to increase production given the increased demand. In addition, a major animal fat, whaling oil, was more or less banned from the world market. This meant that increases in supply primarily would come from increases in vegetable oil production.

A final factor was the high productivity of palm oil compared to its major competitors. Oil yield, meaning the amount of oil produced per hectare, was 4.29 per hectare for Malaysia for 2006-8 (three-year average based on MPOB, 2011). The comparable figures for rapeseed oil was 1.16 (figure for the European Union), 0.31 for soyabean (figure for the U.S.) and 0.69 for sunflower (figure for Argentina). Even counting for the lower price for palm oil, the value per hectare of palm oil was roughly three times as high as the nearest most profitable which was rapeseed oil.

The high productivity palm oil could lead to the impression that the rise of the palm oil sector was inevitable. While the counterfactual is always difficult to know for certain, two arguments suggest that domestic factors were important. First, it took a long time for the real breakthrough of the palm oil sector. Palm oil had been introduced to Malaysia in the late nineteenth century and its first commercial exploitation had commenced in 1917. However, it was not until the government actively started to promote palm oil production from 1957 onwards that the sector makes its breakthrough in Malaysia. This support does indicate that palm oil needed industrial policies to kick-start its development.

A second argument is that government policies were important for the development of more productive species of palm oil tree through government research projects in the 1950s. This indicates that earlier species of palm oil had insufficient yield to be internationally competitive. However, these arguments are by themselves not proof that Malaysian palm oil would not have developed without government support.

The rise of palm oil in Malaysia coincides with the decline of natural rubber, which up until then had been the main export crop. The development of synthetic rubber meant that demand for natural rubber fell, and many plantations shifted production from natural rubber to palm oil. Industrial policy also provided so-called replanting grants speeding up the transformation.

While there is doubt whether industrial policy was necessary for the establishment of palm oil plantations, there is little doubt that the nature of the palm oil industry was shaped by these policies which can be seen in several crucial aspects of the Malaysian palm oil industry.
The first important area is on the ownership side. In 1970, the majority of palm oil plantations were foreign owned, however, by 1980 the majority of plantations were domestically owned.

A second area of influence is on the higher value-added production. In the 1960s palm oil was mostly exported to Europe to be processed there. In 1973, the government implemented a tax on crude palm oil, which led to the creation of the palm oil refineries, which exported the higher value-added processed palm oil. In addition, the palm oil industry developed forward linkages to the other sectors in which palm oil was a major input such as the oleochemical industry in the 1980s.

Another area was the strong institutional support of the palm oil sector. The Palm Oil Registration and Licensing Authority (PORLA) was responsible for giving licences and controlling prices in the palm oil sector. The Palm Oil Research Institute of Malaysia (PORIM) was responsible for conducting public research in palm oil. Following a rationalization process in 1998, PORLA and PORIM merged to form the Malaysian Palm Oil Board (MPOB).

The rise of the Indonesian palm oil sector has to be divided into two parts with the early 1990s as a watershed. Prior to 1990 Indonesian industrial policy focused on the development of a domestic-oriented palm oil sector with little to no incentive for exports. Following 1990, exports were encouraged, even though to a lesser degree than in Malaysia. Given Indonesia’s larger land mass, agricultural employment and a near identical climate to Malaysia, it was only a matter of time before Indonesia became the world’s largest palm oil producer and exporter. However, the industrial policy and institutional support has been far weaker than in Malaysia, which is a contributing factor for the lack of development in the higher value-added areas of the palm oil industry in Indonesia.

The paper analyses whether Malaysia’s technological leadership constitutes a ‘fleeing-geese pattern’ similar to the spread of manufacturing industries across countries in East Asia.

References
Academic Session III / E

III/E Political Economy and Market Performance in Qing China

Daniel Bernhofen (American University), Markus Eberhardt, Stephen Morgan (University of Nottingham) & Jianan Li (Xiamen University)

Market integration in early modern China: Spatio-temporal analysis with cross-sectional dependence

One of the seminal questions in world and Chinese economic history is why China, in contrast to Western Europe, failed to industrialize during the eighteenth and nineteenth centuries: the question about the causes for the ‘Great Divergence’. Social and economic historians have tried to tackle this question by identifying necessary conditions for industrialization. One prominent condition has been the degree of market integration of an agricultural economy, with the argument that integrated markets generate static and dynamic gains from specialization and trade which then facilitate the transition from an agricultural to an industrial economy.

A long-held view has maintained that Western Europe was characterized by integrated markets, which had taken root because of state-supported property rights institutions, while in China markets were underdeveloped despite the unified political system created by a dynastic empire. This view has been challenged by a revisionist body of scholarship, most notably Wong (1997), Frank (1998) and Pomeranz (2000), who have claimed that early-modern China was not only on par with Western Europe, but even conjectured that “eighteenth-century China … came closer to resembling the neoclassical ideal of a market economy than did western Europe” (Pomeranz, 2000: 70).

Recent econometric evidence by Shiue and Keller (2007) provided empirical support for the revisionist view that the level of market integration in Southern China was quite comparable to that in Western Europe at the dawn of the industrial revolution. The continuing rise in prominence of Shiue and Keller’s (2007) findings has helped transform what was once a revisionist view into a now conventional view that differences in market integration can be ruled out as an explanation for the Great Divergence. This paper revisits the question regarding the degree of market integration in early-modern China and Europe and challenges the conclusions of Shiue and Keller (2007) and earlier studies (Wang, 1989, 1992; Wang and Chen, 2002).

We examine the patterns and changes in grain market integration across 211 Chinese prefectures during the High Qing period (1740-1820). We provide empirical evidence that regional integration was characterized by considerable heterogeneity: markets for rice in South China were more integrated than those for wheat in the North, while both regions experienced a prolonged period of market disintegration over the course of the eighteenth century. While a companion paper (Bernhofen, Eberhardt, Li and Morgan, 2015) focused on the average level of market integration and its dynamics (the ‘macro-economic experience’), and also provided some comparative analysis of grain markets in Western Europe, the present study shifts the attention to the micro-economic experience of market dynamics. We are interested in uncovering the patterns of disintegration within various units of analysis: How did integration fare within geomorphological or political boundaries as compared with across these units? Did ‘peripheral’ prefectures drop out of the network of integration first? We further chart some of the narrative in the rich literature on social and economic history of Qing China which had to be left by the wayside in the companion paper.

Our empirical analysis is based on relative price convergence regressions for each prefecture pair in South and North China, respectively. Our methodology enables us to investigate the dynamic micro-patterns of prefecture-pair price correlations while still avoiding the ‘tyranny’ of partial equilibrium analysis: we account for the unobserved interaction between markets and the distorting impact of common (weather) shocks by modelling prices within a common factor framework. We do so by adopting the cross-section average augmentation developed by Pesaran (2006). The results are presented visually in the
form of dynamic matrix graphs and we zoom in on specific regions of the empire where we have rich information from existing work in the literature.

**Keywords:** Qing China; market integration; price correlation; common factor model; cross-section dependence; general equilibrium effects.

**JEL codes:** F15, N75, L11, C23, O10.

**References**


**Mark Koyama** (George Mason University) & **Melanie Meng Xue** (UCLA)

*The Literary Inquisition: The persecution of intellectuals and human capital accumulation in Imperial China*

Imperial China used an empire-wide system of examinations to select civil servants. Using a semiparametric matching-based difference-in-differences estimator, we show that the persecution of scholar-officials led to a decline in the number of examinees at the provincial and prefectural level. To explore the long-run impact of literary inquisitions we employ a model to show that persecutions could reduce the provision of basic education and have a lasting effect on human capital accumulation. Using the 1982 census we find that literary inquisitions reduced literacy by between 2.25 and 4 percentage points at a prefectural level in the early twentieth century. This corresponds to a 69 per cent increase in the probability of an individual being illiterate. Prefectures affected by the literary inquisition had a higher proportion of workers in agriculture until the 1990s.

**Keywords:** China; human capital; institutions; persecutions; persistence.

**JEL codes:** N45, K42, I2.

**Debin Ma** (London School of Economics)

*State capacity and Great Divergence: the case of Qing China, 1644-1911*

This paper posits that the political institution of imperial China – its unitary and centralized ruling structure – is an essential determinant to China’s long-run economic trajectory and its early modern divergence from Western Europe. Drawing on institutional economics, I
demonstrate that monopoly rule, a long time-horizon, and the large size of the empire could give rise to a path of low-taxation and dynastic stability in imperial China. But fundamental incentive misalignment and information asymmetry problems embedded within its centralized and hierarchical political structure also constrained the development of the fiscal and financial capacity of the Chinese state. This paper develops several sets of unique data series on warfare, central government revenue, and governmental savings (in the form of silver reserves) for seventeenth-nineteenth-century Qing China, matched with an historical narrative to illustrate the problem of incentives and information as the origin of China’s economic divergence from Western Europe.

**Keywords:** incentive and information; political institutions; public finance; Qing China.
Academic Session III / F

III/F  Height and Health

Kris Inwood (University of Guelph), Les Oxley (University of Waikato) & Evan Roberts (University of Minnesota)
‘Tall, active and well made’? Māori stature and health in New Zealand

Between the sixteenth and nineteenth centuries Europeans colonized previously independent societies in the Americas, Asia, Africa and Australasia. While African and Asian indigenous populations were stable or increased slightly during the era of European colonization (Manning, 2013), there was significant indigenous population decline in settler colonies in the Americas and Australasia that had been isolated from Eurasian diseases, and where European migrants and their descendants quickly outnumbered the indigenous population (Crosby, 1986, Kunitz, 1996). The physical health of indigenous peoples clearly suffered, and yet some populations remained tall in spite of population loss through military conflict, epidemic disease and lost access to means of subsistence. The best-known example is the experience of Indians in the Mississippi River valley and on the western plains of North America who experienced little or no decline in physical stature even as the advancing tide of European settlement undermined health and well-being in ways that caused a sharp decline in population (Carlson and Komlos, 2013, Prince, 1995, Prince and Steckel, 2003, Steckel and Prince, 2001).

New Zealand provides another setting to examine the physical well-being of an indigenous population following European colonization and settlement. In this paper we examine the evolution of physical well-being among the indigenous Māori population as reflected in their stature, assembling a continuous series of stature measures from microdata covering cohorts born between 1830 and 1990. Māori population expanded considerably in the several centuries between their arrival in New Zealand and the arrival of Europeans late in the eighteenth century, with formal British colonization occurring in 1840 (Orange, 1987).

In this paper we examine physical well-being among New Zealand Māori from the 1700s to the mid-twentieth century. After colonization Māori stature declined slowly. Late nineteenth century Māori and Pākehā (European settlers) stood equally tall, but Māori stature lagged between 1900 and World War II. Stature increased after the 1920s for Pākehā and 1950s for Māori. Convergence has re-established comparable stature. Fertility decline, improvements in socio-economic status, and health policy may explain convergence of stature and infant mortality. We hypothesize that the early twentieth century divergence reflects cumulative land loss, disease incidence, rural-urban migration and labour market segregation.

John P Tang (Australian National University)
The engine and the reaper: The impact of industrialization on mortality in late nineteenth-century Japan

Economic development leads to improved health over time due to increased access to medical treatment, sanitation, and income, but in the short run the relationship may be negative given disease exposure from market integration. Using a panel dataset of vital statistics for Meiji Japan, I find mortality rates increased during the country’s early industrialization, with railroad access accounting for over 5 per cent of average mortality between 1886 and 1893. Estimates from a triple-differences framework indicate that communicable disease mortality accounts for 91 per cent of the additional incidence, which suggests that improved transport may have operated as a vector for transmission.

Keywords: contagion; market integration; mortality Kuznets curve; public health; railroad transport.
JEL codes: J11, N75, O14.

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Sebastian Otten (Ruhr University Bochum), Julia Bredtmann & Magdalena Stroka (RWI Essen)

*Generation war: The long-term effects of World War II on physical and mental health*

In this paper we use World War II (WWII) as a natural experiment to examine long-run effects of malnutrition and mental stress on physical and mental health of older individuals in Germany. Recent studies have found a negative effect of prenatal and early life shocks on health outcomes in later life. According to the fetal origins hypothesis, conditions of adult health can be traced to in utero malnutrition. Furthermore, psychic trauma experienced during early childhood influences mental health decades later. The traumatization by WWII and the exposure to the German famine of 1945-48 present exceptional opportunities to evaluate the consequences of mental stress and prenatal malnutrition.

For our analysis we combine data on regional destruction in Germany caused by the Allied Air Forces bombing with administrative data from the biggest German sickness fund covering about one million individuals born between 1920 and 1955. The data provide information on medical diagnoses of both mental (e.g. depression) and physical diseases (e.g. cardiovascular diseases, diabetes) as well as on the prescription of several types of drugs. To identify the causal effect of mental stress and prenatal malnutrition during early life on health at older ages, we use (i) geographic variation in the intensity of WWII destruction as an exogenous measure of traumatization and (ii) variation in birth cohorts to capture the effect of malnutrition during the war and the famine afterwards.

Our results provide evidence that early life circumstances significantly affect physical but not mental health at older ages. We find that those who experienced a higher intensity of WWII destruction during childhood are more likely to suffer from diseases of the digestive system or the liver and have a significantly higher probability of being in need of care at older ages. Furthermore, the cohorts born during the famine have a significantly higher probability of suffering from cardiovascular diseases and diabetes than cohorts born shortly before or after.
III/G  Technology Transfer

Felix Selgert (University of Vienna) & Alexander Donges (University of Mannheim)

Germany’s early industrialization: regional innovativeness and technology transfer, 1843-77

We describe a novel and unique dataset of barely 1,600 patents that were granted in the German state of Baden between 1843 and 1877. The dataset includes not only domestic patentees but also a high number of patentees from other German states, Western Europe and the United States. Applications were costly and subject to a reviewing process by a commission of technical experts ensuring that only new, useful and significant products or production technologies were granted a patent. This contrasts, for example, with the Prussian system, making our dataset a useful tool to study patent activity in Germany prior to the harmonization of the national patent system in 1877 for the first time.

We cover four important questions concerning the period of early industrialization in Germany. First, our data allow us to contribute to the debate about the timing of Germany’s industrialization and, secondly, the leading sectors that headed its breakthrough. Moreover, we are able to pin down the innovative regions that fuelled Germany’s rise to industrial power complementing the many case studies in this field. Comparing our results with existing studies about regional innovativeness between 1877 and 1914, we can ask whether a region’s ability to produce innovations was path-dependent. Information about patent listings from outside Germany, finally, allows us to draw a clearer picture of the role of technology transfer in the early period of Germany’s industrialization.

First results show that there were two major spurts of patent applications between 1843 and 1877 taking place in the periods 1855-59 and 1870-74, respectively. This suggests that the breakthrough of industrialization in Germany – defined as a more and more widespread use of new technologies that led to self-sustaining growth – should be dated to the second half of the 1850s rather than to the second half of the 1840s. The two major spurts were driven by the railway-sector, but textiles (especially textile processing) and inorganic chemistry also played a distinctive role, foreshadowing Germany’s leading position in the modern chemical sector based on organic chemistry. Patentees from Baden’s neighbouring regions, like Württemberg or Switzerland, are in a sense overrepresented in our dataset. Thus, we assume that proximity is a crucial factor for explaining regional differences in patenting activity in the nineteenth century. Taking this bias into account, our data indicate a strong path-dependency. Measured by the number of patentees per inhabitants, Aachen, Braunschweig, Cologne, Frankfurt (Main), Magdeburg and Stuttgart stand out as the most innovative cities, and these cities were also ranked high between 1877 and 1914. We therefore argue that, on average, early innovative success strongly predicts a region’s innovativeness in future years. At last, our dataset sheds new light on the role non-German inventors played for Germany’s early industrialization. After Baden and Prussia, France was the most important home country of inventors. The United States, the United Kingdom and Switzerland were also important suppliers of innovation. Moreover, it seems that the boom in railway technologies during the second half of the 1850s was mainly driven by non-German inventors.

Zorina Khan (Bowdoin College & National Bureau of Economic Research)

Of time and space: A spatial analysis of knowledge spillovers among patented and unpatented innovations

This paper explores the role of institutional mechanisms in generating technological knowledge spillovers. The estimation is over panel datasets of patent grants, and unpatented innovations that were submitted for prizes at the annual industrial fairs of the American Institute of New York, during the era of early industrial expansion in the nineteenth century. The first section tests the hypothesis of spatial autocorrelation in patenting and in the exhibited innovations. In keeping with the contract theory of patents, the procedure identifies high and statistically significant spatial autocorrelation in the sample of inventions that were
patented, indicating the prevalence of geographical spillovers. By contrast, prize innovations were much less likely to be spatially dependent. The second part of the paper investigates whether unpatented prize innovations in a county were affected by patenting in contiguous or adjacent counties, and the analysis indicates that such spatial effects were large and significant.

These results are consistent with the argument that patents enhance the diffusion of information for both patented and unpatented innovations, whereas prizes are less effective in generating external benefits from knowledge spillovers. I hypothesize that the difference partly owes to the design of patent institutions, which explicitly incorporate mechanisms for systematic recording, access, and dispersion of technical information.

**Keywords:** Technological innovation; patents; prizes; externalities.

**David Pretel** (Pompeu Fabra University)

*Expert knowledge and colonialism: sugar production under American rule, 1900s-1930s*

This paper explores the international circulation of experts in sugar production during the first third of the twentieth century, focusing on the cases of the Spanish Caribbean and the Philippines. It traces the activities of sugarcane technologists and the material resources these experts mobilized to reshape the landscape and industrialize sugar production. The sugar industry in the tropics provided career opportunities for qualified experts as well as the conditions in which to develop large technological projects such as experimental stations. This paper first enquires as to the process of international technology transfer to sugar plantations and the process of creolization and adaptation of foreign technologies to local social and environmental milieus. Second, it provides an enquiry into the role of transnational agro-industrial expertise as a tool of colonial and post-colonial rule, specifically in the case of the expansion of U.S. power in Cuba, Puerto Rico and the Philippines. Finally, the professional and social status of these experts in sugarcane production is studied in relation to other local and transnational professional elites. The role of international networks of experts is likewise considered, focusing on the activities of the International Society of Sugar Cane Technologists founded in 1924.
Any lessons for today? Exchange-rate stabilization in Greece and South-East Europe between economic and political objectives and fiscal reality, 1841-1939

We add a historical and regional dimension to the debate on the Greek debt crisis. Analysing the 1841-1939 exchange-rate experience of Greece, Bulgaria, Romania and Serbia/Yugoslavia, we find surprising parallels to the present: repeated cycles of entry to and exit from gold, government debt build-up and default, and financial supervision by West European countries.

Why was exchange-rate stabilization so short-lived in international comparison? The SEE countries conducted more often than not fiscal policies inconsistent with exchange-rate stability. Persistent budget deficits were either monetized or financed through (international) bond markets. Joining the pre-1914 gold standard required phasing out debt monetization, yet Granger causality tests show that this proved elusive for decades; only Romania was able to reform its fiscal institutions and cut the link from deficit to debt monetization on its own. In all other cases this was achieved only under the financial supervision arrangements which Greece and Serbia entered into after their defaults (and Bulgaria accepted ‘voluntarily’), when creditor countries prohibited debt monetization, improved tax collection and gave controlled (and hence sustainable) access to international capital markets. It was this much improved institutional environment which allowed Greece, Bulgaria and Serbia to stabilize their exchange rates in the early twentieth century. Similarly, exchange-rate stabilization in the 1920s was achieved by international loans which came with the explicit prohibition of debt monetization (in an attempt to secure gold standard adherence and hence repayment of the loans); once financial supervision receded (with the disintegration of the gold standard in 1931/32), budget deficits were again routinely monetized.

Fiscal institutions have remained weak in the case of Greece and are at the heart of the current crisis. A lesson for today might be that the EU-IMF programmes – with their focus on improving fiscal capacity and made effective by conditionality similar to the earlier South-East European experience – remain the best guarantor of continued Greek EMU membership. Understandable public resentment against ‘foreign intrusion’ needs to be weighed against their potential to secure the long-term political and economic objective of exchange-rate stabilization.

**Keywords:** fiscal dominance; gold standard; financial supervision; South-East Europe.

**JEL codes:** N13, N14, N23, N24, E63, F34.

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Brazilian macroeconomic fundamentals deteriorated after 1889, when a republican coup toppled the monarchic regime. Warfare and decentralization of tax collection increased the fiscal deficit. Loose monetary policy and falling coffee prices depreciated the exchange rate, which raised the cost of servicing the gold-denominated debt. This process was concomitant with the dismantling of institutions in charge of compiling fiscal accounts. Fundamentals did not only get worse; data became less reliable as well.

At the end of every year, the Finance Ministry consistently recognized it had wrongly projected expenditure and revenue. To make matters worse, it usually came up with different figures for that same exercise two years later. These inaccuracies did not pass unnoticed. The *Economist* (26th August, 1899, p. 1220) published that the “Brazilian Ministry’s estimates of revenue (…) are generally criticized as altogether too optimistic”.

This paper assesses how international creditors dealt with such imperfect information when pricing Brazilian debt. It regresses the risk premium applied to the bonds floating in
London between 1880 and 1928 on four variables that measure fiscal results in different ways: the fiscal balance for the year \( t_0 \) published at the beginning of \( t_0 \), the balance for \( t_0 \) published in \( t_1 \), the balance for \( t_0 \) published in \( t_2 \), and the reconstructed fiscal balance from the *Estatísticas Históricas do Brasil* (1989).

We select the model using an automatic selection algorithm developed by Hendry and Doornik (2004). The algorithm allows us to discover which set of variables explains the Brazilian risk for the period, controlling for structural changes and outliers. It avoids the problem of data mining by comparing a great number of models, using a general to specific approach.

The contemporary fiscal series are not significant and the reconstructed series are significant and appear with the expected coefficient sign. We include a number of control variables, two of which are significant: the risk premium on sovereign debt from other emerging countries, a measure of liquidity, and the ratio between services and tax revenue from the reconstructed series. Coffee prices, trade balance and exchange rate are not significant.

These results support the conclusion from Flandreau and Zumer (2004) and Mauro et al. (2006) that creditors evaluated risk based on fiscal results rather than the adoption of the gold standard. In the case of Brazil, however, contemporaries did not rely on the fiscal data they had access to at the time. Instead, they acted as if they knew the series that were published a century later. Such reconstructed data seem to capture information that creditors were sophisticated enough to use when pricing Brazilian bonds.

**Keywords:** sovereign debt; fiscal policy; imperfect information; risk premium; Brazil.

**David Chambers, Elroy Dimson** (University of Cambridge) & **Paul Marsh** (London Business School)

*Industries: Their rise and fall since 1900*

This paper focuses on the change in the industrial composition of the U.S. and U.K. stock markets over the long-run and on the importance of industry weightings for long-term investors. We show how industries have risen and fallen as technology has advanced. Markets at the start of the twentieth century were dominated by railroads. In the U.K., railway companies accounted for almost half the value of the stock market, while in the U.S. they had a 63 per cent weighting. Yet 115 years later, railroads have declined almost to the point of stock market extinction, representing less than 1 per cent of the U.S. market, and almost zero in the U.K. Of the U.S. firms listed in 1900, more than 80 per cent of their value was in industries that are today small or extinct; the U.K. figure is 65 per cent. Successive waves of new industries and companies have transformed the world, yet they have sometimes proved disappointing investments. We seek to explain how the decline of old industries, together with some investment disappointments from new ones, have somehow generated good overall returns. New industries are typically born on a wave of IPO activity, and investors should be especially cautious about the valuations of IPOs and unseasoned stocks. Conversely, investors can sometimes become unduly pessimistic about declining industries and their stocks become oversold. Both new and old industries can reward as well as disappoint. It all depends on whether stock prices correctly embed expectations. The paper concludes by examining some implications of our findings for investors. We pay particular attention to considering whether industry rotation is worthwhile, whether investors should pay attention to building portfolios that are well diversified across industries and the relative merits of industry diversification versus country diversification.
IV/A Women’s Committee Session: Ways of Financing Across Europe

D’Maris Coffman (University College London)
Understanding the financial dealings of the London Company of Brewers

This paper uses the surviving financial records of the London Company of Brewers to understand their property portfolio and their lending operations in the century after the Restoration. Not only did the company have a considerable property portfolio, which was decimated and rebuilt after the Great Fire of London, but also they made loans in the form of interest-bearing notes and held an array of bonds and annuities. The object is to offer a preliminary survey of the returns from the Company’s various investments and to understand how those changed over time, as well as offering a case study of the Company of Brewers as a lender in this period, while considering how the scale of its operations and its performance might compare to its peers.

Cinzia Lorandini (University of Trento)
Financing the silk industry: Evidence from eighteenth-century Trentino

The silk industry was one of the most important proto-industrial activities in northern Italy in the early modern period. In the eighteenth century, a fairly large number of enterprising merchants were responsible for coordinating the manufacture of raw silk and silk yarns which were exported throughout Europe. Due to the high cost of silk, the concentration of financial outlays in a limited time span and slow capital recovery, access to the silk trade required substantial start-up capital, which was gathered by resorting to different types of business organizations, and by complementing equity with debt. Specifically, the literature highlights that in some regions the limited partnership (accomandita) was frequently used to raise capital in the silk business. First regulated by merchant law in late medieval Tuscany, the limited partnership subsequently spread to other Italian regions, and in the late sixteenth and early seventeenth century this type of partnership agreement was employed in Milan, Bologna, Rome, and the Republic of Venice.621 However, less is known about the diffusion of this type of partnership in smaller urban economies.

This paper focuses on the financing practices of silk merchants in eighteenth-century Trentino – a region situated on a major transit route between northern Italy and continental Europe – in order to obtain a well-rounded picture of the mobilization of capital for a rapidly expanding trade. The silk merchants were located mostly in the manufacturing centre of Rovereto (Austrian County of Tyrol) and, to a lesser extent, in Trento (Prince-Bishopric of Trento), and all of them attended the Bolzano fairs which took place four times a year. Indeed, the main sources for this investigation are the documents preserved in the Archives of the Merchant Court in Bolzano, a formal enforcement institution responsible for the settlement of disputes among merchants attending the fairs. In particular, information on silk firms is based on analysis of 45 oblatorie (circular letters) issued from the 1740s through the 1780s, while further evidence is drawn from trial documents and the business records of major silk merchant houses. This allows establishing the incidence of non-family partnerships vis-à-vis

family firms and single proprietorships, identifying the firms’ managers and investors, and estimating the capital invested and the merchants’ recourse to financial leverage.

Analysis of this small, but rather comprehensive, sample shows that the funds raised usually amounted to 40,000 florins or more. Due to large capital needs, ‘pure’ single proprietorships and family firms, namely individuals and families who did not resort to external capitalist partners, were much less widespread than usual. And some trial documents of the Merchant Court support the contention that, in such circumstances, the tendency to resort extensively to the financial leverage might increase. In the overwhelming majority of cases, merchants established partnerships in order to pool skills and capital from two or more partners beyond the family circle. Although the oblatorie did not refer to the accomandita, looking at the circular letters through the lens of the merchant law, we can argue that many of these associations were limited partnerships. These latter facilitated the investment of capital by affluent individuals, especially former merchants who had entered the patriciate and had the opportunity to constrain their risk within the limits of their stake, without fearing at the same time that their nobility status was jeopardized. Furthermore, analysis of the active partners involved shows that the limited partnership was a way to promote vertical mobility of young merchants who had the skills but not the capital to access the silk trade. Indeed, the accumulation of wealth through the silk business by some families of Rovereto, typically crowned by ennoblement, led the new patricians to invest in a sector that was familiar to them – through debt or via establishment of partnerships, often in the form of accomandite – with merchants endowed with the necessary expertise, often gained as other silk firms’ employees.

Marcella Lorenzini (University of Trento)

Notarial credit in eighteenth-century Trentino: dynamics and trends

This paper examines the informal credit market in Trentino in the second half of the eighteenth century, by drawing upon notaries’ loan contracts. The analysis focuses on four benchmark years: 1750, 1760, 1770 and 1780. In this time span more than 10,000 contracts had been certified, 1,200 of which were credit transactions registered in two different cities, Trento and Rovereto. The aim of the research is to investigate the dynamics and trends as well as the mechanisms that characterize the two credit markets, specifically who were the borrowers and the lenders, for which purposes was capital borrowed and at what price. The findings show the stark differences between the financial markets in the two cities. In Trento, whose population amounted to around 10,000 people, credit activity had an incidence of 7.7 per cent on the whole notarial transactions, while the nearby Rovereto, inhabited by about half the of population of Trento, credit contracts reached double that amount, i.e. 15 per cent. Likewise, the capital flow reflects the different nature and dynamism of the two urban centres. In Trento, capital was mainly destined to finance agriculture and urban activities (craftsmanship, retail). In Rovereto, whose capital flow was almost three times that of Trento, it was largely addressed to finance agriculture and a flourishing international silk trade. The political and institutional framework in which they were embodied was indeed quite different: Trento as the capital of the Prince-Bishopric, was chiefly an administrative town and apparently impervious to innovations, while Rovereto, part of the Habsburg Empire, was well-integrated into an international trade network where silk manufacturing was rapidly expanding and where credit played a crucial role for its development.

Giuseppe De Luca (University of Milan)

Non-institutional credit vs banks in the age of modernization: the case of Milan

In Milan, the world of non-institutionalized credit, populated by noblemen, the bourgeoisie, merchants, ecclesiastical bodies and pious entities – typically for the early modern age – expanded rapidly from the last decades of the eighteenth century; the flow of money from the redemption of public debt placed fresh capital in the hands of thousands of subscribers, which was invested in an economy undergoing deep transformation. Notaries emerged as the backbone of this market, not only as certifiers of the legality of loan agreements: thanks to the rich capital of information accumulated from their clients and increasing returns from the successful completion of transactions, they progressively, reliably and efficiently, acted to intermediate between supply and demand for credit. With French presence and the consequent liquidation of the few existing financial organizations (Monte di Santa Teresa, Monte di Pietà), the frame of the unofficial credit segment extended wider, contributing to a new social balance; alongside notaries, networks of relatives, proximity and professional relations were built up, creating a mechanism of trust and for verifying reputations which comprised the social base for the provision of credit. On this basis, notaries were able to serve a large portion of society in Milan, including the lower classes; it can be estimated that in 1840 almost a fifth of the households in the city had obtained notarized loans; using consolidated information rather than generic guarantees and collateral, these intermediaries moved large sums and provided medium and long-term finance for the most up-to-date entrepreneurial activities, which the Cassa di Risparmio (Savings Bank) was not willing or able to fund. This bank, which did not have the same detailed information available, worked on the basis of the scrupulous evaluation of property used as collateral and hence ended up lending only to aristocratic landowners and city authorities. As in France, examined by Hoffmann, Postel-Vinay and Rosenthal, in Milan too, the bank was no substitute for notaries. The two sides of the credit world, formal and informal, coexisted, complementing each other and, later, crossing over into the terrain normally occupied by the other; after 1861, much of the detailed information provided by notaries and the ability to monitor informal credit networks, became working methods adopted by the banks.
IV/B Business of Empire

Karwan Fatah Black (Leiden University)
*Dismantling chartered companies in the Dutch Atlantic*

Already from its inception in 1621 the Dutch West India Company (DWIC) came under pressure to relinquish part of its monopoly rights in the Atlantic. This was mainly the result of conflicting economic interests. I argue here, however, that the final dismantling of the chartered companies in the Atlantic was mostly one of symbolic value. In the metropolis the urban centres and provincial states, which had unified in their struggle against the Habsburg Empire, attempted to acquire competitive advantages over each other in the Atlantic. Because of the federal nature of the Republic, parts of its Atlantic domains were parcelled out. The DWIC was divided into five urban Chambers with their own specializations, and the domains were further divided into patroonships and subsidiary chartered companies catering to specific towns in the Republic. Between 1791 and 1795 the various chartered companies, including the DWIC and its chamber system were dismantled, ending urban privileges in access to the colonies. This paper will study the political and economic changes behind the dismantling of the DWIC, Suriname Company and Berbice Company as symptoms of both changing ideas about colonial empires and a restructuring of the relationship between urban government and the central state in dealing with colonial affairs. This paper argues that the dismantling of the chartered companies was mostly a symbolic act in a power struggle between urban centres and the States General. Robbing cities of their colonies changed little in the economic structure, but did take away icons of urban autonomy. Especially in Amsterdam the urban elite was made to relinquish its imperial aspirations.

Susana Münch Miranda (Leiden University) & João Paulo Salvado (University of Évora)
*Between Brazil and Asia: the global business of De Bruijn & Cloots of Lisbon, 1713-37*

This paper looks at the participation of the Dutch firm De Bruijn & Cloots in the business of the Portuguese empire, at a time when Lisbon played a pivotal role in European global trade, fostered by Brazilian gold mining. As many other foreign merchants who settled in the Portuguese capital in the first decades of the 1700s, Willem de Bruijn and Paul Cloots were wholesale traders, selling European manufactured goods and purchasing domestic and colonial consumer goods that were in demand in Northern Europe. Yet, over the years, they participated directly in Portuguese colonial business, despite the restrictive laws that excluded foreigners from direct trade with the empire. By the end of the 1710s, their business network included correspondents in Rio de Janeiro and Bahia, which gave them direct access to Brazilian gold. At the same time, under the legal framework of the Portuguese colonial system, De Bruijn and Cloots became active participants of trade with Asia, which was a source of significant profits and allowed them to compete with the Dutch East India Company in supplying the European markets with tea, silk and porcelain.

This paper draws on the original papers of this firm, which are currently held in the Portuguese National Archive of Torre do Tombo. Consisting of over sixty volumes, this business archive comprises merchant account books, correspondence, diaries and other financial material and covers the period between 1713 and 1741. The collection has, thus far, remained unknown to scholars. Given its dimension and range, it is quite probably the most complete and integrated surviving archive of a merchant house that conducted business in Portugal in the first half of the eighteenth century.

We tackle the premises of the session, by focusing on the reasons why this firm was so successful in encroaching into the Portuguese colonial trade. We will argue that their success lies, on the one hand, on a wide international network, with extensions to London, Hamburg, Amsterdam, Antwerp, Paris, La Rochelle, Nantes, Lyon, Madrid, Seville, Bilbao, Cadiz, Livorno, Genoa and Turin. On the other hand, key factors to their success were also close ties...
to decision makers at the Portuguese royal court and to well-established Portuguese businessmen, which allowed them to extend their connections to Asia and Brazil.

**Elisabeth Heijmans** (Leiden University)

*French colonial business: The case of a governor-entrepreneur in Ouidah in the first half of the eighteenth century*

Institutions and entrepreneurs are often studied as distinct actors of empire building. However, as will be shown, they could overlap. Indeed, the institutional framework offered opportunities for colonial agents to make their own business, be it legal or not. Colonial agents on the West Coast of Africa were notoriously difficult to control. If we are to study the impact of institutions on the economic well-being of firms, we should not overlook the role of the individuals being part of these institutions. This study hypothesizes that loyal colonial servants of the state were not always the best economic partners for French overseas merchants.

I will analyse what could be called a ‘hybrid case’: the example of a French governor-entrepreneur called Bouchel, who was in charge of the fort of Ouidah at the beginning of the eighteenth century. As a representative of the French state in Ouidah, Bouchel managed to forge ties with the local ruler, king of Juda, enabling him to play the intermediary in an advantageous business with Brazilian traders. Because of his illegal activities he was called back to France, however, ten French captains and sailors signed a petition enabling him to stay. Why would French traders protect him? I hypothesize that, due to his extended African and Brazilian networks, Bouchel was good for the business of French traders. And that therefore, the most competent business partners for French merchants trading in Africa were not necessarily the most loyal to the French state’s interests. In this paper, I focus on the intersection of overlapping interests between French overseas merchants and state agents and how it was operationalized in the case of Ouidah.

**Silvia Marzagalli** (Université Nice Sophia Antipolis)

*The Atlantic World between markets and state in eighteenth-century France: the Sephardim firm Gradis in Bordeaux*

This paper deals with the strategies that the Gradis family – a prominent Sephardim merchant firm of Bordeaux – adopted in the long eighteenth century to expand business and profits within the French empire. Starting in the 1720s, the Gradis abandoned textile trade and invested exclusively in West Indian trade and shipping, taking advantage of the expanding French colonial production, and occasionally smuggling into the Spanish Main. Despite the exclusion of non-Catholics from the French colonies, David Gradis settled some of his Jewish relatives in the West Indies, who served him as agents and promoted his commercial interests. The profits of colonial trade enabled the firm to expand activities and to dispose of sufficient capital to meet the French state’s needs in times of war. In the late 1740s and during the Seven Years’ War, the firm Gradis increasingly supplied the French colonies, and notably Canada, with victualling and money on the account of the French Crown. The firm was one of those who could advance millions of livres tournois to fit out ships, and afford consistent delays in payments from the government. The services Gradis rendered to the state in times of war procured the firm competitive commercial contracts in peace-time, when Gradis associated with officers in Canada in the early 1750s in what was to become the affair du Canada, but they also led to them obtaining extremely lucrative financial contracts with the French state to provide Guyane, Gorée and Saint Domingue with the money the king sent to local officials.

Banking and financing the French state came to represent the bulk of the firm’s business over time. From the 1760s onwards, the firm reduced the number of its commercial ventures across the Atlantic compared to previous decades, but still invested occasionally in colonial and slave trades, probably shipping cargoes to and from their own plantations. In
1766, Gradis had acquired a sugar plantation in the West Indies from one of his debtors. The firm acquired other plantations in the following years. At the eve of the French Revolution, Gradis was one of the two most prominent firms in Bordeaux.

Gradis’ participation and diversification of activities within the French Empire, and its peculiar mixture of private ventures and contracts with the state throughout the eighteenth century, had enabled the spectacular rise of the house. Whereas the Gradis managed over the greater part of the century to adapt to the alternation of peace and wartime trade and to the changing conditions of transatlantic trade, their merchant house was faced however, after the outbreak of the French Revolution, with the intrinsic limits of a French empire based on slavery and incapable of facing British naval mastery to keep control over its colonies. By 1788, almost half of the Gradis’ capital was invested in West Indian plantations, mostly in Saint-Domingue, whereas a quarter of its assets were due from ‘bad’ debtors in the West Indies: The firm was thus heavily affected by the Haitian revolution. During the French Wars (1793-1815), the Gradises paid the price of their choice to increasingly concentrate business within the French empire and of their close connections to the French monarchy. At the age of 57, Moïse Gradis emigrated in 1794 to Philadelphia in order to try, in vain, to recover the family’s plantations in Saint Domingue. He moved in 1800 to Martinico where he took over the direction of his sugar plantation, which still yielded consistent profits. Moïse’s correspondence at this time shows a clear shift from merchant to planter mentality, for instance when he complains about the high prices of slaves. Moreover, in offering Toussaint Louverture to acquire half of his plantation in Saint Domingue, Moïse still conceived its relation to authorities as a key of the firm’s success in times of warfare. His nephews in Bordeaux were too young to try to take advantage of other opportunities of business in a wider Atlantic World, and they possibly lacked the necessary contacts to carry trade on neutral account across the Ocean, which procured consistent success to some French houses in Bordeaux who were able to dispatch a relative to the United States.

The case of Gradis illustrates the opportunities that an expanding Atlantic world offered to French firms, both in private shipping and trade, and in the state’s contracts to sustain the empire. However, by placing all their assets in the first French Empire, the Gradis did not escape the consequences of its collapse.
Unreal wages? A new empirical foundation for the study of English living standards, 1260-1860

Real wages underpin accounts of long-term economic, social and demographic history. They are used to chart the pace of economic development and they form the backbone of comparative welfare analyses and the great divergence debate. Yet, current measures suffer from a fundamental problem well-known to the scholarly community: ignorance of workers’ annual incomes. Existing real wage series are estimated using the day rates paid to casual workers, who made a living going from job to job. The problem is that it is difficult if not impossible to recover the number of days worked from the surviving records. Previous work has circumvented this problem by assuming that casual workers always and everywhere worked 250 days per year (e.g. Allen 2001; Allen 2007; Allen et al. 2011; Allen et al. 2012). While reasonable today, in the historical context, as John Hatcher (2011) has emphasized, this assumption is deeply problematic. It involves two controversial suppositions: first, that casual work was universally available 250 days per year; and, second, that casual workers universally supplied 250 days labour regardless of prices and wages. Hatcher’s criticism was focused on England, where evidence suggests that the working year varied widely from 165 days during medieval times to 336 days during the industrial revolution (Allen and Weisdorf 2011). If these numbers are even roughly correct, they imply that existing proxies overestimate medieval incomes as much as they underestimate industrial incomes by more than 30 per cent per year. The discipline’s best guesses are way off target.

There are further ramifications when the wage guesstimates are confronted with developments in output per head. Economic theory, supported by contemporary data, holds that labour’s share of national income stays roughly constant over time, implying that real wages and output per head move together. But historically real wages and output per head moved only intermittently in tandem, and episodes of divergence have required incorporation into the mainstream narrative. One such episode occurred c.1350 when real wages apparently surged while output per head stagnated, interpreted as a ‘golden age of labour’ during which the demographic catastrophe of the Black Death benefited workers at the expense of land owners (e.g. Postan 1966; Dyer 1989). A second episode, known as ‘Engels’ Pause’, occurred c.1650 when real wages appeared to stagnate while output per head grew, explained by technical progress which skewed income in favour of profits (Allen 2009). Emerging and competing views question the foundation on which these narratives build, suggesting that the discrepancies between real wages and output per head are artefacts of the assumption of 250 working days per year, which Hatcher (2011) holds to grossly overestimate annual casual employment during medieval times, and Broadberry et al. (2015) claim overlooks the possibility of extended working – an ‘industrious revolution’ (de Vries 1994) – as prelude to the industrial revolution. Ignorance of working patterns bars testing these hypotheses.

This paper proposes a new approach. Focus shifts from casual day wages to payments made to annual workers who, while long a considerable component of the English workforce (Kussmaul 1981), have been overlooked in secular welfare analyses. The key advantage of this fresh focus is that annual remuneration read directly from the sources, eliminating the need for ancillary assumptions about days of work. Although some annual workers remained in post, they were normally free to leave when the year was up to seek better paid work, including day labour, a freedom they readily exploited (Youngs 1999). Such mobility acted to keep annual workers’ remuneration in touch with what could be expected from casual employment. Similarly, if annual work was more rewarding, perhaps because there was insufficient casual work available, the movement of casual workers into yearly contracts would equilibrate the market, even if day wages involved a premium for employment
uncertainly. If labour market arbitrage was even partial, payments for annual work make a good proxy for casual workers’ yearly earnings. This provides us with a new benchmark real-wage series for England, 1260-1860.

Our series is based on over 6,000 payments made to unskilled annual male servants collected from diverse primary, secondary and printed primary sources. Perquisites were imputed as the monetary value of one of Allen’s ‘respectability’ baskets and added to the cash salary (see Humphries and Weisdorf 2015). Real wages were then obtained by dividing the worker’s total annual remuneration by Allen’s consumer price index (Allen 2007).

The resulting real wages differ in both levels and trends from the conventional, much used indices. Two findings stand out (figure 1). First, the post-Black Death ‘golden age’ was not golden only for labour, but for the economy more broadly, witness the closer fit between real wages and output per head. However, our new golden age glittered much less than estimates from casual work have suggested, as the post-Black Death real-wage peak was surpassed by the mid-seventeenth century, and not as some authors have contended much later (e.g. Clark 2007). Second, our real wages show continuously rising living standards after 1650, in stark contrast to the widespread view that the English economy did not escape its ‘Malthusian trap’ until after 1800 (e.g. Clark 2008; Galor 2011). Our series thus fits the ‘consumer revolution’ visible in seventeenth- and eighteenth-century probate inventories’ inclusion of novelty commodities (e.g. McKendrick et al. 1982; Thirsk 1978), and it speaks to the mounting dissatisfaction with the Malthusian model for the early modern period (e.g. Persson 2008). Our real wages also question the existence of an ‘Engels’ Pause’, with only a modest gap between wages and output per head after 1600. The rising gap between income from casual and annual work suggests that perhaps ‘industriousness’ was important in explaining England’s early wealth.

Sources: Allen (2009), Broadberry et al. (2015), and Clark (2007).
Mark Hailwood & Jane Whittle (University of Exeter)

*Women’s work in rural England, 1500-1700: an approach based on incidental evidence in court records*

This paper will introduce to conference delegates a major new Leverhulme-funded research project on women’s everyday working lives in rural England, 1500-1700. The project, based at the University of Exeter, is being undertaken by Professor Jane Whittle (PI) and Dr Mark Hailwood (RA). The aims of the paper will be: to raise awareness of the project within the field of economic history; to explain the methodology adopted by the project; to offer preliminary analysis of the data collected in the first year of the project.

Approaching the history of women’s work with the same methodology as men’s produces limited results. For instance, while many early-modern documents describe men by their occupation, women are usually described as single, married or widowed. Evidence of women’s wages is illuminating, but is unable to tell us much about the majority experience of women’s work in early-modern England: unpaid work in rural households. Instead, this project is collecting and quantifying incidental evidence about work activities from manuscript court documents. This approach is not entirely untested: it was pioneered by Sheilagh Ogilvie in her 2003 study of early modern Germany and is currently used by Maria Ågren’s ‘Gender and Work’ project on pre-industrial Sweden. Here it is adapted and developed for the English evidence. Data are being gleaned from the documents of three types of court: church courts which dealt with disputes over probate, marriage and sexual behaviour; quarter sessions which were county-level criminal courts; and coroners’ rolls which record accidental deaths. These documents record the approximate date, time, place and nature of activities people were engaged in when an incident took place, as well as the names and gender of the people concerned. Each court has a slightly different bias; using them together will help to balance the results. Initial scoping exercises with samples of documents predict that a total of 5000 observations of work activities will be collected, of which between 20-25 per cent will relate to women. Evidence will be collected from five counties forming a swathe of south and west England from Hampshire to Cornwall, selected because they contained a range of agricultural regimes and rural industries, some of which favoured women’s employment and some which did not.

This paper will outline the definition of work that the project is employing – one based on Margaret Reid’s ‘third party criterion’ and adopted by the UN. It will also explain the criteria we are using to identify work activities in the archives, where our focus is on instances of (a) a specific individual (b) professing to have done/observed doing (c) a specified work activity. Finally, we will present some of the initial findings of the project, with a particular focus on the gendered division of labour we have found across different sectors of the economy, and we will offer comparisons of our results with those of other recent explorations of women’s work, such as those undertaken by Ogilvie and Ågren.

Brodie Waddele (Birkbeck, University of London)

*Measuring the rise of the parish welfare state in England, c.1600-1800*

In the late sixteenth century, the famed Elizabethan poor laws commanded every parish in the kingdom to relieve their poor residents though local taxation rather than private charity. By around 1800, England’s parishes were spending more than £4 million per year on poor relief. This paper examines the long-term rise of the so-called ‘parish welfare state’ in this period through a new dataset based on annual expenditures on relief from a sample of more than 150 parishes, created by the author and Jonathan Healey.

This paper will introduce the new dataset, outlining the process by which it was assembled and the methodology used to calculate annual relief totals at the national level. Its strengths and weaknesses, including coverage and representativeness, will be assessed. The preliminary results of this project can be compared to previous ‘snapshot’ estimates, showing, for example, that spending on relief in the mid-seventeenth century was likely significantly
higher than previously thought. The new series can also be compared to other indices such as population, inflation and GDP to show how the growth of poor relief related to wider demographic and economic changes. In addition, analysis of the figures from specific groups of parishes demonstrates the importance of urban/rural, arable/pastoral, and north/south contrasts. By looking at per capita spending in sub-samples, we can see contrasting "local ecologies of relief" which meant that the support for paupers in, for example, the rural northwest was dramatically different from that of the urban south. Finally, the new series indicates that poor relief did not grow slowly and steadily across the period, but rather experienced alternating phases of expansion and retrenchment, with minimal growth c.1650-90 and c.1710-40.

**William Farrell** (University of Leicester) & **Tim Reinke-Williams** (University of Northampton)

*Apprentice migration to early modern London: A four nations approach*

The formation of human capital was an important part of England’s economic development. London acted as a hothouse of this process, drawing in young adults from well outside its boundaries to take up apprenticeships. Facilitated by the City’s Livery Companies, apprenticeships gave people the opportunity to acquire the skills and knowledge necessary for economic life. Previous studies of the migration field for London apprentices have concentrated on England. Studies have also highlighted the importance of skilled migrants from continental Europe. We look beyond England, and away from the Channel, to examine the contribution of the other three nations of the British Isles. As such we are heading Nicholas Canny’s call for an integrated socio-economic history to mirror the work on politics and state formation in Britain and Ireland.\(^{623}\)

Using the Records of London’s Livery Companies Online (ROLLCO) we have created a dataset of apprentice migrants in ten Livery Companies between 1600 and 1800. This includes some of the major companies such as the Goldsmiths, Clothworkers and Mercers. We assess the relative contribution of pull and push factors that attracted apprentices from Wales, Scotland and Ireland to the capital. In particular, the paper focuses on the role of regional economies, family and kin networks, and urban development. The influence of political events, such as the Civil Wars, on migration patterns is examined. Finally, we consider what this tells historians about the extent of economic and social integration of Britain and Ireland in the early modern period. Studies of London’s migration field within England suggest it drew people from across the counties in the seventeenth century.\(^{624}\)

Whether London drew apprentices from across the British Isles, or from specific regions, is assessed here. As such, the study also provides a test for the dominance (or not) of London and England in this period.

**Keywords:** migration; apprentices; human capital; Britain; Ireland.

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**Human Capital**

**Jeremiah Dittmar** (London School of Economics) & **Ralf Meisenzahl** (Federal Reserve Board)

*Origins of growth: Health shocks, institutions, and human capital in the Protestant Reformation*

We study the long-run impact of the legal institutions of the Protestant Reformation on growth across German cities. We compare Protestant cities that formalized the Reformation in municipal law to Protestant cities that did not and to cities that remained Catholic. Cities with reformed legal institutions grew significantly faster over subsequent centuries. We show that local exposure to disease epidemics in the immediate run-up to the Reformation generated exogenous variation in institutional change. Using these health shocks as an instrument for institutional change we find support for a causal interpretation of the relationship between municipal institutions and growth. These institutions established pioneering experiments in mass public schooling and narrative evidence strongly suggests the growth effects ran through a human capital channel. We use novel microdata to show that after the passage of legal reforms cities with Reformation laws began differentially producing more residents with upper tail human capital and attracting more high skilled migrants.

**Gregory Clark** (University of California, Davis) & **Neil Cummins** (London School of Economics)

*The determinants of inheritance? A genealogical enquiry, England 1750-2014*

This paper reports an investigation of the determinants of the inheritance of a variety of aspects of social position – health, wealth, education, and occupation – across a genealogy of seven generations of English families 1750-2014, constituting 59,000 individuals. In principle inheritance could derived from family cultures, family resources, social networks, or genetics. But using this extensive genealogy we are able to derive testable predictions for each mechanism of transmission and test them against the patterns in the data. If genetics dominates there will be, for example, a very specific pattern of correlations, demonstrated in the paper, in attributes across people of different degrees of relatedness. One simple prediction of a genetic transmission mechanism, for example, not implied by any other transmission mechanism, is that the correlation in characteristics between brothers should be roughly equal to that between father and son. We will see this holds for all characteristics except for wealth, where wealth at death correlates more closely between brothers than between fathers and sons. Also, assuming mating is similarly assortative, a genetic mechanism implies stable intergenerational correlations across very different social regimes from 1750 to 2015 despite huge changes in public provision of education. A genetic transmission mechanism, however, implies specific correlations even for people as distantly related as second and third cousins. Using the genealogical structure of the data we show that for all characteristics except wealth, the pattern of correlation across people of different degrees of relatedness is consistent with genes being the main transmitters of social status. The implied correlation of genotypes between parents and children is high, in the order of 0.7-0.8. This is only possible if marriage is highly assortative by genotype. We are able to show by comparing brothers and brothers-in-law that marriage in England, even in the nineteenth century, was assortative enough to maintain these high intergenerational correlations in underlying characteristics. We are also able to test for patterns that would be signatures of social transmission mechanisms: family size effects, birth order effects, grandparents mattering to predicting grandchild outcomes only when they were alive when the grandchild was born, wealth effects on other outcomes such as health. Except for wealth, something that is explicitly transmitted socially, we find no signatures of important social pathways in status transmission between generations.
Protectionism and the education-fertility trade-off in late nineteenth-century France

The assumption that education and fertility are endogenous decisions that react to economic circumstances is a cornerstone of the unified growth theory that explains the transition to modern economic growth, yet evidence that such a mechanism was in operation before the twentieth century is limited. This paper provides evidence of how protectionism reversed the education and fertility trends that were well under way in late nineteenth-century France.

To illustrate our argument, we construct a simple model that captures the quantity-quality trade-off. Our economy has two sectors, agriculture and manufacturing, and we suppose that human capital is productive only in the latter. Investment in children’s education is determined by the relative return to education, that is, by the wage in manufacturing relative to that in agriculture and by the probabilities of being employed in one or the other sector. An increase of agricultural price increases wages in farming and the employment share of the sector, thus reducing the return to education and leading to lower investments in human capital. Because parents spend fewer resources in children’s quality, they respond by increasing their quantity, and the tariff results in higher fertility rates.

Our identification strategy relies on a major policy change. Following the ‘grain invasion’ of Europe, cereal prices in France plunged, resulting in a major income loss for cereal producers (O’Rourke, 1997). Political pressure led to the adoption of the Méline tariff in 1892 (Dormois, 2012), which triggered a substantial increase in agricultural wages.

To take the model to the data we exploit France’s division into administrative districts and use this protectionist shock and the differences in cereal production at the district level to study whether districts more intensive in cereal production changes more their education and fertility behaviour after the introduction of the tariff. We use two measures of education, enrolment rates in primary education and completed education at age 20, as given by data on army conscripts. Our findings indicate that the tariff reduced education and increased fertility. The magnitude of these effects was substantial, and in regions with large shares of employment in cereal production the tariff offset the time trend in education for up to 15 years.

The paper contributes to the literature concerned with identifying the determinants of parental choices between fertility and education. Our evidence supports the existence of such a trade-off in the second half of the twentieth century, in a country that had already experienced its fertility transition. It is also related to the literature documenting the impact of late nineteenth-century protectionist policy on economic outcomes. Numerous studies have found that protectionism was associated with higher growth rates (Bairoch, 1972, O’Rourke, 2000, Jacks, 2006). We document that within France the districts that benefited the most from the tariff had the strongest negative effect on children’s education.

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Gabriele Cappelli (University of Tuebingen) & Michelangelo Vasta (University of Siena)

Does centralization foster human capital accumulation? Quasi-experimental evidence from Italy’s Liberal Age

The effect of reforms aimed at decentralized education systems has been largely explored in the field of economics and economic history. According to Goldin (2001) and Lindert (2004), school autonomy allowed communities characterized by broad voting franchises to voice their preference for public education funded via tax-payer money, whereas in a centralized system they might have been dragged back by voters who were neutral or hostile towards public schools. Therefore, the combination of autonomy and broad franchise improved human capital accumulation and fostered the economic performance of the U.S. and Germany in the twentieth century.

However, recent works have shown that decentralization can hamper aggregate human capital accumulation in the presence of large economic and institutional regional disparities within countries, mainly as a result of limited wealth, income and political voice in more backward areas (see e.g. Go and Lindert 2010, Chaudhary, Musacchio, Nafziger et al. 2012 and Cinnirella and Hornung 2013). Despite the agreement surrounding the potential drawbacks of decentralized education systems, research on the impact of centralization in the past has remained quite dormant, with few exceptions (Lindert 2004: 105, Mitch 1986, Cappelli 2016).

In this paper, we aim to provide quasi-experimental evidence on the issue by looking at the case of Italy in the late Liberal Age – as the country switched from a decentralized to a centralized education system at the beginning of the twentieth century. Following the Daneo-Credaro Reform (1911), the governance and funding of primary schools was transferred from the majority of the city councils to empowered (and partially elective) provincial schooling boards. However, some of the most important cities were left out, like most of the district and provincial capitals. To our knowledge, this is a unique feature in educational reforms across European countries during this historical phase. By exploring Italy’s compendium of laws and royal decrees (Gazzetta Ufficiale) for several years between 1911 and 1922, we identify the city councils that remained autonomous and those whose schools were managed by the schooling boards. By doing so, we assess the impact of centralization by exploring the growth of literacy rates and other variables of schooling in two distinct samples: one made by all the cities that retained school autonomy (c. 270) and one including a 10 per cent random stratified sample of counties whose school management was shifted to provincial boards (c. 800 municipalities).

We are fully aware that the assignment of the ‘treatment’ (centralization) in this context is correlated with municipal features that were very likely to influence educational outcomes directly: provincial capitals were probably granted autonomy because they had more schools, were richer and better organized than other municipalities, e.g. those in the countryside. Therefore, we also implement quasi-experimental techniques: we use Propensity Score Matching in order to estimate the probability of being ‘treated’ with centralization based on municipal variables in c. 1911 – so that we can obtain a sample where being centralized is as if randomized (Rosenbaum & Rubin 1983, Crump et al. 2009; see also Semrad 2015 for an application to the economic history of Bavaria). Secondly, we aim to use a Difference-in-Differences estimator to compare the growth in educational outcomes across municipalities that were characterized by a similar human-capital trend and shared similar features – hence making for an effective identification strategy that is robust to endogeneity.

**Keywords:** centralization; education; schooling, Italy; quasi-experiment.
References
**IV/E Institutions, Growth and Development**

**Muhammad Zubair Abbasi** (Lahore University of Management Sciences)

*Law and economic efficiency: English private property law and Muslim family endowments (awqāf) in British India*

The transformation of indigenous legal norms into state service under colonialism is a well-told story. Relatively lesser attention is paid to the response of natives who were subjected to the transformed law. This paper measures the response of Indian Muslims to the private property law regime for land introduced by the British in India in the late nineteenth century. This study is based on a database created out of the cases decided between 1800 and 1950 by the Judicial Committee of the Privy Council – the highest court of appeal in the British Empire. Contrary to the widely held notion, it shows not only that Indian Muslims played an important role in the development and operation of the legal system as legal commentators, lawyers and judges, laymen also adjusted their modes of disposal of landed property by taking into account developments in case law and statutes.

This paper analyses the origins of various types of Muslim endowments (awqāf, singular waqf) in the social and political context of various Indian provinces. These provinces were subjected to different property law regime. It challenges the traditional view proposed by Kozłowski that the family waqf originated in British India as a result of the strict application of Islamic inheritance law and the introduction of private property regime under the English legal system. Rather, it shows that the pattern of the creation of endowments was affected by multiple factors which included politics, history and law. The land policy of the East India Company and confiscation of properties after the 1857 uprising were important political factors which affected the establishment of endowments. This study contributes to the debates on law and development, colonialism and law, and legal transplants.

**Nauro Campos, Menelaos Karanasos, Panagiotis Koutroumpis** (Brunel University) & **Michail Karoglou** (Aston University)

*Apocalypse now, apocalypse when? Economic growth and structural breaks in Argentina, 1886-2003*

Kuznets famously singled out Argentina once. It is the only country in the world that was developed in 1900 and developing in 2000. Although there is widespread consensus about the occurrence and uniqueness of this decline, the debate about its timing and causes remains intense (Taylor, 2014).

When did the decline start? The aim of this paper is to offer a first comprehensive assessment of the timing of Argentina’s debacle. It uses an array of parametric and non-parametric structural break tests on a range of GDP series for Argentina from 1886 to 2003. The goal is to provide robust estimates of the year(s) in which the decline started.

One may ask why so many different tests and so many different GDP series? Regarding tests, it is important to go beyond and complement the classical approach embodied in the Chow and Bai-Perron (1998) frameworks. These frameworks focus on structural breaks in the mean, while in many situations (like the one here), breaks in the variance may be of even more consequence. Concerning the various GDP series, recall that before WWII estimates of national income were based on readily available components (such as imports, exports or government revenues). The existence of different GDP series is due, principally, to different components, methodologies and deflators.

Summarizing results from various tests and multiple series is not straightforward. Our main conclusion is that there is econometric evidence for two significant structural breaks: one in year 1918 and the other in 1948.

The first key structural break for 1918 refers to a range of Argentinean GDP per capita series. The second key structural break for 1948 is more complicated because it refers to breaks in the behaviour of ratios of Argentine GDP relative to other countries. The 1918 break
Academic Session IV / E

mentioned above is for absolute per capita GDP series, not for the ratio of, say, Argentina’s and the Western Europe’s series. Focusing on the ratio of per capita GDPs in Argentina to Western Europe, we estimate two structural breaks: one in 1914 and the other in 1948. While the former supports the so-called ‘early retardation hypothesis,’ the latter is consistent with the claim the Argentine debacle is a post-WWII phenomenon. Relative to the Western Offshoots (U.S., Canada, New Zealand and Australia), structural breaks are detected for years 1930 and 1947, with the former supporting the so-called ‘late retardation hypothesis’. Finally, focusing on the ratio of per capita GDP in Argentina to per capita GDP in Latin America, 1948 emerges again as a key break. In short, the second key structural break occurs either in 1947 or 1948 depending on which ratio one emphasizes. The first structural break is less clear-cut because based on absolute Argentina per capita GDP it is 1918, with respect to Western Europe it is 1914, and regarding the Western Offshoots it is 1930. We settle on 1918 as a qualified average.

These findings shed light on the debate on Argentina’s decline because previous research offered a range of dates. Some scholars argue that the debacle started with the Great Depression (Diaz-Alejandro, 1985); Conde (2009) associates its beginning with WWII; Taylor (1992) argues for a turning point around WWI; and Villarroya (2005) detects a key structural break in year 1899. Previous research does not always present econometric evidence in support of proposed break dates. Thus the need for a comprehensive analysis is understandable. Our results highlight an important role for comparator groups. For the case of the Western Offshoots, the Great Crash of October 1929 looms large as the break we detect is in 1930. On the other hand, with respect to Western Europe, 1918 is the detected break, suggesting roles for the disruption of finance, trade and migration surrounding WWI. Hence our results allow for a more nuanced understanding of the onset of the Argentine debacle.

The main finding is that of support for two significant structural breaks: one in year 1918 and the other in 1948. Such structural breaks are consistent with explanations for the relative decline of Argentina that have received econometric support. Campos et al. (2012) evaluate a range of explanations for the Argentine decline and find stronger backing for financial development and institutions (political instability) than for alternatives such as trade openness, public deficits and macroeconomic instability. One way to connect findings about underlying causes with those about timing is to note that the slowdown of domestic financial development coincides with the First World War and the rooting of political populism is clearly evident after 1948. The latter is a year of severe financial crisis and intense strike activity. It is also when Perón learns that the U.S. decided to exclude Argentina’s exports from the Marshall Plan, thus denying access to the soon-to-be-booming European market.

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**Hanaan Marwah** (London School of Economics)

*Beyond ‘corruption’ in Nigeria: Revisiting state and state-owned enterprise successes and failures 1950-85*

The dominant contribution of rent-seeking and corruption to the inefficiency of state enterprises and entities in Nigeria between 1950 and 1985 has long been considered an established fact. However, the true picture is much more nuanced than has been portrayed. This paper uses a new series of case studies to suggest that other, more significant, factors were involved in the decline of Nigerian state-owned enterprises, and indeed there were significant successes as well as failures in these entities over these crucial early decades of independence and oil riches. Drawing on a series of investigations carried out by the colonial and post-colonial government, it argues that the basic characteristics of state employee rent seeking were known (malpractices in hiring, irregularities [stealing], land, and contracts) – and indeed became entrenched – during the colonial period. It also argues that in spite of ubiquitous rent seeking, some of the most significant state enterprises including the Nigerian Ports Authority and Electricity Corporation of Nigeria (ECN) were performing well at least through the mid-1960s. Although the scale of rent seeking increased with the oil boom of the 1970s, declines in the performance of these enterprises were due at least as much to lack of trained staff and the strains of coping with their rapid growth as with patterns of rent seeking. This study illustrates the scope for continued research into the functioning of the many and significant state owned enterprises and the sectors in which they operated. This research is crucial to understand economic history and public finance as well as state formation and political history in Nigeria during this period. It is not sufficient to explain poor Nigerian government and economic performance with the simple terms ‘corruption’ and ‘mismanagement’.

**Keywords**: Corruption; state formation; infrastructure; business history; resource curse/commodity boom; colonization/ decolonization, Nigeria/Africa, state owned enterprises, rent-seeking.

**Victoria Bateman** (University of Cambridge)

*Women and economic growth: the European marriage pattern in the context of modern day countries*

In recent years, the European Marriage Pattern has received renewed attention. Van Zanden and De Moor (2010) and Voigtländer and Voth (2006) have argued that factors such as a high age of female first marriage and the formation of nuclear families had a strong hand in explaining why certain parts of Europe, notably England and the Netherlands, were successfully able to advance, and, by inference, why Europe was able to overtake the East. Underlying this story is a more general hypothesis of female empowerment, particularly in the years which followed the Black Death.

Whilst household formation has been generating additional interest, Robert C. Allen’s high-wage (or, more specifically, factor price) theory of the industrial revolution has become a notable new addition to all of our reading lists. The two developments have obvious natural connections. The EMP links neatly with Malthus’ notion of a preventive as opposed to positive check, which, in theory, enables an economy to sustain a level of income above mere subsistence: a higher-wage economy of the kind that, when combined with relatively cheap capital, has the power to produce mechanization and industrialization. Perhaps no longer can we claim that Western success was built on the back of (largely male) entrepreneurs and inventors; the decisions of the everyday woman about family, work and fertility were, perhaps, just as important.
At a time of growing interest in feminism, and when global bodies such as the World Bank are placing emphasis on gender equality as a means to economic development, this type of explanation of European success has significant potential appeal in the wider public domain. With this wider modern day agenda in mind, a small number of economic historians have begun to link the EMP with conditions in modern day developing countries (see, for example, Engelen and Puschman, 2011, and Carmichael, 2011). However, the future contribution of economic historians to this more general debate comes with one important caveat: the potential inability of the EMP to explain Europe’s early success (Dennison and Ogilvie, 2014), and a serious challenge to the binary Malthusian distinction between the West and the rest in the early modern period (Lee and Wang, 1999).

Further exploration is clearly required and there is a particular need to bring together the type of work conducted by economic historians with that of economic growth theorists. As such, this paper uses data on modern day countries to explore whether factors such as the female first age of marriage can deliver economic success, as measured in terms of economic growth, income p.c. and poverty reduction. Econometric analysis is carried out on a sample of over 150 modern day countries, whilst a comparison of China and India provides a more detailed case-study. The results provide support for the notion that female empowerment, as measured through factors such as the age of first marriage, is an important contributor to economic performance and that it can help account for the difference in performance between China and India over the last three decades.
**A city of trades: Spanish and Italian immigrants in late nineteenth-century Buenos Aires, Argentina**

The capital city of Argentina, Buenos Aires, was a major destination for migrants during the age of mass migrations, in particular for Italian and Spanish immigrants. This paper addresses an old question in the literature: the performance of immigrant workers in the labour market using new quantitative evidence. The literature presents Italians in Buenos Aires as a very successful community with artisan skills and a fast assimilation to the host labour market. In turn, Spaniards are depicted as unskilled labourers in spite of higher literacy rates and linguistic advantage. Using a new sample for Italian and Spanish workers in Buenos Aires from the original files of the Argentine national census (1895) and urban wages from an array of sources, we analyse differences by occupation and wages for these two immigrant groups and the native population. We do not find significant variations in earnings between Italians and Spaniards despite differences in the occupational structure. Immigrants were not marginal in the labour market and in fact they outnumbered natives in several skilled occupations. We offer some explanations to the Italian success in Buenos Aires in spite of similar occupational income than Spaniards. The length of stay in the country and the larger size of the community appear as the most plausible avenues for future research.

**Migrant money: An assessment of migrants’ access to credit in Edinburgh before the First World War**

Migrants, and in particular their contribution to the economy, are in these troubled times more than ever at the centre of the public discourse. The point of contention is the amount of sacrifices that the receiving society must endure and the potential value that the migrants are bringing in to offset it. Past migration movements, whose economic impact has been under researched, can help shine a light on this subject. Moreover communities that resided in the U.K. for a long time (e.g. the Italians, Germans, Scandinavians, etc.) are hailed as an exemplar model of integration. However, the mechanisms through which they achieved such high levels of integration are virtually unknown.

Some aspects about the social and cultural pressures that they had to face when moving to the United Kingdom are understood. One example of this is from 1905, when the first British law on immigration was introduced to answer the growing popular resentment. Recent historical research, mainly based on qualitative sources, has re-evaluated these early migrants, praising their drive and entrepreneurial spirit (Panayi 2011).

This paper will deliver a comprehensive and systematic analysis of migrants’ access to bank services and credit, which is fundamental when starting an independent business, in a major Scottish city, Edinburgh, in the years before the First World War. With the help of methodologies developed specifically for this research the complete data about the first and second generation migrants, obtained from the census, have been linked to the records from the banking archives creating a novel dataset with a unique scope.

Moreover the nature of the links that the migrant started to form with the various banking institutions will be discussed and compared to the strength demonstrated by the links with the various migrant networks.
Robert Sweeny (Memorial University of Newfoundland)
Gender, discrimination and housing in turn of the century Montréal

In 1903, women owned 28 per cent of the rental units in Montréal, a city where 85 per cent of the residents were tenants. A further 8 per cent of the units were owned by estates, where women might well have shared in management decisions. This is an exceptionally high rate of female ownership; I know of no important sector of the formal economy today where women control a quarter to a third of all activity. But did this high level of female ownership signal real participation and control? After all, in Quebec, the default marriage regime was community of property, where the husband was vested with the management responsibilities for the community. Women could own property as their ‘own’, but all revenues accrued to the community managed by their husbands. Marriage contracts establishing separation of property were possible for future couples, but they were common only among bourgeois Protestants.

We know that over the course of the last half of the nineteenth century Montréal became highly segregated along both linguistic and religious lines. My earlier research, focusing on 1880-81, showed that Protestant landlords played a much more active role in promoting discrimination than did Catholic landlords and that their active exclusion of difference was in greatest evidence among small proprietors and in those city wards that bordered on strongly divergent wards. In the 1890s, large-scale immigration from eastern and southern Europe created greater ethnic diversity in Montréal and this was complemented by smaller immigration streams from greater Syria and south-eastern China. Where did members of these new ethnic and religious communities find a home?

This paper uses a new historical GIS of all properties in the city in 1903 linked to an exceptionally large 30 per cent sample of the 1901 manuscript census to answer these two questions. If the latter question is of obvious interest to current discussions around immigration and multi-culturalism, this paper also provides a robust way to test for women’s agency. Did landladies rent to different people than landlords? By contrasting the leasing practices of widowed, single and married landladies with landlords drawn from the same cultural communities, this research reveals what differences gender and their associated legal rights made in their respective property management strategies.

Prashant Bharadwaj (University of California, San Diego) & Rinchan Ali Mirza (University of Oxford)
Displacement and development: Partition of India and agricultural development

The partition of British India in 1947 resulted in one of the largest and most rapid migrations in human history. It led to the unprecedented mass migration (also termed as a ‘population exchange’) of nearly 17 million people, and a human rights disaster involving nearly a million deaths in the wake of the riots that ensued between Hindus and Muslims on either side of the newly created India-Pakistan border.

Mass migrations, institutional upheaval, and partitions are a reality even today. The most recent example being that of Sudan where in a referendum held in January 2011 in the south showed that an overwhelming 98.8 per cent of the population were in favour of secession. As a consequence, constitutional declaration of the independence of South Sudan took place on 9 July 2011. The other recent example is the Dayton peace agreement of November 1995, which led to the partition of Bosnia and brought an end to the Bosnian War. Yet another prominent example is the partition of Cyprus into Greek and Turkish speaking separate territorial units after the Turkish invasion and occupation of Northern Cyprus in 1974. It is important therefore to understand how communities and areas develop long after such events take place and what their longer term impacts on development are.

This paper examines the long term consequences of the partition of British India on agricultural development. Our reason for focusing on long-run agricultural development is twofold: first, agricultural outcomes are available at a yearly level, at fine levels of
administrative disaggregation, and over a long period of time; and second, agriculture was, and still is, an important part of employment and economic output. Using migrant presence as a proxy for the intensity of the impact of the partition, we find that areas with more migrants have higher average yields, are more likely to take up High Yielding Varieties (HYV) of seeds, and are more likely to use agricultural technologies within the first 40 years after partition in India. Using pre-partition agricultural data, we show that migrant placement is uncorrelated with soil conditions and agricultural yields prior to 1947; hence, the effects are not solely explained by selective migration into districts with a higher potential for agricultural development. While it would be nice to uncover the precise mechanisms or governmental policies (or lack thereof) that led to these long-run effects, we do not attempt that in this paper. Data limitations and the sheer magnitude of the event makes it nearly impossible to make precise statements about any one leading factor. We do, however, provide some preliminary evidence that the composition of migrants likely played a role in the future agricultural development of more affected areas. Firstly, the in-migrants were more literate than both the natives and the out-migrants, which in turn made them more adaptive to newer agricultural technology and also enhanced their ability as farm managers and cultivators.

Given the positive correlation between education and the take up of agricultural technologies (Feder, Just, and Zilberman, 1985), the demographic changes induced by partition could be a plausible channel for the effects seen. Secondly, the occupations they were concentrated in prior to partition gave them a comparative advantage over the natives in skills that were crucial to agricultural development post partition. For instance, the Hindu migrants had been engaged in money lending and provided a ‘much-needed source of credit for cultivation’ in the districts from which they emigrated (Raychaudhuri, Habib, and Kumar, 1983). Similarly, the Sikh migrants were either moneylenders or skilled agriculturists whose ability as ‘husbandmen’ and ‘yeomen’ had been acknowledged time and again by the British colonial administrators. Credit being an important aspect of agriculture, especially so for the take up of newer technologies, it is likely that the presence of migrants helped along this dimension as well.

Most closely related to our paper is the work of Banerjee and Iyer (2005), who show that different institutions (specifically practices regarding land rights) during the colonial period had a profound impact on agricultural development long after the British left India. They find that these institutions played an important role after the green revolution, where individual rights to ownership of land were a crucial aspect of districts that were able to take advantage of HYV seeds, fertilizers, and other agricultural technologies.

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625 In 2014 approximately 17% of Indian GDP was made up of the agricultural sector and for the decade prior to that it fluctuated between 18% and 17%. In 2012 as much as 47% of the total Indian workforce was employed in agriculture (data from World Bank Economic Indicators).
Hana Nielsen (Lund University)

*East versus West: Energy transition and energy intensity in coal-rich Europe*

The paper examines energy consumption in Britain, Germany and the Czech lands over 170 years, including both traditional and modern energy carriers. The article is based on new data series on energy sources for the Czech lands, which are compared to energy use in other coal-rich countries in Europe: Germany and Britain. The division of Germany between 1945 and 1990 also presents a ‘natural experiment’ by which the impact of different political regimes can be investigated in a previously unitary polity. Changes in energy consumption are decomposed into effects from population growth, economic growth and energy intensity. It explores firstly the coal transition for coal-rich versus coal-poor countries in Europe, including rates of change and associated energy intensity. It demonstrates that these coal-rich countries exhibited an ‘inverted U-curve’ in energy intensity, even when traditional energy carriers are taken into account, contrasting with previous results for four coal-poor countries in the Northern and Southern parts of Europe, where energy intensity was either declining or remained fairly constant in the long-run.

Secondly, it compares the Eastern and Western European coal economies. The Czech lands had a remarkably different energy history from both Germany (East and West) and Britain after 1945, having developed in a fashion similar to Germany before that time. In contrast, at the macro-level both Germanies show similar trajectories. The paper explores whether the differences observed within and across the Iron Curtain were due to the Czech lands maintaining a heavy industrial structure, by decomposing the energy intensity further into within-sectoral change and between-sectoral change, exploring the role of the industrial sector and a possible service transition, and general efficiency levels. The role of household energy use is further analysed over the long-run and compared across the three countries under the hypothesis that central planning did not only suppress personal consumption levels, but the nature of socialist housing and low car ownership rates counterbalanced the rise in industrial energy consumption.

Sofia Henriques (Lund University)

*Energy efficiency and the productivity race in industry, 1870-1935*

National differences in labour productivity in various manufacturing sectors have been a focal point of many comparative productivity studies, particularly among the Western countries. According to some (Broadberry, 2005; Habakkuk, 1962), labour scarcity in some parts of the world stimulated not only technical progress and shifts in the composition of investment; it also had a tremendous impact on productivity changes within various industrial sectors. This literature has however relegated to a second plane other measures of productivity, for instance the use of fuel and power, which are some of the ‘most homogenous natural resources and the two most comparable to labour’ (Habakkuk, 1962). This is particularly surprising, given the fact that labour productivity differences at a sectoral level are normally attributed to the differential use of energy and capital.

In this paper we focus on the evolution of energy productivity for a group of seven European Countries (Denmark, Germany, Portugal, Spain, Sweden, the Czech Lands and the U.K.) and the United States, each with a varying degree of industrialization, domestic coal resources and trade dependence. The primary aim of this paper is to present new country estimates of manufacturing energy intensities (energy/output), including energy-intensity estimates of 7-9 major product groups which represented the backbone of national industries in the period 1870-1935, that of the ‘first globalization’ and subsequent era of protectionism in the interwar period. This is a particularly interesting period, as it not only captures the
increasing and subsequent decrease in foreign trade flows, but also the effects of the First and Second Industrial Revolution and its impact on industrial structures and technological processes.

The data presented here will allow us to address several questions. First, the scarcity of energy resources and whether this has potentially stimulated an enhanced search for fuel-saving methods. Here one of the major issues is whether the different costs of energy result in different levels of energy productivity across countries or even industrial structures, but also which manufacturing sectors were the most progressive ones in reducing energy consumption per unit of output. Was natural-resource scarcity more or less important in different phases of technological and economic development?

Second, exploring data across a period of 60 years will enable us to investigate where we can identify patterns of convergence in the aggregate manufacturing energy intensity, but possibly also at the level of individual industrial sectors. Is there a pattern of convergence or catch-up to the industrial leader and who was the actual industrial leader in this early period? At the overall level, numerous studies identified energy intensity convergence. Most recently, this issue has been analysed by Mulder (2015), however due to data constraints, his and other studies on energy productivity and the cross-country convergence deal primarily with only very recent periods (since 1980). The study has found that convergence in cross-country energy intensity in manufacturing was mainly driven by the catching-up process from the lagging countries while on the other hand structural changes at the national level had a diverging impact.

Third, we explore the role of trade. Geographical location and increased trade has been suggested as another driver of energy intensity convergence/divergence through a number of potential channels. First, increased trade between core countries and lagging countries can initiate and accelerate the rate of technology diffusion but to some extent also plays a role in the price equalization process. On the other hand, increased involvement in foreign trade and consequently falling transportation costs may result in a geographical concentration of various manufacturing activities which in turn drives the divergence of manufacturing energy intensity, as certain countries specialize in the production of heavy goods. It is the aim of this paper to further investigate this issue from an early historical perspective.

Geographical specialization and the extent to which a country specializes in its comparative advantage have been historically measured by various indices of specialization such as those proposed by Balassa (1965) and Krugman (1991). To address the issue, and to measure the extent to which countries specialized in the production of goods whose energy intensity performance was relatively good compared to the group average, will be further explored by an adjusted Krugman index of specialization (Mulder, 2015). During the last decades, research has found increasing specialization and geographical concentration of industrial production but to what extent did countries in the distant past capitalize on their comparative advantages or were instead driven mainly by domestic policies of self-sufficiency?

References
Paul Warde (University of Cambridge) & Astrid Kander (Lund University)

International trade and the energy intensity in Europe, 1870-1935

An established view in environmental history is that during industrialization environmental stress worsens but as countries reach higher incomes their environments improve, whether because of improved technology, changed preferences, or affordability. This is expressed in the idea of an ‘Environmental Kuznets Curve’ (EKC). As energy consumption is often used as a proxy for environmental stress, the same argument can be made about patterns of energy intensity (energy/GDP). The energy intensity of industrializing countries would follow an inverted U-curve (Reddy et al. 1990). Our earlier research has demonstrated that this is not the case for a number of European countries, but is the case for the U.K. and Germany and their heavy use of coal. In the century 1850-1950 their share of total European GDP and energy consumption was so large that the whole continent’s energy intensity also follows an inverted U-shape.

An objection to arguments around the EKC and energy intensity is that changes may not be explained by factors internal to a country, such as the rise of the service sector reducing energy intensity, but patterns of trade, by which the production of energy intense goods is outsourced. Equally, energy intense production may also be for export rather than domestic consumption. In this paper we will critically revisit the EKC for energy, calculating the net flow of energy embodied in imports and exports. In this period of the ‘first globalization’ and subsequent interwar protectionism we examine both whether Britain and Germany, workshops of the world, in fact ‘exported’ much of their energy consumption embodied in goods at high domestic environmental costs; and the degree to which trade and domestic energy consumption can be explained by specialization in particular traded goods.

This paper presents the first preliminary data of energy and CO₂ embodied in European trade for some critical benchmarks (1870, c.1913 and 1935), using a new database: TEG (Trade, Energy and Growth), under construction in a joint project between Lund University and the University of Cambridge, and funded by the Swedish Research Council. The paper will present the basic input-output methods that have been developed to make these calculations and first results for the U.K., Germany, Sweden, Denmark, Portugal, Italy and the Czech Lands. These show how differences in energy intensity were less substantial when trade is taken into account and calculations made from the side of the consumption of final goods rather than production; and the importance of the production of semi-finished and capital goods for export in the EKC of the U.K. during the industrial revolution.

Dimitrios Theodoridis (Gothenburg University)

The net ecological appropriation of Britain’s trade activities in the nineteenth century: An assessment of the relative importance of natural capital imports and exports

The starting point for this paper is the debate initiated by Pomeranz’s seminal work, The Great Divergence (2000), which analyses the divergent pattern of economic development that was observed between Western Europe and East Asia in the early phases of industrialization. With a special focus on Britain, his key argument was that a major contribution to industrialization was from natural capital, and specifically the import of ‘land’ in goods and raw materials from the periphery and coerced colonies. Similar arguments have been developed in world-system theory as to an unequal ecological exchange and exploitation of ‘ghost acreages’. However, historical studies have generally provided only small amounts of empirical data and usually do not account for the natural capital exports from Britain in the form of fossil fuels – coal – whether directly or embodied in manufactures (and which also provide ‘ghost acreages’ of organic fuel), towards the rest of Europe and the periphery. A more consistent approach is to provide a more complete accounting of goods flowing in both directions.

This paper provides a quantitative analysis based on Britain’s trade statistics from the nineteenth and early twentieth centuries, combined with primary sources and secondary
material to make calculations of natural capital embodied in trade. Using the methodology of the ‘ecological footprint’ or ‘ghost acreage’ and the notion of natural capital the relative importance of aggregate natural capital imports from the periphery can be juxtaposed to natural capital exports. In this way, basic information on the ecological footprint of particular goods is also provided. The ecological dependence of Britain from the peripheral countries can be reassessed after the inclusion of minerals and other resources along with the traded land-based commodities. By translating total material flows into a common unit of measurement, (the equivalent land in the trading nation) it can be tested whether Britain was actually a net acreage (natural capital) exporter rather than an acreage importer during the nineteenth century. Equally, important new information on the relative ecological impact and opportunity costs in terms of land of particular traded goods will be provided.
IV/H  Banking and Business

Lucy Newton & Victoria Barnes (University of Reading)

*Financiers, gentlemen or captains of industry? The first bank directors in England and Wales*

Following the financial crisis of 1825/6, legislation permitted the establishment of joint-stock banks. These banks would operate in competition to the existing cohort of private banks, which operated with a maximum of six partners. The 1826 Bank Act aimed, in principal, to stabilize the banking system in England and Wales by removing the six partner restriction and through the introduction of a new set of banks with an unlimited number of owners. The Act therein provided little or no instruction, or even guidance, about the nature of governance and managerial structures that could now be established in these larger joint-stock banks. Even so, legal ambiguity, the laissez-faire nature of English Company Law, and relative freedom, did not impede or discourage promoters, directors, or shareholders alike. Numbers of joint-stock banks grew: in total, 138 were established between 1826 and 1844 and of these only 19 failed, a failure rate considerably less than that of the private country banks.626

Drawing on a new dataset containing details of around 650 directors from 83 banks, this paper will consider who became a director, as well as establishing their other business interests and activities in industry and commerce. As directors were elected, those who took office were those that had been chosen by shareholders. They were therefore individuals with skills or an occupation that was believed to be of value to the organization. This paper takes the range of occupations found and categorizes them into three groups: financiers (such as private bankers), gentlemen, and finally, captains of industry. In doing so, it establishes what expertise and skills shareholders believed that their directors needed. Why were these individuals elected? Was experience of banking or finance believed to be a pre-requisite in order to carry out the functions of banking safely? Or were commercial skills, more generally, valued? Or was a respected reputation within the community, as a gentleman for instance, more important? We also examine the impact that Board size had upon knowledge and capabilities, to identify if smaller or larger Boards were better qualified in terms of banking and commercial knowledge. Altogether, this paper adds to our understanding of how the roles and duties of directors were defined by contemporaries. It adds to our knowledge of how joint stock banks were run and how they ultimately eclipsed and became more successful than private banks. Alongside the dataset (collected from deeds of settlement of the joint-stock banks established between 1826 and 1844), we use Board of Directors minute books, as well as other archival sources and contemporary banking publications, to establish the ‘ideal’ director type, his characteristics and qualifications.

Andrew Odlyzko (University of Minnesota)

*Financialization of the early Victorian economy and the London Stock Exchange*

Because of its important role in the development of modern capitalism, the London Stock Exchange (LSE) is covered extensively in the modern literature. However, there are still many gaps in our knowledge of that institution. For example, while we do know how many members the LSE had at various times, we know very little of the volume of business or the earnings of the financial professionals of the LSE. Mihill Slaughter, the LSE’s internal statistician, made some estimates of transaction volumes in the 1870s, as reported in his testimony to the 1877-78 Royal Commission on the LSE. But he had to admit that various LSE traders claimed turnover was far higher. The scarcity of information was to a large extent intentional. For example, the LSE deliberately stopped releasing information from its clearing house just a few months after it had been set up.

This paper presents quantitative studies of many LSE activities in the mid-nineteenth century. At that time, around 80 per cent of the securities traded on the LSE were still gilts (British government bonds). Detailed records of gilts transactions are available at the Bank of England (BoE) Archives. They do not have price data, and do not cover trading ‘for account’ between account days that took place (alongside regular trading ‘for cash’) in Consols, the largest and most important of the gilts. Still, these records do provide an unparalleled resource that has not been explored much in a quantitative way so far. By analysing them, and integrating them with other sources of information, such as price lists, and information from banks active in financing the LSE, it is possible to obtain new statistics on LSE activities around that time. By extrapolation, one can then make estimates for later in the nineteenth century, when corporate and foreign government securities came to overshadow gilts.

The ledgers available at the BoE record all transfers of gilts. Digitizing all those records would be a huge undertaking, but even a modest but judicious sampling can provide useful insights. In this project, some data was collected for several gilts in the 1830-60 period. This data confirms in a quantitative form the general opinion of very low turnover, and also provides estimates for various statistics, such as jobber earnings (in total and distribution among jobbers) and the total cost of the LSE to the British economy. It also shows the important role that just a handful of key agents, such as the Hoare bank and William Hammond the Younger, had in providing liquidity and depth to the market.

For some securities, even more was obtained. For example, all transactions in the South Sea Old Annuities (SSOA) from 1838 to 1854 were digitized, and were integrated with the price data from the Course of the Exchange (CoE). They show the flow of funds involving that security, and the impacts of sudden appearances of large sources of either demand or supply.

The SSOA data also puts the CoE price data in a new perspective. Some modern scholars have assumed that the lack of CoE prices reflects lack of trades. But CoE provides a very imperfect record of LSE business, since only transactions over a certain threshold and within certain hours were eligible for recording in the Official List, and there was no obligation for any transaction to be recorded. What was found is that of SSOA transactions, about half were under the recording threshold (although they represented only about 5 per cent of the volume). Of the other half, only about a quarter were actually recorded. Thus CoE gives us a very spotty record of actual business in SSOA. It seems reasonable to conclude that the same applies to a variety of other low-volume securities, and in particular to corporate shares, since the SSOA capitalization was comparable to that of some substantial railways, for example.

The identification of BoE ledger transactions with CoE prices can be done in a large number of cases. Statistical techniques then allow for estimates of what the effective bid-ask spread was. Investment guides often claimed that the high quoted spreads on illiquid securities were just invitations to negotiations. This project provides quantitative evidence of this anecdotal claim. Thus the LSE was more efficient than some studies have deduced that looked just at the quoted spreads.

The contribution of this paper is to fill in some of the missing statistics of LSE operations. Perhaps even more important, this work points the way to obtaining far more detailed information about the LSE from BoE Archives. This project was a very modest one, and with even slightly greater resources it will be possible to obtain better statistics and also to pursue the many questions this research gives rise to.

Andrew Urquhart (University of Southampton) & Robert Hudson (University of Hull)

The inefficiency of war: Evidence from the U.S. and U.K. during WWII

This paper extends the literature on the behaviour of stock markets around times of war by studying the efficiency of the U.S. and British stock markets around and during World War Two (WWII). This investigation is interesting in view of the unusual conditions prevailing
Academic Session IV / H

during the war which might be expected to have affected the extent to which market prices were able to quickly and accurately reflect all relevant information. To varying degrees in the two countries, governments controlled news and there was considerable governmental intervention in the economy with price controls and rationing. There were also distortions in the financial markets and macro-economic management due to the needs of war financing. In addition, war events caused major political risks as well as great physical disruption and human losses.

We provide a robust analysis of the efficiency of the Dow Jones Industrial Average (DJIA) and the Financial Times Industrial Ordinary Index (FT30) before, during and after WWII using a battery of linear and non-linear tests, namely the automatic portmanteau test, the automatic variance ratio test, the Hurst exponent and the Dominguez-Lobato test for nonlinear dependence in stock returns. We also study the effect of WWII on the volatility of the DJIA and FT30.

Initially, we study the efficiency of both stock markets through a sub-sample analysis, where we split our sample period into whole period, prewar, war and postwar periods. We explore the time varying nature of efficiency through a rolling-window approach that enables a closer inspection of the changing nature of efficiency around the war period. Our results show that in the whole period for the DJIA, there is some evidence of nonlinear predictability indicating some level of inefficiency, while all the tests for the FT30 indicate significant inefficiency. In the subsample periods, we find that the prewar period the DJIA shows a quite high level of efficiency, however during the war period, starting shortly after the attack on Pearl Harbour, there is strong evidence that the market becomes more inefficient. A level of inefficiency continues in the U.S. into the postwar period although to a lesser degree than during the war. This result is fairly consistent across our testing procedures. In the U.K. the prewar period exhibits less efficiency than found in the U.S. The FT30 is quite inefficient during the war and actually becomes even more inefficient in the postwar period.

Our volatility analysis shows that WWII had a significant impact on the volatility of both the DJIA and FT30 indicating a decrease in the level of volatility during WWII. As well as the general economic distortions mentioned above, volatilities could be particularly affected by the fact that prices failed to react to information as quickly during the war due to the censorship of mass media or the fact that trading volume was much lower during the war period.

The contrasting experience of the two countries perhaps reflects both the level of development of their financial markets and their different war related experiences. Our results support the idea that the U.S. market was much more developed at the time than the FT30. That is, the U.S. market was deemed fairly efficient up to the point of the U.S. entering WWII while the U.K. market was inefficient even before the outbreak of war. Therefore our analysis is consistent with the notion that more developed markets will experience higher levels of efficiency than lesser developed markets.

The war will have had relatively greater economic impact in the U.K. due to its more prolonged nature and the proportionately greater physical destruction and human casualties incurred. In addition, economic controls were more sweeping and more prolonged in the U.K. Nonetheless the markets of both countries show substantially greater levels of inefficiency after they entered WWII. Thus one consequence of war seems to be a measurable decrease in the efficiency of the financial markets in allocating resources.

Furthermore, from the viewpoint of financial theory, our results are consistent with the notion that markets are adaptive with levels of efficiency fluctuating over time rather than being static or simply moving towards ever-greater efficiency. Given our results it is clear that exogenous events can have a very substantial effect on market efficiency.
Pedro Neves (Universidade de Lisboa)

Business in Portuguese colonies during the twentieth century: the Burnay group, natural resources and foreign capital

The banking house Henry Burnay & Co., later Banco Burnay, was founded in 1875 and soon became the head of a diversified business group, maintaining a major position in the Portuguese corporate sector until the political turmoil of the mid-1970s that led to the nationalization and decolonization processes.

During the first decades it was focused on mainland affairs, being present in several areas of activity such as finance, manufacturing, mining, and transports. In the early twentieth century there was a change in the strategy of Burnay house and the colonies became a natural destination for its investments.

After WWI, the banking house played a crucial role in establishing large colonial ventures devoted to the extraction of natural resources, involving the granting of exclusive rights by the authorities. These projects were set up in association with foreign capital, especially with Belgian partners who looked at Angola as an extension of their activities in Congo. Colonies and foreign capital would shape the profile of the business group in the following decades.

Based on extensive archival work, the paper analyses the colonial operation of the Burnay group, in order to discuss the issues raised in the Session, especially as regards the resilience of certain companies in the colonial business. Through the experience of this century-old company, which has gone through different political regimes and economic conditions, it is possible to analyse the role of two factors for business success: proximity to political power and accumulation of knowledge about the colonial business.
Economic History Society Annual Conference

31 March – 2 April 2017
Royal Holloway, University of London
Call for Academic Papers

The 2017 annual conference of the Economic History Society will be hosted by Royal Holloway, University of London from 31 March – 2 April.

The conference programme committee welcomes proposals on all aspects of economic and social history covering a wide range of periods and countries, and particularly welcomes papers of an interdisciplinary nature. Scholars are not expected to present a paper in more than one session (including as a co-author) and, when slots are limited, priority will be given to those who did not present at the previous year’s conference. Those currently studying for, or who have recently completed, a PhD should submit a proposal to the New Researcher session; please contact Maureen Galbraith (ehsocsec@arts.gla.ac.uk) for further information.

The committee invites proposals for individual papers, as well as for entire sessions of 1.5-2 hours duration; (no more than 4 papers will be accepted for any one session). Please note that the committee reserves the right to determine which papers will be presented in the session if it is accepted. If a session is not accepted, the committee may incorporate one, or more, of the proposed papers into other panels.

Proposals should please be submitted online via the Economic History Society website (www.ehs.org.uk). You will be asked to submit:

**For single paper submissions:**
- The title of the paper proposed.
- A short abstract of the paper proposed (300-500 words).*
- Up to five keywords to help the conference coordinating committee allocate papers between sessions.
- Contact details (name, affiliation and e-mail address; including those of co-authors).
- A brief C.V.

**For sessions:**
- The title of the proposed session.
- The rationale for the session (up to 100 words).
- The titles of each paper proposed.
- A short abstract for each paper proposed (300-500 words).*
- Contact details for each speaker (name, affiliation and e-mail address; including those of co-authors).
- A brief C.V. for each proposed speaker.

* The abstract(s) should explain the background to the paper; the questions it addresses; the sources and methods it employs; and likely conclusions.

For full consideration, proposals must be received by **5 September 2016**. Notices of acceptance will be sent to individual paper-givers by mid/late-November 2016 when they will be asked to provide the following:

- A revised abstract of the paper (750-1,000 words) for inclusion in the conference booklet (by **16 December 2016**).
- A brief non-technical summary of the paper (if requested) for the ‘Media Briefings’ section of the Society’s website (by **17 February 2017**).
- An electronic copy of the full paper, or a web address where the paper is available for consultation (by **3 March 2017**).
It is the normal expectation that speakers who submit a proposal for a paper to the conference committee should be able to obtain independent financial support for their travel and conference attendance. However, a very limited support fund exists to assist overseas speakers who are unable to obtain funding from their own institution or from another source. Details of this fund and an application form can be obtained from the Society’s administrative secretary, Maureen Galbraith. The completed application form must be submitted by the September deadline as later applications for support will be considered only in exceptional circumstances.
Annual Conference 2017

Economic History Society Annual Conference

31 March – 2 April 2017
Royal Holloway, University of London

Call for New Researcher Papers

The 2017 annual conference of the Economic History Society will be hosted by Royal Holloway, University of London, from 31 March – 2 April.

The annual conference opens with papers presented by new researchers. They offer those completing (or who have recently completed) doctorates the opportunity to present their own, sole-authored, work before professional colleagues and to benefit from informed comment. Speakers who have participated in a new researcher session at a previous Economic History Society annual conference should please submit a proposal to present a paper in the Academic Session.

The session will be held on the afternoon of Friday, 31 March 2017. Those wishing to be considered for inclusion in the programme must submit an application via the Economic History Society website (www.ehs.org.uk) by 5 September 2016. This should provide:

- A short CV, which should include academic qualifications, current position and/or programme of study, conference papers, and publications
- Abstract title
- Abstract summary (max 500 words); this should include:
  - Outline of the question to be asked
  - Summary of methods and sources
  - Probable conclusions
  - Research progress
- Intended date for submission of the thesis

A supporting statement from the supervisor must be emailed separately. Please note that proposals from researchers at an early stage of their work will not normally be accepted.

Those selected for inclusion in the programme will be asked to submit a paper, 2,250-2,750 words in length, by 16 December 2016 for circulation in the conference booklet. Each new researcher will have the opportunity to speak for 20 minutes, followed by 10 minutes of discussion. Up to two prizes of £500 will be awarded for the best paper(s) presented in the new researchers’ session.* The procedure for judging papers will be circulated to all participants.

The Economic History Society is able to offer a financial contribution to assist new researchers to attend the conference when this is not available from their institution. Any monies awarded would not cover travelling expenses.

Any queries should please be directed to:
Maureen Galbraith
Economic History Society
Department of Economic & Social History
University of Glasgow
Lilybank House, Bute Gardens
Glasgow G12 8RT
Scotland, UK
E-mail: ehsocsec@arts.gla.ac.uk

* New researchers, who have achieved their PhD by 31 December in the year preceding the conference, will not be eligible for the New Researcher Prize.
Economic History Society Annual Conference

31 March – 2 April 2017
Royal Holloway, University of London

Call for New Researcher Posters

The Society welcomes sole-authored posters from graduate students at an early stage of pursuing their PhD; collaborative work is not eligible. Graduate students who have presented a poster will be eligible to apply to present a paper in the New Researcher session in a subsequent year, but may present in a poster session only once during their graduate career.

The poster session will be held during tea/coffee breaks, for the duration of the conference, and will be located adjacent to the publisher exhibition. It offers students an excellent opportunity to showcase and gain feedback on early-stage work in a supportive environment. Those wishing to be considered for inclusion in the programme must submit an application, via the online system (www.ehs.org.uk), by 21 November 2016. This should provide:

- A firm title
- A short abstract (maximum 250 words)
- A current CV
- A supporting statement from the supervisor must be emailed separately.

Detailed guidance notes can be found overleaf.

Any queries should please be directed to Maureen Galbraith (ehsocsec@arts.gla.ac.uk).
Guidance Notes for New Researcher Poster Presenters

• If selected for the poster session, presenters will be responsible for bringing a printed version of their poster (A0 size, vertically-oriented, and in colour) with them to the conference. Materials for displaying the posters (i.e. poster stands) will be provided by the EHS.

• Limit the text to roughly one-fourth of the poster space, and use ‘visuals’ (graphs, photographs, schematics, maps, etc.) to tell your ‘story’.

• Text should be under 800 words. Be prepared to give a brief oral introduction to the project and answer questions.

• A banner displaying your poster title, name, and department should be positioned at top-centre of the board.

• Leave some open space in the design. An open layout is less tiring to the eye and mind.

• Make it clear to the audience how to view/read the poster. The poster generally should read from left to right, and top to bottom. Numbering the individual panels, or connecting them with arrows, is a standard ‘guidance system’.

• Simplicity is essential. Keep to the point, and don’t try to cover too many things.

• Tell the audience what question you are asking, why it is interesting, and what answer you propose.

• Think of your poster as an advertisement of your paper, not as the paper itself. Your goal is to engage people in conversation.

• Use a minimum font size of 26 pt. for the body of the text, and 46 pt. for the main title.

• Cite and reference any sources of information other than your own, just as you would do with a research paper. The ‘References Cited’ is placed at the end of the poster.

• The posters will be displayed for the duration of the conference. There will be designated times when poster presenters are asked to be with their posters; namely: tea/coffee breaks.

• Do not forget to bring along handouts that summarize your presentation; these should include your name, affiliation and email address.