THE ECONOMIC HISTORY SOCIETY

Annual Conference

University of Durham

26 – 28 March 2010

Programme including

New Researchers’ Papers

&

Abstracts of the other Academic Papers
NEW RESEARCHERS’ SESSIONS

I/A NUTRITION, HEIGHT AND DISEASE
1 Matthias Blum & Joerg Baten Global height trends and the determinants of anthropometric welfare, 1810s-1980s 1
2 Graham A Butler The Newcastle Dispensary, 1780-1851: towards an assessment of the ‘common disease experience’ of Britain’s ‘northern metropolis’ 7
3 Nikola Koepke Nutritional status in pre-historic and historic Europe 13

I/B ACCOUNTANCY, STATE FORMATION & ENVIRONMENT BEFORE 1550
1 Alisdair Dobie Adoption and development of accounting practices and procedures at Durham Cathedral Priory c.1250-c.1350 19
2 Simon Lambe The Somerset gentry during the reigns of Henry VII and Henry VIII 24
3 Philip Slavin Between famine and plague: the impact of environmental and institutional crises on nutrition in late-medieval England, c.1300-50 28

I/C EARLY MODERN I: BANKING, INDUSTRY & INNOVATION
1 Koji Yamamoto Distrust, innovations, and public service: ‘projecting’ in seventeenth- and early eighteenth-century England 34
2 John W Brown Grey gold at the frontier of change: the Bowes family estate’s role in the North East lead industry, 1550-1760 39
3 Gareth Turner Learning from crises: the example of private bankers in the aftermath of the South Sea Bubble 44

I/D TWENTIETH CENTURY I: BANKS & BONDS
1 Christopher L Colvin Interbank competition and financial stability: the case of Dutch cooperative banks in the early twentieth century 51
2 Chun-Yu Ho & Dan Li Marching in the storms: the Chinese bond market 1918-42 57
3 Pooyan Ghazizadeh et al The effects of regulatory reform on the strategies and performance of Dutch banks 62

I/E TRADE & TRANSPORT
1 Eric Golson Neutrality for self-benefit? Spanish trade in the Second World War 68
2 Florian Ploeckl Borders, market access and urban growth: Saxon towns and the Zollverein 74
3 Klaus Burgmeier & Helmut Braun Understanding why airships lost the sky to aeroplanes 80

II/A WAGES, INFLATION & ECONOMIC CRISIS, 1400-1700
1 Gerald Liu Rising wages in fifteenth-century English agriculture 86
2 Brodie Waddell The economic problems of the 1690s: social consequences, official responses and popular reactions 92

II/B CHRISTIAN SOCIALISM, BUSINESS & FINANCE IN THE NINETEENTH CENTURY
1 Stephen James The contribution of business networks to the formation of the Cleveland iron industry cluster, 1840-80 97
2 Daniel Budden Christian Socialism, economic discourse, and the
### Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>II/C</td>
<td>EARLY MODERN II: COMMERCE, CONSUMPTION &amp; CULTURE</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Wouter Ryckbosch</td>
<td>114</td>
</tr>
<tr>
<td>2</td>
<td>Kate Smith</td>
<td>119</td>
</tr>
<tr>
<td>3</td>
<td>Michael Andrews</td>
<td>124</td>
</tr>
<tr>
<td>II/D</td>
<td>1750-1850: LABOUR &amp; EDUCATION</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Paul Minoletti</td>
<td>129</td>
</tr>
<tr>
<td>2</td>
<td>Niels van Manen</td>
<td>135</td>
</tr>
<tr>
<td>3</td>
<td>Erik Hornung et al</td>
<td>140</td>
</tr>
<tr>
<td>II/E</td>
<td>TWENTIETH CENTURY II: UK</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Campbell Wilson</td>
<td>145</td>
</tr>
<tr>
<td>2</td>
<td>Christopher Moores</td>
<td>150</td>
</tr>
<tr>
<td>3</td>
<td>Dennie Oude-Nijhuis</td>
<td>155</td>
</tr>
<tr>
<td>II/F</td>
<td>DEVELOPMENT &amp; INDUSTRY IN ASIA (AND SWEDEN)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Lars C Bruno</td>
<td>160</td>
</tr>
<tr>
<td>2</td>
<td>Ichiro Sugimoto</td>
<td>167</td>
</tr>
<tr>
<td>Academic Sessions – I/A</td>
<td>INTEGRATED CENSUS MICRODATA</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Kevin Schürer</td>
<td>175</td>
</tr>
<tr>
<td>2</td>
<td>Edward Higgs</td>
<td>175</td>
</tr>
<tr>
<td>3</td>
<td>Kevin Schürer &amp; Edward Higgs</td>
<td>175</td>
</tr>
<tr>
<td>I/B</td>
<td>INDUSTRY</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Francesca Carnevali &amp; Lucy Newton</td>
<td>176</td>
</tr>
<tr>
<td>2</td>
<td>Valerio Cerretano</td>
<td>176</td>
</tr>
<tr>
<td>I/C</td>
<td>AGRICULTURE</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Harry Kitsikopoulos</td>
<td>178</td>
</tr>
<tr>
<td>2</td>
<td>Jonathan Healey</td>
<td>178</td>
</tr>
<tr>
<td>3</td>
<td>Martin Dribe, Mats Olsson &amp; Patrick Svensson</td>
<td>179</td>
</tr>
<tr>
<td>I/D</td>
<td>OCCUPATIONAL STRUCTURE</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Leigh Shaw-Taylor</td>
<td></td>
</tr>
</tbody>
</table>

3 Ali Coşkun Tunçer

‘conversion of the economists’ 1880-1914

Institutions, sovereign risk and taxation: international financial control in the Ottoman Empire, Greece and Egypt

103

108

114

119

124

129

135

140

145

150

155

160

167

176

176

178

178

179

179

179

180

181
2 Osamu Saito By-employment and historical occupational structures in comparative perspective 181
3 Tony Wrigley The value of geographical discrimination: the population of England 1801-51 183
I/E DISCRIMINATION & TOBACCO
1 Joyce Burnette Testing for wage discrimination in nineteenth-century US manufacturing 184
2 Maria Stanfors & Tim Leunig Piece-rates and prosperity: evidence from the late nineteenth-century tobacco industry 185
3 Beatrice Moring Alcohol, tobacco and intra-familial power structures 185
I/F STOCK MARKETS
1 Patrick Walsh The Bubble on the margins: The South Sea Bubble in Ireland and Scotland 187
2 Sibylle Lehmann Explaining the performance of Initial Public Offerings in Imperial Germany, 1897-1914: the role of reputation 188
3 Carsten Burhop & David Chambers The value of regulation and reputation: IPO survival in London and Berlin, 1900-13 188
II/A MORTALITY
1 David Lewis ‘Great mortality and pestilence, emptied, wasted, destitute and despoiled’: crisis or opportunity in late medieval Windsor? 191
2 Guido Alfani Plague in seventeenth-century Europe and the Italian economic decline: an epidemiological hypothesis 192
3 Romola Davenport et al The disappearance of adult smallpox in eighteenth-century London 193
II/B THE ROMANCE OF JUTE
1 Jim Tomlinson The decline of Jute and the de-globalization of Dundee 194
2 Carlo Morelli ‘Blowing the bottom out of jute’?: Government and industry relationships in the jute industry 1957-63 194
3 Valerie Wright A woman’s industry? The role of women in the workforce of the Dundee jute industry c.1945-79 195
II/C EUROPEAN GROWTH BEFORE 1850
1 Stephen Broadberry et al British economic growth, 1300-1850: some preliminary estimates 197
2 Paolo Malanima Italian GDP, 1300-1913 198
3 Carlos Alvarez-Nogal & Leandro Prados de la Escosura The rise and fall of Spain, 800-1850 201
II/D EDUCATION
1 Juan-Manuel Puerta The fewer, the merrier: compulsory schooling laws, human capital, and fertility in the United States 203
2 David Mitch Did high stakes testing policies result in divergence or convergence in educational performance and financing across counties in Victorian England? 204
3 Martina Viarengo et al The political economy of education in Brazil, 1890-1940 205
II/E INSTITUTIONS & SHIPPING
1 Maria Fusaro Public service and private trade in the early modern Mediterranean: English seamen and the Venetian courts of law in the seventeenth century 206
2 Gelina Harlaftis Russian port customs, Anton Chekhov and Maris Vagliano, the ‘Emperor’ of Azov Sea: confronting institutions in
### Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Authors</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Evrydiki Sifneos</td>
<td>Navigating the hostile maze: Americans and Greeks exploring nineteenth-century Russian market opportunities</td>
<td>206</td>
</tr>
<tr>
<td></td>
<td>4 Sarah Palmer</td>
<td>Government and the British shipping industry in the 1960s and 1970s</td>
<td>207</td>
</tr>
<tr>
<td>II/F</td>
<td>Money</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 David Chilosi &amp; Oliver Volckart</td>
<td>Explaining debasement in the late middle ages: what can we learn from the gold-silver ratios?</td>
<td>209</td>
</tr>
<tr>
<td></td>
<td>2 Fernando Lima</td>
<td>Sugar and metals as commodity money in colonial Brazil</td>
<td>209</td>
</tr>
<tr>
<td></td>
<td>3 Catherine Schenk</td>
<td>The retirement of sterling as a reserve currency after 1945: lessons for the US dollar?</td>
<td>210</td>
</tr>
<tr>
<td>III/A</td>
<td>British Historical Statistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Roger Middleton</td>
<td>Introduction to the British Historical Statistics project</td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>2 Richard Sutch</td>
<td>US Historical statistics perspective</td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>3 Nigel Goose</td>
<td>Medieval/early modern statistics</td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>4 Michael Turner</td>
<td>Modern statistics</td>
<td>212</td>
</tr>
<tr>
<td>III/B</td>
<td>Business Organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Jaime Reis &amp; Pedro Neves</td>
<td>Between commercial law and company rules: the ownership and control of modern Portuguese corporations, 1850-1914</td>
<td>213</td>
</tr>
<tr>
<td></td>
<td>2 Timothy W Guinnane &amp; Susana Martinez-Rodriguez</td>
<td>Were cooperatives once corporations? Business law and cooperatives law in Spain, 1869-1931</td>
<td>213</td>
</tr>
<tr>
<td></td>
<td>3 Germà Bel</td>
<td>From public to private: Fascist privatization in 1920s Italy</td>
<td>214</td>
</tr>
<tr>
<td>III/C</td>
<td>Land</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Margaret Yates</td>
<td>The market in freehold land 1300-1500: the contribution of feet of fines</td>
<td>216</td>
</tr>
<tr>
<td></td>
<td>2 Richard W Hoyle</td>
<td>The other rural relationship: labour</td>
<td>216</td>
</tr>
<tr>
<td></td>
<td>3 Juan Carmona Pidal &amp; Joan R Rosés</td>
<td>Was land reform necessary? Access to land in Spain, 1904-34</td>
<td>217</td>
</tr>
<tr>
<td>III/D</td>
<td>Gendering Labour Markets in Eighteenth- and Early Nineteenth Century England</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Chiaki Yamamoto</td>
<td>Men’s unemployment and job opportunities for women: an analysis of the 1834 Poor Law Report</td>
<td>219</td>
</tr>
<tr>
<td></td>
<td>2 Jacob F Field</td>
<td>Service, gender and wages in England, 1700-1850</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>3 Amy Erickson</td>
<td>Marital status and economic activity: interpreting spinsters, wives and widows in pre-census population listings</td>
<td>221</td>
</tr>
<tr>
<td>III/E</td>
<td>Development of Economic History</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Keith Tribe</td>
<td>W.J. Ashley 1860-1927: from historical economics to economic history</td>
<td>222</td>
</tr>
<tr>
<td></td>
<td>2 Negley Harte</td>
<td>Economic history at the LSE, 1895-1921</td>
<td>222</td>
</tr>
<tr>
<td></td>
<td>3 Maxine Berg</td>
<td>The International Economic History Association: world congresses and Cold War legacies</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td>4 John S Lyons</td>
<td>Theory and fact in the practice of economic history in America and Europe since the ‘Cliometrics Revolution’</td>
<td>223</td>
</tr>
<tr>
<td>III/F</td>
<td>Finance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Tony Moore</td>
<td>The profits and pitfalls of lending to the king: the Frescobaldi of Florence and the English Crown, c.1299-1311</td>
<td>225</td>
</tr>
<tr>
<td></td>
<td>2 John Tang</td>
<td>Financial intermediation and late development: the case of Meiji Japan, 1868-1912</td>
<td>225</td>
</tr>
</tbody>
</table>
Contents

IV/A UK REGIONAL INCOMES
1 Jason Begley An income-based estimate of Gross Domestic Product for all-Ireland in 1901 227
2 Frank Geary & Thomas Stark Estimates of Regional GDP (GVA) in the United Kingdom 1901-2001 227

IV/B MINERS
1 Peter Kirby ‘Saint Monday’ and the miners, 1775-1864 229
2 Jim Phillips The moral economy of the Scottish industrial community: new perspectives on the 1984-5 miners’ strike 230

IV/C INTERWAR BRITAIN
1 Peter Scott & James Walker That’s the way the money goes: expenditure smoothing and household budgeting in interwar Britain 232
2 John Cantwell & Anna Spadavecchia Innovation, industrial competitiveness and British regions in the interwar period 232

IV/D COLONIES
1 Nuala Zahedieh Colonies, copper and economic development in Britain, 1680-1720 234
2 Muriel Konczyk & Antoine Parent Heart of darkness: did French colonial investment pay, 1919-39? 234

IV/E REAL WAGES
1 Jean-Pascal Bassino, Kyoji Fukao & Masanari Takashima Grain wages of carpenters and skill premium in Kyoto c.1240-1600: a comparison with Florence, London, Constantinople-Istanbul, and Cairo 236
2 Juan Carlos Rojo Cagigal & Stefan Houpt Squeezing the lemon: labour conflict and real wages in the Basque Country, 1900-30 237

IV/F HUMAN CAPITAL
1 Jacob Weisdorf & Marc Klemp The child quantity-quality trade-off: evidence from the population history of England 239
2 Timothy J Hatton Infant mortality and the health of survivors: Britain, 1910-50 239

V/A GLOBALIZATION
1 Martin Uebele World and national wheat market integration in the nineteenth century: a comovement analysis 241
2 Markus Lampe, Ingrid Henriksen & Paul Sharp The strange birth of liberal Denmark: Danish trade protection and the growth of the dairy industry in the mid-nineteenth century 241

V/B NINETEENTH-CENTURY ENGLAND
1 Peter Maw Canals, rivers, and the industrial city: Manchester’s industrial waterfront, 1750-1850 243
2 Peter Kitson & Jelle van Lottum Migration, economic development and human capital in early Victorian England 244

V/C SOUTHERN EUROPE
1 Jorge Ortuño Molina Limits to market convergence: the role of the Spanish monarchy in the fifteenth-sixteenth centuries 245
2 Martin Ivanov & Matthias Morys Are interlocking directorates good for your growth? 245

V/D INSTITUTIONS AND EXCHANGE
1 Judith Spicksley Death, debt and labour: slavery as a form of exchange 249
2 Guillaume Daudin The rise of Europe and Atlantic trade: did national institutions do it? 249

V/E CREDIT & DEBT
1 Anne L Murphy The grand palladium of public credit: the Bank of England in the later eighteenth century 253

<table>
<thead>
<tr>
<th>2</th>
<th>Maria Eugénia Mata</th>
<th>Portuguese public debt and financial business</th>
<th>253</th>
</tr>
</thead>
<tbody>
<tr>
<td>V/F</td>
<td>STATURE</td>
<td>1 Stephen L Morgan</td>
<td>Adjustment of age-related height decline for Chinese: a ‘natural experiment’ longitudinal survey using archival data</td>
</tr>
<tr>
<td></td>
<td>Economic History Society Annual Conference 2011: call for Academic papers</td>
<td>256</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Economic History Society Annual Conference 2011: call for New Researchers’ Papers</td>
<td>257</td>
<td></td>
</tr>
</tbody>
</table>
Welcome to the University of Durham

Welcome to Durham University, the third oldest university in England, founded in 1832. The conference is based around Collingwood College and the Science Site. The former was founded in the early 1970s as the first purpose-built mixed college in Durham. The latter was developed during the 1960s when the University of Newcastle-upon-Tyne became independent from the University of Durham. The colleges at Durham, which house communities of first- and third-year undergraduate students as well as postgraduates, are centres of sporting, cultural and social activities but are not teaching bodies.

A number of places in Durham are worth a visit while you are here. The Norman cathedral, mostly built between 1093 and 1133, is one of the most spectacular Romanesque buildings of Europe, though its east end and central tower were rebuilt later. It faces Durham Castle (now University College), the construction of which was ordered by William I in 1072. The castle and cathedral are part of a World Heritage site, which puts us in the same league as the Great Wall of China and the Pyramids. Other attractions include the Oriental Museum (very near Collingwood College), which houses, amongst many other rarities, some fine Chinese porcelain from the Macdonald Collection. The Old Fulling Mill Museum, on the river banks below the cathedral, has a small archaeological collection. It is well known from photographs of Durham because of its picturesque position. Durham also has a botanic garden of 18-acres, with trees, shrubs and flowers from all over the world.

Durham is rich in resources for the historian. The University Library and the Cathedral muniment room in 5 The College, behind the cathedral, house the largest and most coherent medieval archive to survive from northern England. The records have provided much material for the study of social and economic history including unusual data on mortality in the late middle ages. The County Record Office contains major collections relating to Durham’s mining and industrial past, heavily used in recent and ongoing research projects. Durham University has been a centre of research and teaching for many years. Its Department of Economic History, founded in 1964, was closed down in 1986 as a result of inadequate funding. However, its staff mostly stayed. They were absorbed into the Department of Modern History (as it was then), and a number of courses in economic and social history remained available to students.

This year’s conference offers a wide range of approaches and topics, ranging widely in time and in space. We hope very much that you will find the setting of the conference attractive and its proceedings stimulating.

Ben Dodds (Local Organizer)                                      Maureen Galbraith (EHS)
Summary Conference Programme
(See Contents for details of each session)

Friday 26th March

0915-1045  EHS Publications Committee Meeting  Dales Suite, Collingwood Coll (CC)
1045-1345  EHS Council Meeting  Penthouse A/B, CC
1200-1800  Registration  Foyer, Calman, Science Site (SS)
1345  Shuttle bus from CC to SS (or a 10-minute walk)
1400-1530  New Researchers’ Session I
   I/A  Nutrition, Height and Disease  Rm 228/229, Earth Sciences, SS
   I/B  Accountancy, State Formation & Environment  Rm 230, Earth Sciences, SS
   I/C  Early Modern I: Banking, Industry & Innovation  Rm 231, Earth Sciences, SS
   I/D  Twentieth Century I: Banks & Bonds  Kingsley Barrett, Calman, SS
   I/E  Trade & Transport  Derman Christopherson, Calman, SS
1530-1600  Tea  Calman & Earth Sciences, SS
1600-1730  New Researchers’ Session II
   II/A  Wages, Inflation & Economic Crisis  Rm 228/229, Earth Sciences, SS
   II/B  Christian Socialism, Business & Finance  Rm 230, Earth Sciences, SS
   II/C  Early Modern II: Commerce, Consumption & Culture  Rm 231, Earth Sciences, SS
   II/D  1750-1850: Labour and Education  Derman Christopherson, Calman, SS
   II/E  Twentieth Century II: UK  Kingsley Barrett, Calman, SS
   II/F  Development & Industry in Asia (and Sweden)  Ken Wade LT, SS
1730  Shuttle bus from SS to CC (or a 10-minute walk)
1740-1840  Open meeting for women in economic history  Penthouse, CC
1815-1900  Council reception for new researchers & 1st time delegates  Dales Suite, CC
1900-2015  Dinner  Dining Hall, CC
2030-2130  Plenary Lecture: Professor Richard Britnell  Penthouse, CC
2135-2145  Meeting of new researcher prize committee  Penthouse, CC
Bar available until late  Bar, CC

Saturday 27th March

0800-0845  Breakfast  Dining Hall, CC
0845  Shuttle bus from CC to SS (or a 10-minute walk)
0900-1045  Academic Session I
   I/A  Integrated Census Microdata  Rm 228/229, Earth Sciences, SS
   I/B  Industry  Rm 230, Earth Sciences, SS
   I/C  Agriculture  Rm 231, Earth Sciences, SS
   I/D  Occupational Structure  Ken Wade LT, SS
   I/E  Discrimination and Tobacco  Kingsley Barrett, Calman, SS
   I/F  Stock Markets  Derman Christopherson, Calman, SS
1045-1115  Coffee  Calman & Earth Sciences, SS
1115-1300  Academic Session II
   II/A  Mortality  Rm 228/229, Earth Sciences, SS
   II/B  The Romance of Jute  Rm 230, Earth Sciences, SS
   II/C  European Growth before 1850  Ken Wade LT, SS
   II/D  Education  Derman Christopherson, Calman, SS
   II/E  Institutions & Shipping  Kingsley Barrett, Calman, SS
   II/F  Money  Rm 231, Earth Sciences, SS
<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300</td>
<td>Shuttle bus from SS to CC (or a 10-minute walk)</td>
</tr>
<tr>
<td>1310-1410</td>
<td>Lunch Dining Hall, CC</td>
</tr>
<tr>
<td>1410</td>
<td>Shuttle bus from CC to SS (or a 10-minute walk)</td>
</tr>
<tr>
<td>1415-1600</td>
<td><strong>Academic Session III</strong></td>
</tr>
<tr>
<td>III/A</td>
<td>British Historical Statistics Ken Wade LT, SS</td>
</tr>
<tr>
<td>III/B</td>
<td>Business Organization Rm 230, Earth Sciences, SS</td>
</tr>
<tr>
<td>III/C</td>
<td>Land Rm 231, Earth Sciences, SS</td>
</tr>
<tr>
<td>III/D</td>
<td>Gendering Labour Markets Derman Christopherson, Calman, SS</td>
</tr>
<tr>
<td>III/E</td>
<td>Development of Economic History Kingsley Barrett, Calman, SS</td>
</tr>
<tr>
<td>III/F</td>
<td>Finance Rm 228/229, Earth Sciences, SS</td>
</tr>
<tr>
<td>1600-1620</td>
<td>Tea Calman &amp; Earth Sciences, SS</td>
</tr>
<tr>
<td>1620</td>
<td>Shuttle bus from SS to CC (or a 10-minute walk)</td>
</tr>
<tr>
<td>1630-1730</td>
<td>Meet the editors of the <em>British Historical Statistics Project</em> Penthouse, CC</td>
</tr>
<tr>
<td>1630-1730</td>
<td>Meeting of Schools &amp; Colleges Committee Dales Suite, CC</td>
</tr>
<tr>
<td>1730-1830</td>
<td>Economic History Society AGM Penthouse, CC</td>
</tr>
<tr>
<td>1915-1945</td>
<td>Conference Reception Penthouse, CC</td>
</tr>
<tr>
<td>1915-1945</td>
<td>(Hosted and supported by Department of History, University of Durham)</td>
</tr>
<tr>
<td>1915-1945</td>
<td>Book launch (supported by CUP) Penthouse, CC</td>
</tr>
<tr>
<td>1945</td>
<td>Conference Dinner Dining Hall, CC</td>
</tr>
</tbody>
</table>

Bar available until late

**Sunday 28th March**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800-0900</td>
<td>Breakfast Dining Hall, CC</td>
</tr>
<tr>
<td>0900</td>
<td>Shuttle bus from CC to SS (or a 10-minute walk)</td>
</tr>
<tr>
<td>0915-1015</td>
<td><strong>Academic Session IV</strong></td>
</tr>
<tr>
<td>IV/A</td>
<td>UK Regional Incomes Rm 228/229, Earth Sciences, SS</td>
</tr>
<tr>
<td>IV/B</td>
<td>Miners Rm 230, Earth Sciences, SS</td>
</tr>
<tr>
<td>IV/C</td>
<td>Interwar Britain Rm 231, Earth Sciences, SS</td>
</tr>
<tr>
<td>IV/D</td>
<td>Colonies Derman Christopherson, Calman, SS</td>
</tr>
<tr>
<td>IV/E</td>
<td>Real Wages Kingsley Barrett, Calman, SS</td>
</tr>
<tr>
<td>IV/F</td>
<td>Human Capital Ken Wade LT, SS</td>
</tr>
<tr>
<td>1015-1045</td>
<td>Coffee Calman &amp; Earth Sciences, SS</td>
</tr>
<tr>
<td>1045-1145</td>
<td><strong>Academic Session V</strong></td>
</tr>
<tr>
<td>V/A</td>
<td>Globalization Ken Wade LT, SS</td>
</tr>
<tr>
<td>V/B</td>
<td>Nineteenth-Century England Rm 230, Earth Sciences, SS</td>
</tr>
<tr>
<td>V/C</td>
<td>Southern Europe Rm 231, Earth Sciences, SS</td>
</tr>
<tr>
<td>V/D</td>
<td>Institutions and Exchange Derman Christopherson, Calman, SS</td>
</tr>
<tr>
<td>V/E</td>
<td>Credit and Debt Kingsley Barrett, Calman, SS</td>
</tr>
<tr>
<td>V/F</td>
<td>Stature Rm 228/229, Earth Sciences, SS</td>
</tr>
<tr>
<td>1145-1300</td>
<td>Tawney Lecture: Professor Jane Humphries Rosemary Cramp, Calman, SS</td>
</tr>
<tr>
<td>1300</td>
<td>Shuttle bus from SS to CC (or a 10-minute walk)</td>
</tr>
<tr>
<td>1315-1415</td>
<td>Lunch Dining Hall, CC</td>
</tr>
<tr>
<td>1415</td>
<td>Conference ends</td>
</tr>
</tbody>
</table>
Brief guide to conference arrangements

The conference will take place on two sites on the University of Durham campus: Collingwood College and the Science Site. Residential accommodation and some meetings will be located in Collingwood College; all parallel sessions will take place in two adjacent buildings on the Science Site: the Calman Learning Centre and the Earth Sciences building. The College is a 10-minute walk from the Science Site; shuttle buses will be provided at certain times of the day.

Conference accommodation on campus
Ensuing and standard accommodation will be provided in Collingwood College (no. 6 on the campus map), which is located a 10-minute walk from the Calman Learning Centre and the Earth Sciences buildings (no. 43 on the campus map), where most sessions will take place. A campus map can be found on page xiii.

Check-in for residential delegates
All residential delegates should please check in at Reception in Collingwood College, where keys will be available from 2.00 p.m. onwards; a luggage storage facility is available for those arriving before 2.00 p.m. Reception is open 8.00 a.m. – 6.00 p.m. daily. If you plan to arrive after 6.00 p.m. you should please call the Porter on the free phone next to Reception. Porters are on site 24 hours. Please advise Maureen Galbraith if you plan to arrive after 6.00 p.m.

Registration
Registration will take place between 12.00 and 18.00 in the Foyer of the Calman Learning Centre on the Science Site; luggage can be stored here if required prior to check-in for residential delegates at Collingwood College. The registration desk will be staffed for the duration of the conference.

Alternative Accommodation
www.marriott.co.uk
www.premierinn.com
www.radissonblu.co.uk/durham
www.swallow-hotels.com

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

Car parking
Delegates may park in the car park at Collingwood College; permits are available from Reception. Please note that parking at the Science Site is very limited.

Book displays
Publishers’ and booksellers’ displays will be in the Calman Learning Centre and the Earth Sciences buildings.

Meals and Morning Tea/Afternoon Coffee
All meals, including the conference reception and dinner, will be served in the dining hall, Collingwood College. Teas and coffees will be provided in the Calman Learning Centre and the Earth Sciences buildings (where parallel sessions will be held).

Receptions and Bar
All receptions and the bar will be located in Collingwood College.
Meeting rooms for New Researchers, Academic Sessions etc
Meeting rooms for new researcher and academic sessions, including the Tawney Lecture, will be located in the Calman Learning Centre and the Earth Sciences buildings; the Friday and Saturday plenary sessions will be held in Collingwood College.

Internet Access
There are computers available in the Calman Learning Centre and Collingwood College. Wi-fi is available in all conference rooms at Collingwood College and the Calman Learning Centre and in public areas in both venues. Temporary passwords are available, on request, from the registration desk. No internet access is available from delegate bedrooms.

Useful Contacts
Event Durham: Tel: +44 (0)191 334 3039 Email: cral@durham.ac.uk
Maureen Galbraith Tel: +44 (0)141 330 4662 Email: ehsocsec@arts.gla.ac.uk
How to reach the University of Durham

Comprehensive information on travel to the University of Durham, as well as maps, can be found at: www.dur.ac.uk/travel/todurham

By Road
Leave the motorway at Junction 62 on the A690 Durham – Sunderland road and follow signs to Durham City Centre.

Durham is 264 miles from London, 187 miles from Birmingham, 125 miles from Edinburgh and 67 miles from York.

There are several express coach services daily from most major cities. Durham is well served by both regional express services and the local bus network. From the city bus station – a short walk from the railway station – a bus service runs every 15 minutes past the Colleges on South Road.

By Rail
Sixty InterCity trains from most major centres in the country call at Durham daily including 14 trains from London. The National Express high speed service takes under 3 hours from London King’s Cross on the main East Coast line. First Transpennine Express offers frequent links to Manchester, Sheffield and Leeds, while Cross Country links Durham directly with Scotland, the Midlands, and the South West.

Durham is just over 3 hours from Birmingham, 2½ hours from Manchester, 1½ hours from Edinburgh and 45 minutes from York.

A taxi will take you from the station to any College within 5 minutes and you can walk to the city centre in 10 minutes.

Detailed information and timetables can be found at: http://nationalrail.co.uk/times_fares/

By Air
Durham is 30 minutes’ drive from Newcastle Airport and about 40 minutes from Durham Tees Valley. Both have regular domestic and international flights. Durham is linked to Newcastle Airport by rail and metro. Travellers into Durham Tees Valley can take advantage of the free Sky Express bus service that links the airport to Darlington railway station, with regular connections to Durham.

By Sea
Scheduled ferry services link the River Tyne to The Netherlands.

Taxis
The taxi services listed below are Durham-based but if pre-booked can provide services to/from Newcastle and Durham Tees Valley (Teesside) Airports.

- Mac’s Taxis: 0191 384 1329
- Paddy’s Taxis: 0191 386 6662
How to reach the University of Durham

Campus Map – Durham

(A copy of this map can be found at: www.dur.ac.uk/map/durham/)
NEW RESEARCHER PAPERS
Global height trends and the determinants of anthropometric welfare, 1810s-1980s

Joerg Baten & Matthias Blum, University of Tuebingen
(matthias.blum@uni-tuebingen.de)
Supervisor: Professor Joerg Baten

Introduction
Human stature is now a well-established indicator for the biological standard of living, as it is typically correlated with health, longevity, and nutritional quality.1 Anthropometric research on individual countries has made a significant contribution to welfare economics over the past decades, and a number of comparative volumes have collected and compared those country studies (among others, see Steckel and Floud 1997, Komlos and Baten 1998, Steckel 2009). However, until now no study has collected all existing evidence. Our study makes this contribution, and we estimate the height trends by world region. Secondly, we assess the determinants of height differences and height changes. Of course, this second analysis will only be possible for a subsample for which all explanatory variables are available.

The aim of our study is to include all the information which has been estimated in previous research. One hundred and fifty-two countries can be taken into account.2 Height estimates will be presented on a decadal basis. However, it is clear that not for all of those countries continuous series are available, some countries are only documented by one or two height estimates. The idea of this project is that subsequently additional information is entered to improve this database of world-wide height estimates over the next years. The series on individual countries will clearly contain a fair bit of measurement error, even when measurements are available and can be based on sufficient numbers of cases: often the regional and social composition of height samples cannot be perfectly assessed for being representative or not. The basic strategy to cope with this is to collect data for a large number of countries. Hence measurement errors will cancel out for most world regions. Such a work can also be important for further data collection efforts, as it is helpful to have a realistic range to compare new height estimates to.

We study the development in each world region. When the first era of globalization boomed during the late nineteenth century, the New World food exporting economies could, for example, have lost some of their initial height advantage (O’Rourke and Williamson 1999). This study will also focus on one of the most important questions in anthropometric history: what determines heights? Apart from general purchasing power and the disease environment, we would expect heights to be also influenced by the availability of high-quality food stuffs (such as milk and meat). Those food items have been identified in previous research as having a bottleneck-type importance for anthropometric values due to their content of high-quality proteins and calcium. Apart from the nutritional value, historical populations needed large amounts of protein to generate antibodies to fight infectious disease (as well as those in today’s Less Developed Countries, see Baten 1999).

Methodological issues
How can we estimate a world height trend over the period 1810-1980? Especially the poor and less literate countries tend to be poorly documented for the period before the middle of the twentieth century, but we mobilized not only the vast anthropometric history literature,

---

1 Only few exceptions come to mind, for which height and longevity do not correlate, such as the Japanese who consumed very little protein before the economic boom of the 1960s and had short statures. But the Japanese achieved relatively high longevity values by investing in personal hygiene and health-related education.

2 We include all countries with more than 0.4 million inhabitants on which evidence was available.
but also a large number of contemporary anthropological measurements will allow to include regions in Africa, Southeast Asia and other parts of the world. After about 1950, the availability of sources changes dramatically, because the Demographic and Health surveys and similar sources provide a large amount of height data on women born between the 1950s and 1980s (sources are documented in a source appendix).

Therefore, for the 1950s-80s period, much more data is available on women than on men, whereas for most of the previous period the opposite is the case. Certainly, male and female heights are not perfectly correlated, but to a certain extent they are related (Baten and Murray 1999, Moradi and Guntupalli 2006). Hence we would like to estimate this relationship between male and female height. If we dare to make the assumption that height trends were broadly similar this allows us to transform female heights into male height equivalents or vice versa, where heights for only one of the genders are available. As most historical height estimates are for males, we mostly transform into male equivalents. We estimated specific regression equations for each world region in order to account for potential differences, although in most cases the conversion equations were quite similar. We can therefore in principle express heights as male equivalents. A refinement of this estimation strategy would be to take gender discrimination proxies (such as relative life expectancies, relative child mortality age 2-5 etc.) into account.

We took care to adjust heights of still growing individuals to their most likely adult height level, following the method explained in Baten and Komlos (1998, notes to table 1). For example, an 18-year-old conscript in a population that was shorter than 170 cm certainly had some remaining growth to expect.

Figure 1: Height trend for all world regions

Estimates of height trends

Figure 1 has the first estimates of the world region trends for the 1810-1984 period. Those are based on population-weighted averages of 152 countries, without using interpolations. We used mostly the standard world region classification, except for the group ‘North America,

3 A possible objection to this procedure could be based on the female resiliency hypothesis, which says that women’s heights are for biological reasons more resilient to adverse conditions. However, Guntupalli (2005) recently rejected this hypothesis based on a much larger sample of male and female heights than was available before.
Australia and New Zealand’ that we aggregated, because those countries have quite similar characteristics (European settlers, high income and cattle per capita values). We observe that the North America/Australia/New Zealand group had very high initial values, but their values converged to the lower levels of other world regions during the late nineteenth century. During the early twentieth century, their height advantage over Western Europe increased again, but the latter region started a notable convergence during the 1950s and 1960s, which has also been called the ‘Golden Age’. Eastern Europe and the socialist part of central Asia followed Western Europe, but with a certain lag. This world region lost ground during the 1960s to 1980s period, relative to Western Europe. East Asia was not far from Western Europe during the early nineteenth century, but fell back during the later nineteenth century, and formed a middle group of world regions during the late twentieth century, jointly with Latin America, Subsaharan Africa, and the Middle East. African heights were the only ones declining in the 1960-1980 period (see also Moradi 2009). The shortest height could be observed in the two world regions of South Asia and Southeast Asia.

Height and GDP

Height and GDP are two different measures of welfare. GDP per capita measures the purchasing power of a nation, whereas height is more correlated with the quality of nutrition, health and equal distribution of resources. Clearly, both can also potentially serve as an explanatory variable explaining the other, but here we prefer to consider them as two different welfare indicators.

Figure 2: Correlation between (log) income per capita and height

Sources GDP: Maddison (2001); heights: see data appendix.

In a simple scattergram, there is some positive correlation between real GDP per capita and height (correlations coefficient is 0.59, p-value 0.00). One deviation to the lower right is Japan, but for the Japanese values alone there was also a positive correlation between GDP and height over time.\(^4\) Deviations on the upper left include some East Asian and African Sahel

\(^4\) In the longer version, we study in more detail whether Japan was a special case, as incomes were relatively high, but heights low. Although Japanese heights increased dramatically in the postwar period, Japan is still an outlier in this respect. Possible explanations range from dietary customs to the fact that there might be intergenerational effects (heights of babies of short mothers cannot increase beyond a certain value,
zone countries (Chad, Burkina Faso, Mali). The latter were poor in purchasing power, but had relatively good protein per capita values and tall heights. Recently, for some of the outlying East Asian countries, the GDP level has been reestimated, which actually brought those cases closer to the regression line of heights and GDP (Fukao et al. 2007).

Determinants of height
For a subset of the height data, we could generate a number of explanatory variables that cover important height determinants, such as nutritional quality, health environment, and political institutions that might determine inequality levels. We tested the residuals of our regressions below for unit roots using the Fisher test (Maddala and Wu 1999), which resulted in a chi2(112) value 268.63, p-value 0.00. As the null hypothesis of the Fisher test is formulated in a way that the series are non-stationary, we can conclude that there is not a unit root problem. However, inspecting the usual autocorrelation statistics and a brief glance at figure 1 suggests that there is autocorrelation. Hence we decided to estimate with a panel data model using feasible GLS, with an AR(1) autocorrelation structure.

We include different variables to control for the availability of animal protein per capita, which was a particular bottle neck factor in historical human nutrition. The relative scarcity was substantial, because it requires larger amount of inputs to produce a protein calorie than, say, a grain calorie (Baten 1999). Sources for those calculations are mainly Mitchell’s statistics and Federico’s new estimates (Mitchell 1993, Federico 2005). The model in the first column of table 1 uses the per capita availability of livestock (cattle per capita), since cattle is a valuable supplier of both meat and milk. This indicator is available for a large number of observations, but it does not account for productivity per piece of cattle. The second model replaces cattle per capita by the annual output of meat per capita. In model three we estimate the amount of milk p.c. As a result, animal protein availability had a positive impact on height, and the coefficient for cattle per capita never misses customary levels of significance.

There might be some relationship between the protein effect and the inclusion or exclusion of world region dummies, perhaps because its consumption is more important in Europe and European settlements. Columns 4 and 5 demonstrate that the coefficient for meat increases in size, if world region dummies are omitted, whereas the one for cattle pre capita remains almost constant. We conclude, that the world region dummies do not change the influence of animal protein very much, at least not in the larger sample based on the cattle indicator.

We include infant mortality rates to control for disease environment (Mitchell 1993). The results confirm our expectations: a problematic disease environment is associated with lower heights.

Democracy was included to assess the possible effect of institutions on the distribution of nutrition and health resources: could it be that rich non-democratic governments (for example, in oil-producing countries) generate a lower standard of living for the population? We actually find that there was a small positive effect of democracy on heights, although it was often not significant.5 We conclude that democracy and the more egalitarian economic structure that is usually correlated with might create a positive environment for the biological standard of living. Apart from this inequality-related effect, democracy might also have been a proxy for general development.

---

5 In the longer version, we also test dummy specifications.
A variable that is used in anthropological studies is the share of mountainous areas. For example, Harrison and Schmidt (1989) argued that humans are generally shorter in high altitudes (such as Peruvians in the Andes). One could imagine that this might be caused by economic variables as well, because mountain dwellers in today’s LDC are often poorer. Previous studies on mountain regions within Europe often featured taller populations compared with lowlanders nearby (such as the Alps, Scottish highlands, the French Jura). The disease environment might be more favourable in sparsely populated mountain regions. It has been argued in previous studies that it was the proximity to protein that allowed those European mountain dwellers to acquire better nutritional status, which is plausible as the same applies to other (non-mountainous) dairying intensive regions such as the continental North Sea coast (Baten 1999). Here we have the possibility to control for the disease environment and the proximity to protein, and to assess whether there is a residual effect of mountainous

Table 1: Determinants of height. Panel data model using feasible GLS, with an AR(1)

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>Overall</td>
<td>Overall</td>
<td>Overall</td>
<td>Overall</td>
<td>Overall</td>
<td>1870s-1940s</td>
<td>1950s-1980s</td>
</tr>
<tr>
<td>Cattle (log p.c.)</td>
<td>0.99***</td>
<td>(0.000086)</td>
<td>1.65***</td>
<td>(0.0000042)</td>
<td>2.08***</td>
<td>(3.96e-10)</td>
<td>1.00***</td>
</tr>
<tr>
<td>Meal (log p.c.)</td>
<td>1.75***</td>
<td>(0)</td>
<td>1.63***</td>
<td>(0.000095)</td>
<td>-1.93***</td>
<td>(0.000020)</td>
<td>0</td>
</tr>
<tr>
<td>Infant mortality (log)</td>
<td>-1.92***</td>
<td>(3.58e-9)</td>
<td>-0.94**</td>
<td>(0.030)</td>
<td>-1.63***</td>
<td>(0.000095)</td>
<td>-1.93***</td>
</tr>
<tr>
<td>Democracy (-10+10 scale)</td>
<td>0.03</td>
<td>(0.23)</td>
<td>0.04</td>
<td>(0.28)</td>
<td>0.09***</td>
<td>(0.0070)</td>
<td>0.07***</td>
</tr>
<tr>
<td>Mountains (in %)</td>
<td>-0.04***</td>
<td>(0.00024)</td>
<td>0.04***</td>
<td>(0.0053)</td>
<td>-0.09***</td>
<td>(0.000003)</td>
<td>0.07***</td>
</tr>
<tr>
<td>Eastern Eur/Asia</td>
<td>5.25***</td>
<td>(0.0030)</td>
<td>4.46***</td>
<td>(0.0089)</td>
<td>5.77***</td>
<td>(0.00010)</td>
<td>7.31***</td>
</tr>
<tr>
<td>Latin America</td>
<td>-0.02</td>
<td>(0.55)</td>
<td>2.24*</td>
<td>(0.058)</td>
<td>2.69*</td>
<td>(0.064)</td>
<td>0.83</td>
</tr>
<tr>
<td>Middle East/N Af.</td>
<td>3.66***</td>
<td>(0.0392)</td>
<td>1.86</td>
<td>(0.17)</td>
<td>7.22***</td>
<td>(0.000097)</td>
<td>4.18**</td>
</tr>
<tr>
<td>North America/Aus/Nzld</td>
<td>6.27***</td>
<td>(0.000070)</td>
<td>4.33***</td>
<td>(0.0027)</td>
<td>5.63***</td>
<td>(0.00020)</td>
<td>7.80***</td>
</tr>
<tr>
<td>Subsah. Africa</td>
<td>1.39</td>
<td>(0.32)</td>
<td>0.13</td>
<td>(0.61)</td>
<td>0.31</td>
<td>(0.19)</td>
<td>2.32</td>
</tr>
<tr>
<td>Western Eur</td>
<td>5.68***</td>
<td>(0.000017)</td>
<td>4.06***</td>
<td>(0.00337)</td>
<td>5.66***</td>
<td>(0.000003)</td>
<td>6.99***</td>
</tr>
<tr>
<td>South Asia</td>
<td>-1.49</td>
<td>(0.41)</td>
<td>-4.20**</td>
<td>(0.013)</td>
<td>-4.20**</td>
<td>(0.0083)</td>
<td>-1.86</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td>-1.87</td>
<td>(0.18)</td>
<td>-3.64***</td>
<td>(0.0073)</td>
<td>-0.85</td>
<td>(0.66)</td>
<td>-1.86</td>
</tr>
<tr>
<td>TIME DUMMIES INCL?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Notes: P-values given in parentheses. All estimates are FGLS panel estimates. Sources are available in a separate appendix.
landscape. After controlling for the protein proximity and disease effect, the results on a global scale indicate that a higher share of mountainous terrain leads in fact to lower heights.

We also included a full set of birth decade dummies and world region dummies. The constant refers to East Asia. The world regions of Europe and North America/Australia/New Zealand have consistently positive coefficients, relative to the reference category. Including the world region dummies does not change signs of coefficients of the nutrition, disease, and political variables. Hence while some of the variation was between world regions, even within the world regions heights are determined by the economic and political factors we assess.

Finally, we could distinguish an early and late period with sufficient numbers of observations, the 1870s to 1940s (‘early’) and 1950s to 1980s (‘late’). We find that in the early period, both the country-specific output of protein as well as our disease proxy had a relatively large coefficient, implying that a one per cent change had greater effects in the early period. In the later period in contrast, protein might have been less important, as proteins became much more easily tradable between countries, using refrigeration and other techniques, and medical technology spread around the world. A second major difference between the early and the late period is that the coefficients of the world region dummies are increasing for the European countries and North America, but shrinking for the Middle East and Latin America, after controlling for the explanatory variables. Relative to the former, East Asia lost ground, but relative to the latter, they gained somewhat. The results are actually not much different, if we include log GDP per capita as a general indicator of purchasing power (table 2, not shown).

In the longer version of the paper, we address a number of issues such as dynamic structure, multicollinearity, endogeneity, the size of the coefficients, measurement quality of the variables, and the selection of countries for which the explanatory variables were available and test some further variables such as tropical zones and wars.

Conclusion

This study was a first step to introduce a new dataset on heights in 152 countries, and to estimate height trends by world region. We find that major determinants of welfare are high-quality nutrition and disease environment. Furthermore, both the political system and the geographic conditions also have at least a modest influence. We find a certain difference between the early and late period of global height development. In the period of the 1870s to 1940s, unit changes in country-specific protein output per capita and disease environment (proxied with infant mortality) had a larger impact on heights.

We also find that most of the anthropometric divergence between today’s industrial and developing countries took place after the 1880s. For example, the Middle East/North Africa region had impressive levels until 1880, but only modest growth thereafter. South Asia had a disappointing development, and also South East Asia grew only modestly. Africa did not perform as badly as perhaps expected in the 1900-60 period, but has experienced a height decline since then. When the first era of globalization boomed during the late nineteenth century, the New World food exporting economies seem to have lost in fact some of their initial height advantage. An additional factor might have been immigration to this world region, which led to higher population densities, less protein per capita, and different nutritional and agricultural practices.

References


---

6 For the period before, not enough countries could be documented with all explanatory variables.
The Newcastle Dispensary 1780-1851: towards an assessment of the ‘common disease experience’ of Britain’s ‘northern metropolis’

Graham A Butler, University of Newcastle
(g.a.butler@ncl.ac.uk)
Supervisors: Professor Jeremy Boulton & Dr Jonathan Andrews

Although the dispensary movement in England has its origins in the early eighteenth century, the ‘real’ movement began with the establishment of the ‘Aldersgate General Dispensary (of) 1770’.7 These were pioneering institutions and their physicians became ‘expert in the natural history and treatment of epidemic fever that … came to dominate the daily routine of chronic illness and sores’.8 ‘Unlike hospitals … the dispensary service took doctors into the homes of their patients’, allowing them to witness at first hand the ‘common diseases experienced’ by the poor.9 Irvine Loudon has argued that the evidence collected by the dispensaries is our ‘most valuable source for … understanding … the whole spectrum of medical disorders treated by medical practitioners’.10

This paper is an avowedly preliminary analysis of the ‘common disease experience’ of Britain’s northeast ‘regional “metropolis”’, Newcastle-upon-Tyne (population c.30,000 in 1777, c.90,000 by 1850) using the evidence collected at the town’s dispensary.11 This institution was situated near the southern poorer districts of the town, close to what have been described as the ‘fever nests’ of the Sandgate, the Close, the Pipewell Gate (Gateshead) and the Pandon.12

This paper aims to highlight some of the benefits as well as the problems associated with records collected by dispensaries in this period. Dispensary material has been cited frequently by historians of medicine, but there have been few attempts to fully contextualize the data. What can this material actually tell us about the ‘common disease experience’ of a large section of the Town’s population?

I

The data are taken from the Dispensary’s disease tables, which survive in a nearly unbroken series between 1777 and 1851. These were published annually in reports distributed to the institution’s subscribers.13 The aggregate figures were produced by the Dispensary’s visiting physicians in what was described then, as an ‘accurate register of names, ages (and) disease[s]’ of the patients visited in each of the town’s districts.14

A preliminary analysis of the data shows that over a period of 71 years, the dispensary treated over one third of a million patients. Clearly, this was an institution operating on a pretty substantial scale. Figure 1 shows the overall number of patients treated together with a

---

11 For a discussion of Newcastle as the north east’s ‘Regional Metropolis’ see Rowe (1990), pp.415-70. The phrase ‘Common disease experience’ was used by Graham Mooney (2007), Flurin Condrau and Michael Worboys (2007 & 2009) when commenting upon the role played by epidemic diseases and infections as common causes of death in nineteenth-century Britain.
12 Anon (1779), page number unknown.
14 Anon (1779), page number unknown.
five-year moving average. As far as one can judge from the available population figures for Newcastle, population growth drove much of the observable increase in dispensary patients.\(^\text{15}\)

**Figure 1:** Total number of Dispensary patients and 5-year moving average, 1780-1851

<table>
<thead>
<tr>
<th>Year</th>
<th>No. Patients</th>
<th>5 year. Mov. Avg (No. Patients)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1780-81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1785-86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1790-91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1795-96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1800-01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1805-06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1810-11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1815-16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1820-21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1825-26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1830-31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1835-36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1840-41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1845-46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1850-51</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Newcastle Dispensary annual reports 1780-1851, no data exist for the years 1787-89

The patients recorded were broken down into two different ‘types’ after 1790, with the inclusion of ‘casual’ or ‘walk-in’ patients as opposed to the ‘recommended’ variety. It is the ‘recommended’ category that this study is chiefly concerned. Mainly, because we have more detailed information regarding their ailments, treatment and outcome. This group represents over 106,000 patients, some 30 per cent of the total in the dataset. These recommended patients would have all been in receipt of a printed letter of recommendation from either one of the physicians or a subscriber of the institution.\(^\text{16}\) Subscribers of one guinea could recommend four patients per year to whom they would give a signed and printed letter.\(^\text{17}\) These letters were filed by the dispensary’s apothecary who also noted the medicines’ dispensed and the method by which they were to be administered. The letters were commonly returned to the subscriber after the patients’ course of treatment had ceased.

On the face of it, this is an impressive dataset, and indeed a subset of it has been used by Loudon in his pioneering study.\(^\text{18}\) Such material, must however, be contextualized. How representative are the data in terms of the experience of the total population of Newcastle? Is the sample biased towards the ‘disease experience’ of a particular gender? Alternatively, is the data biased towards particular age groups?

II

There are good reasons to think that the patients treated by the dispensary were representative of the wider population. Table 1 shows the age structure of the dispensary sample as compared to the 1851 Census of Newcastle.

---

\(^\text{15}\) See Barke (2001), pp.135-66. For a more recent and up to date demographic study of Newcastle, see: Basten (2008).

\(^\text{16}\) Miller (1990), p.178.

\(^\text{17}\) Ibid, p.179.

Table 1: Dispensary patients age structure to the 1851 Newcastle census

<table>
<thead>
<tr>
<th>Age group</th>
<th>Dispensary sample (%)</th>
<th>1851 Census (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>41.5</td>
<td>35.1</td>
</tr>
<tr>
<td>16-59</td>
<td>50.9</td>
<td>55.4</td>
</tr>
<tr>
<td>60+</td>
<td>7.6</td>
<td>9.5</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Sources: Newcastle Dispensary annual reports, 1780-1851. The census data are from the 1851 Newcastle Census. Ref: TWAS: L/4359

The sample data suggests that in terms of their age structure, consultations aged between 0-15 years represented 41.5 per cent of the total treated, those aged between 16-59 years were 50.9 per cent, and those aged 60 or over were 7.6 per cent. This distribution is similar to the age structure of the population as revealed in the 1851 Census. As Table 1 demonstrates, the dispensary seems to have treated proportionately more children under 16 than might have been predicted, and fewer of those in other age groups, although the differences are not large. This suggests that the Dispensary’s experience might have been broadly representative of the wider population. What of gender? Again the Dispensary appears to have been a representative institution.

The 1851 census returns for the town reveal that in terms of gender composition, the town’s population was distributed thus: 49.1 per cent were male and 50.9 per cent were female. The dispensary sample data shows that in terms of gender composition of the recommended patients, male consultations were 46.4 per cent to 53.6 per cent female.

The dispensary seems to have treated a representative population, in terms of both the gender and age structure of the town. However, even if the age and gender composition of the dispensary’s patients was reasonably representative, its social profile was not. The Dispensary was a charity run for the sick poor, those lacking the resources to seek help from Newcastle’s private sector. This social bias should be borne in mind, since diagnosis could be affected (amongst other things) by both place of diagnosis as well as the social status of the patient.

III

The diseases and complaints of the ‘recommended’ patients were listed by ‘category’ in the tabulations. These categories included ‘febrile diseases’, ‘nervous diseases’, ‘diseases of habit’ and ‘local diseases’. The ‘categories’ were broken down by disease ‘name’ which allows for some further analysis of the diseases and disorders ‘experienced’ by the patients. Table 2 shows the 10 most common diseases treated by the Dispensary during the period.

‘Putrid fever’, stomach complaints, rheumatism, and catarrh were the diseases frequently treated by the Dispensary physicians. Table 2 also highlights some of the problems associated with the records collected by dispensaries in this period. Putrid fever is particularly problematic. This may have been, as Loudon pointed out, ‘a mixture of typhus and typhoid’. ‘Putrid’ was just one of 88 terms used by Murchison to describe ‘fevers’. Other commonly used phrases were ‘malignant’, ‘slow’, ‘nervous’, ‘spotted’ ‘gaol’, and ‘ship’ (amongst others). Putrid fever is not the only disease ‘term’ which is problematic. Some clearly relate

---

20 See the recent paper by Mooney, (2009), pp.357-90.
22 Murchison (1873), p.2.
23 Ibid., p.2.
to symptoms, others are notorious ‘catch all’ terms, notably ‘consumption’. In fact one could argue that all of the disease labels in Table 2 should be viewed with caution.

Table 2: Ten most common diseases of recommended patients treated by Newcastle Dispensary doctors, 1780-1849

<table>
<thead>
<tr>
<th>Years</th>
<th>PF</th>
<th>IF</th>
<th>CT</th>
<th>CN</th>
<th>RH</th>
<th>PL</th>
<th>DD</th>
<th>SE</th>
<th>FD</th>
<th>SC</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1780-89</td>
<td>20.8</td>
<td>7.8</td>
<td>10.1</td>
<td>8.1</td>
<td>11.3</td>
<td>10.2</td>
<td>3.0</td>
<td>12.5</td>
<td>8.5</td>
<td>7.7</td>
<td>5240</td>
</tr>
<tr>
<td>1790-99</td>
<td>12.3</td>
<td>2.9</td>
<td>24.4</td>
<td>5.5</td>
<td>13.2</td>
<td>1.9</td>
<td>3.8</td>
<td>4.7</td>
<td>10.4</td>
<td>20.9</td>
<td>13,675</td>
</tr>
<tr>
<td>1800-09</td>
<td>21.7</td>
<td>1.3</td>
<td>18.7</td>
<td>4.6</td>
<td>14.9</td>
<td>1.8</td>
<td>3.6</td>
<td>7.7</td>
<td>9.2</td>
<td>16.5</td>
<td>8218</td>
</tr>
<tr>
<td>1810-19</td>
<td>10.2</td>
<td>1.4</td>
<td>25.1</td>
<td>4.2</td>
<td>16.7</td>
<td>2.9</td>
<td>5.7</td>
<td>6.6</td>
<td>7.4</td>
<td>19.5</td>
<td>9304</td>
</tr>
<tr>
<td>1820-29</td>
<td>13.2</td>
<td>1.2</td>
<td>31.1</td>
<td>2.9</td>
<td>14.4</td>
<td>0.8</td>
<td>9.6</td>
<td>4.7</td>
<td>4.3</td>
<td>17.8</td>
<td>11,268</td>
</tr>
<tr>
<td>1830-39</td>
<td>20.2</td>
<td>0.2</td>
<td>21.5</td>
<td>4.8</td>
<td>10.5</td>
<td>5.4</td>
<td>7.8</td>
<td>5.4</td>
<td>4.6</td>
<td>19.6</td>
<td>15,678</td>
</tr>
<tr>
<td>1840-49</td>
<td>20.4</td>
<td>0.2</td>
<td>20.2</td>
<td>4.6</td>
<td>17.3</td>
<td>2.8</td>
<td>8.0</td>
<td>11.1</td>
<td>5.2</td>
<td>10.7</td>
<td>15,605</td>
</tr>
<tr>
<td>Total</td>
<td>13,362</td>
<td>1282</td>
<td>17,780</td>
<td>3840</td>
<td>11,180</td>
<td>2585</td>
<td>5048</td>
<td>5782</td>
<td>5334</td>
<td>12,875</td>
<td>78,988</td>
</tr>
</tbody>
</table>

Source: Same as Table 1. Key for ‘disease’ categories and abbreviations in Table 2: Category I (‘Febrile diseases’), II (‘Disease of habit’) and III (‘Nervous Diseases’). Abbreviations: PF (Putrid fever), IF (Intermittent fever) CT (Catarrrh), CN (Consumption), RH (Rheumatism), PL (Pleurisy), DD (Diarrhoal diseases), SE (Skin eruptions), FD (Venereal disease) and SC (Stomach complaints).

IV

The remaining section of this paper will address Anne Hardy’s observation that ‘the investigation of the local and particular circumstances of death and disease in the cities, towns and countryside of … England has largely been neglected’. Although the Newcastle Dispensary supplies us with some important data on the common health complaints experienced by Newcastle’s working population – at a crucial time in the Town’s history – a more detailed analysis is required. Firstly, it is clearly the case that the Dispensary treated only a proportion of all the diseases that assailed Newcastle’s working population. An analysis of the causes and level of mortality in Newcastle, rather than morbidity will uncover the relationships, if any, between the two and reveal any limits to the treatment of patients. It is notable, for example, that smallpox was rarely recorded amongst Dispensary ‘recommended’ patients, which suggests sufferers may have been refused treatment or sent elsewhere. Secondly, this paper will analyse the relationships between the Dispensary and other medical institutions in the Town. The development of hospitals or infirmaries specializing in particular afflictions might well have affected the sort of patients who were recommended to the Dispensary. More detail, too, will be provided about the length of stay and reported outcomes of the Dispensary’s patients, and about the financial underpinning of the institution.

References

Secondary


25 Here I refer to adult ‘recommended’ patients.


**Printed Primary Material**

Anon. *Newcastle Dispensary Annual Reports, 1780-51* (Newcastle-upon-Tyne, 1778-51).


Newcastle Upon Tyne 1851 Census (TWAS: L/4359).
Unpublished Material


Nutritional status in pre-historic and historic Europe

Nikola Koepke, University of Oxford
(nikola.koepke@history.ox.ac.uk)

Introduction

For a long-run study on living conditions from pre-historic times onwards sufficient data are very rare: On the one hand, ‘conventional’ economic data are either unavailable or exist only in a deficient amount. On the other hand no quantitative information on aspects of living standard (such as numeracy level or infant mortality) is available in adequate amount to investigate overall welfare.

Promising though is an interdisciplinary approach utilizing the concept of the biological standard of living in combination with archaeological material: by applying anthropometric methods on bone remains as data source of final mean height, which is used as a proxy in order to determine the nutritional status. The data on the potential determinants and chronology are also based on archaeological findings.

For the first time in economic history this approach is employed in the study in order to investigate the conditions in Europe from pre-historic times onwards.

Data source and method

The main sources for information on the nutritional status of pre- and early historic people are human bone remains, which stem from skeletons from archaeological excavations. The bones are quantifiable material that is available in representative amount, and the data provide good comparability possibilities between centuries and regions.

The current study is based on data compiled on over 18,500 individuals. These are widely distributed in time and region, belong to all social classes, and include information on both men and women in a representative amount. The data originate from 484 European sites, dating from the eighth century B.C. to the eighteenth century A.D. With respect to different possible reasons for the development of the nutritional status the data are subdivided into three main European regions: Mediterranean Europe, Central-Western Europe, and North-Eastern Europe. We defined the borders based on basic natural and cultural environmental aspects.

With the aim of delineating the development of European mean height, in a first step regression analyses with variables for each century (‘birth century cohorts’) were applied to the data on an individual level based on time coefficients. In a second step, panel data analysis was utilized with the aim of checking the possible determinants affecting mean height (concurrently controlling for possible inter-temporal heterogeneity): Weighted Least

---

26 Those few ancient sources, which give at least any numbers on production or consumption of food, provide not really usable information, because they are small-regional specific (like marks on ostraca). Moreover, written sources are problematic since texts by ancient authors or on inscriptions exist only sporadically and in general cannot be taken as objective due to the antique writers’ usually intentional formulations.

27 Concerning education for the long-run no sufficient data is available to reconstruct the level of schooling or human capital, in contrast to later centuries, for which A’Hearn, Baten, Crayen (2006), or De Moor and van Zanden (2008), and others studied numeracy and literacy levels. Concerning mortality rates the archaeological data is not representative. Firstly, it is impossible to estimate infant mortality rates correctly, because of the bad preservation conditions of neonatal and infant bones (Kölbl 2004). Secondly, it is also problematic to reconstruct live expectancy (Parkin 1992).

28 As part of the study the height data were standardized to the same longbone-to-height formula to make the observations comparable. In some cases heights of two to 360 individuals were aggregated by previous investigators; thus 5,041 separate height numbers are available.

29 For details see Koepke and Baten 2005.

30 This method has also been used also to check the mean height difference between females and males, and to control for social status and migration (see Koepke and Baten 2005).
Square (WLS) regressions were conducted on the major regions level (equivalent to fixed effects) with dummies for the periods.31

**Results: development of European mean height from pre- to early history and its determinants**

Overall, for the centuries A.D. the results of an earlier study (Koepke and Baten 2005; 2008) have been confirmed by the much enlarged dataset in the current paper indicating that there was no pronounced trend in mean height for these centuries (see figure 1).32

![Figure 1: Height development (in cm) by major European regions (8th century B.C. to 18th century A.D.)](image)

Source: Koepke (2008). The level of heights was adjusted to male heights of an average European (using the regional coefficients and weighting them with sample weights). Results based on centuries with N>35.

Yet, including the centuries B.C. we found a modest increase in the mean height of about 0.5 cm per 1,000 years. Thus, there was no large-scale progress in European nutritional status prior to industrialization in the course of the approximately last three millennia. Nevertheless, living conditions have been continuously improved in the long-run. However, strong variations between centuries are observable: conditions of constrained human welfare repeatedly superseded enhanced living conditions during pre-industrial history. The increase

---

31 Prehistory was subdivided in an early (eighth to fifth century B.C.) and a late part, the latter beginning with the sixth B.C. as around 500 B.C. the change of the Hallstatt to Latène period took place in Central-Western Europe, approximately parallel in the North-East the Jastorf culture arose, and on the Apennines Peninsula the Etruscans ‘entered’ their golden age after centuries of formation. It follows the ancient period which starts differently in the different regions, but continues approximately similarly long in any of the three major European regions until the fifth century A.D. when the Migration period/early medieval ages set in, followed in each region by the high and late medieval periods, from the 10th and from the 13th century A.D. onwards, and the modern period starting with the 16th century.

32 This estimation of the development over time is based on WLS regression on the individual level (including all collected data), males and females pooled, and adjusted by the regional distribution.
was strongest for Central-Western and lowest for North-Eastern Europe. The Mediterranean region shows the strongest variability.

The studied timeframe allows us to check older hypotheses concerning peaks and low points in European living standards, such as the common idea of a positive impact on living conditions due to the expansion of the ancient Roman Empire, or worsened conditions during the ‘Dark Ages’.

The WLS regression findings presented in table 1 (see subtitle for reference group) indicate Roman occupation actually to be one of the decisive factors in influencing mean height. However, in contrast to the widely held belief, the period of Roman occupation overall had a negative effect. Further important determinants are the urban rate and the milk consumption: Higher urbanization rate was found to be a major detrimental determinant of nutritional status, as one would expect in particular due to detrimental health conditions in pre-modern towns. Higher milk consumption as indicated by cattle share had a positive impact on mean height. Correspondingly, this determinant is the key factor in causing significant European regional differences in mean height. Controlling for cattle share we found that overall no significant regional inequalities in nutritional status did exist in the three major European regions: If husbandry was present, basic human needs were met comparably well. Consequently, the statement of earlier scholars who supposed that height differences between Mediterranean Europeans and North-Eastern Europeans in pre- and early history were genetic is corrected by observations collected on these periods. Furthermore, the influence of the expansion of the *imperium Romanum* on the European population is remarkable. In contrast to the public idea of benefit due to ‘civilization’ our results indicate that it was of negative impact in the occupied provinces. But also for the Mediterranean region the Roman expansion had a detrimental effect. None of the other potential determinants we controlled for actually had a significant impact on mean height in the long-run. The set of endogenous variables in use (such as animal protein availability etc.) can explain up to 61 per cent of the European mean height development.

Looking at the panel regression models in more detail, one can find that in the baseline model (table 1, col. 2 and 3) most of the possible variables have no statistically significant impact. In contrast to that, if we do not control for cattle share and land per capita the ‘Mediterranean Europe’-dummy becomes statistically significant on the five per cent-level (col. 4 and 5). Overall, Mediterranean Europeans were smaller in height than the people stemming from the other European regions. These regional differences in mean height indicate inequality in the nutritional status, which is specified by the missing impact of the two excluded variables resulting in the height gap. Both factors subsume the beneficial aspects of a pastoral economy, as e.g. Sandberg and Steckel (1987) or Moradi and Baten (2005) found. The two variables of cattle share and land per capita are proxy for proximity-to-protein, and comparably good epidemiological environment, which are not given in the Mediterranean region to a similar extent such as in the other parts of Europe. As a third model variation (col. 6 and 7) only the two crucial variables: cattle share, and land per capita are utilized to test for their specific impact. In this model (adj.$R^2$ of 0.30) cattle share is positively statistically significant on the one per cent-level, and in terms of economic significance, an additional standard deviation of cattle share implies 0.72 centimetres additional in height. But land per capita is insignificant. Hence, overall the potential contributions of the protein
proximity effect seem to be particularly important, and much more important than population density. The reason might be that land *per capita* did not yet matter as much for the periods B.C., because enough space was available, or because the estimates are less precise. The fact that the land per capita-determinant has no significant effect in the very long-run could also be explained on the one hand by Malthusian, or on the other hand by Boserupian argumentation; however, it cannot be decided which is the better explanation due to the low temporal resolution of the dataset in the archaeological analyses. Finally (see col. 10 and 11), the first model was varied by supplementing the ‘Roman bath&technology’-dummy instead of the time dummies in the regression revealing that actually the ‘gross-effect’ of being part of the Roman Empire was a negative one: this dummy has a statistically significant negative impact on mean height of -1.46 cm (on a one per cent-level). Other than the temporal development by the major regions would suggest, the Roman influence has a considerable effect on the provinces outside the Italic heartland as well: It is negatively significant in the affected regions.

35 The importance of this determinant, which was discovered in an earlier paper, counts for the centuries A.D. – especially the ninth century onwards, when population pressure obviously became essential.
## Table 1: Determinants of Height

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>167.51</td>
<td>0.00</td>
<td>169.63</td>
<td>0.00</td>
<td>165.95</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Mediterranean Europe</td>
<td>0.34</td>
<td>0.79</td>
<td>-1.10</td>
<td>0.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North-Eastern Europe</td>
<td>-0.12</td>
<td>0.86</td>
<td>0.44</td>
<td>0.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early Prehistory</td>
<td>-1.61</td>
<td>0.23</td>
<td>-0.89</td>
<td>0.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Late Prehistory</td>
<td>-1.36</td>
<td>0.08</td>
<td>-1.07</td>
<td>0.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antiquity</td>
<td>-1.72</td>
<td>0.01</td>
<td>-1.39</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Medieval Period</td>
<td>-0.14</td>
<td>0.91</td>
<td>-0.81</td>
<td>0.37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Late Medieval Period</td>
<td>-1.00</td>
<td>0.60</td>
<td>-1.05</td>
<td>0.38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modern</td>
<td>-3.17</td>
<td>0.19</td>
<td>-1.70</td>
<td>0.19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle share</td>
<td>0.04</td>
<td>0.22</td>
<td></td>
<td>0.05</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three-field rotation</td>
<td>0.79</td>
<td>0.55</td>
<td>0.72</td>
<td>0.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle plague</td>
<td>-0.07</td>
<td>0.89</td>
<td>-0.24</td>
<td>0.54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land per capita (log)</td>
<td>0.31</td>
<td>0.82</td>
<td></td>
<td></td>
<td>0.20</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>Urban rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>War-prosecution</td>
<td>0.05</td>
<td>0.90</td>
<td>-0.04</td>
<td>0.92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plague</td>
<td>-0.08</td>
<td>0.88</td>
<td>-0.09</td>
<td>0.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genderinequality</td>
<td>1.22</td>
<td>0.30</td>
<td>0.53</td>
<td>0.59</td>
<td>1.67</td>
<td>0.15</td>
<td></td>
</tr>
</tbody>
</table>

Adj.R\(^2\) | 0.49   | 0.43   | 0.30   |

### Adj.R\(^2\) in Columns 3, 5, 7, 9 in italics. Results based on centuries with N>35. Weighted Least Squares Regression: number of cases adjusted for aggregated observations using square roots. Constant refers to a hypothetical height value for the early middle ages, and Central-Western Europe. Female mean height adjusted to male mean height.

### Conclusion

Final adult mean height of a population ‘subsumes’ the nutritional status during the growth period that is ‘composed’ chiefly of quantity and quality of diet, disease and work load, and therefore living conditions. This fact provides the possibility to measure differences in...
nutritional status by using mean height as indicator, which enables the study of living conditions in periods for which no adequate written sources exist, but physical anthropological data are provided. This anthropometric approach was employed on skeletal material from Europe, dating from the eighth century B.C. until the eighteenth century A.D.

Overall, results indicate that there was only a small increase in mean height with variations between centuries and regions. Nevertheless, in general nutritional status became better even prior to the Industrial Revolution.

We found the influence of the expansion of the imperium Romanum on the European population to be remarkable. In contrast to the public idea of benefit due to ‘civilization’ the data indicate that it was of negative impact, especially for the Mediterranean region, but also in the occupied provinces. Controlling for cattle share we found that the presence of husbandry is decisive for determining height differences between Mediterranean Europeans and North-Eastern Europeans. A third important determinant for mean height is urban rate. The negative effect of increased urban rate is in agreement with the idea of problems in competition for food supply, and detrimental health conditions in pre-modern towns. Testing the impact of increasing urban rate the hypothesis of a negative impact for pre-modern times is confirmed.

The interdisciplinary approach of combining anthropometry and archaeology utilized in the paper is an ideal method to study the very long-run economic history, because it makes available indispensable insights into some of the central aspects of human life during periods, which otherwise are not accessible.

References
Adoption and development of accounting practices and procedures at Durham Cathedral Priory c.1250-c.1350

Alisdair Dobie, University of Durham
(alisdair.dobie@uws.ac.uk)
Supervisor: Dr Ben Dodds

The accounting materials which survive from Durham Priory for this period, although incomplete, offer a substantial corpus of material from a wide range of officials and obedientiaries. They provide an opportunity to explore a network of accounts from a single organization beyond the traditional focus of accounting historians on manorial accounting.

The accounts have been used for a number of important studies, but the emphasis of the present paper is on the actual form, process and purpose of the accounts, which on occasion have been alleged for their “extraordinary conservatism and rigidity.” An initial examination of the accounting material immediately revealed its complexity, and the ease with which it could be misinterpreted: a lack of awareness of the treatment of arrears has led to the gross overstatement of annual income; there have been disputes over the meaning of specialized Latin terms such as superplusagium; and, ignorance of the use of the long hundred has led to incorrect assertions of arithmetical inaccuracy in the accounts. Subsequent research revealed a number of key developments: the standardization of accounting forms; the treatment of debtors and creditors; cash management; and, the use of accounting around a production process.

The preparation and retention of written accounts at Durham Priory, as elsewhere, appears to commence in the thirteenth century. Innocent III (1198-1216) mandated the submission of annual accounts by monastic superiors and officials, and Gregory IX (1227-41) required these to be audited. The preparation of such accounts was of continuing concern to episcopal visitors, and Durham visitations records from the early fourteenth century include articles of enquiry which ask whether accounts were rendered by the prior and office holders, and corrections issued by Bishop Kellawe in 1314 instructed the prior to cause such accounts to be rendered. More guidance was provided by the statutes of the general chapters of the Benedictines, and monitoring of compliance undertaken by triennial chapter visitation. Statute 31 of the 1221 general chapter of the province of York instructed all obedientiaries to guard against the unlawful alienation or waste of the goods entrusted to them, and to produce a status of their office, when required. Bursars, cellerers and granaters were to render faithful raciones of all receipts and expenses in due and accustomed form.

---

36 Accounting material survives from the offices of the bursar, terrar, cellarer, almoner, chamberlain, communar, feretar, hostillar, infirmarer and sacrist, as well as manorial, livestock, proctor and cell accounts. A catalogue is available at http://flambard.dur.ac.uk/dynaweb/handlist/ddc/dcdmaccs/. The records are stored in Durham Cathedral Archives (DCA).
38 Dodds, Peasants and production; Halcrow, ‘Administration and agrarian policy’; Threlfall-Holmes, Monks and markets.
39 Dobson, Durham Priory, p.255.
40 McKisack, Fourteenth century, p.305.
43 Clanchy, Memory, p.71; Harvey, Manorial Records, pp.25-31.
45 DCA 2.9 Pont. 4; Priory register II ff.50v-51r.
47 Ibid., p.238.
by Prior Thomas of Melsonby (1234-44) mandated the presentation of written accounts, and fragments of an account c.1240 have been found.\textsuperscript{48} A general chapter statute of 1287 required the heads of cells to render a \textit{status}, vouched by one of their fellow monks once a year within 15 days of Michaelmas.\textsuperscript{49} This and the earlier statute of 1221 perhaps explain why different offices have left different types of account: the bursars’ accounts are predominantly in \textit{compotus} form, those of the cells until 1340 in \textit{status} form. Where a monk was perceived to be in charge of resources, his responsibility was to produce a \textit{status} to show whether the assets in his charge had increased or decreased. The bursar in contrast was not entrusted with the assets of the house, he was merely responsible for reporting the income generated from them and the expenses to which they were applied. The assets of the house, the main estate, were the responsibility of the priors, who were instructed to produce \textit{status} at the end of their period of office to enable a comparison with the assets of the house at the start of their priorate.\textsuperscript{50}

The titles and layout of the accounts become standardized after an early period of irregularity. After 1300 titles usually contain the start and end dates of the accounts, and the name of the office and of the office holder. The earliest surviving bursar’s account of 1278/9 begins with a list of apparently random expenses, and receipts comprise the second portion of the account.\textsuperscript{51} After 1290 this order is reversed: items are grouped by category and given headings which are repeated in a consistent order in subsequent accounts. This facilitated the speedy identification of the relevant section and expedited comparisons of a roll with its predecessors: both potentially time consuming operations when account rolls could exceed 20 feet in length. Standardization was doubtless encouraged by the profusion of accounting treatises and formularies arising during this period of which examples survive at Durham.\textsuperscript{52} The length of full account rolls, inevitable in the detail required for an audit of all individual transactions, might also hinder a ready appreciation of the major cashflows of the year and so a further innovation was the preparation of much shorter summary accounts which listed only the total of each category of income or expenditure.\textsuperscript{53}

The bursars’ accounts also evidence a growing concern with reporting ‘balance sheet’ issues, particularly the recording and monitoring of unsettled transactions which had been entered into in one accounting period, but were not settled until a future period. Arrears of rents due from priory lands are recorded from the earliest remaining account (1278/9) onwards: the total of such arrears is included in the final \textit{exoneracio} section in which the bursar explains any shortfall in the expected change in his cash position. Although gross totals are given for such arrears, subsidiary amounts were monitored on a ‘great chirograph’, and by means of rent books, which recorded actual receipts.\textsuperscript{54} Such monitoring was no doubt considered a necessity as the monks saw themselves as the guardians of property which belonged to St. Cuthbert.\textsuperscript{55} Although the monks monitored arrears minutely for many years (an indenture listing arrears received during the year 1335/6 includes a receipt outstanding from 1315), they did eventually acknowledge that some debts were irrecoverable, and in 1348 such debts were listed on a new schedule: ‘Arrears for which there is no hope’. Much like the

\textsuperscript{50} Later examples of these survive: Raine, \textit{Historiae dunelmensis}, pp.cclxxxv-cccviii; Greenwell, \textit{Feodarium}, pp.98-211.
\textsuperscript{51} Dobie, ‘Analysis’, p.192.
\textsuperscript{52} Oschinsky, \textit{Walter}. DCA contains accounting formularies dating from c.1300 and c.1380: miscellaneous charters 7130; locellus II.15.
\textsuperscript{53} For example, DCA bursar’s 1313/14 summary account, which is around 4½ inches wide and 16 inches long. An illustration is given in Dobie, ‘Analysis’, p.199.
present practice of writing off bad debts, these arrears were not carried forward from year to year, but disappeared from the records once they had been identified. From 1350/51 onwards two new categories of ‘waste’ and ‘decay’ relating to vacant holdings and those from which reduced rents were received, appeared in the accounts. These likewise were treated as irrecoverable and not included in the arrears carried forward into subsequent accounts.

Debt appears to have become a more pressing problem in many monastic houses from the thirteenth century onwards. For Durham Priory, tithe evidence suggests that the period until c.1311 was a period of expansion in grain output, and this picture is largely borne out by the total actual receipts shown in the bursars’ accounts. After 1311 however, Scottish invasions, devastating floods and murrain were reflected in a collapse in grain production and in the cash receipts of the bursar, which for the remainder of the period did not come close to the levels shown in the 1310/11 accounts. The phrase ‘and not more because waste’ or ‘nothing because waste’ recur frequently in the receipts sections of the bursars accounts; and references to murrain are common in the livestock accounts: of 730 lambs born in 1339/40 at the priory’s sheep centre of le Holme, 288 died of murrain, a mortality rate of almost 40 per cent. Such severe reductions in yields led to an increasing reliance on borrowing and the sale of income in advance. In 1329/30 these sources amounted to £693 or 38 per cent of the bursar’s actual receipts.

The increased reliance of the house upon debt to cover its regular expenditure is reflected in the increased prominence given to borrowings and repayments in the accounts. From 1310/11 onwards they are separately disclosed under the headings of mutuaciones and soluciones debitorum, as were advanced sales from 1330/31 under the heading premanibus. Borrowings were recorded in the priory register. However, such entries interspersed with much other material, did not provide an overview of the total indebtedness of the house. Hence in 1330 is found the first surviving list of creditors. It lists in excess of 70 amounts due by the house to diverse creditors (totalling £1,164); amounts owed to the servientes of the manors for the superplusagia on their accounts; and, debts incurred and outstanding by the cellarers in each year from 1307 to 1329. Total indebtedness was £1,277, a significant amount given that actual receipts, excluding borrowings, were £1,483 in that year. Schedules from subsequent years reveal total debts of £2,128 in 1331, and, £2,207 in 1333, although a much shorter listing of 1348 amounts to only £148. This lower level of debt may reflect a recovery in income following the period of raids and famines and attempts to control expenditure by introducing domestic economies and limiting the powers of obedientiaries to contract new debt.

Given the need to rely on debt, the importance of careful monitoring of the house’s cash position is evident. A comparison of receipts and expenses in a selection of the bursars’ accounts appears to reveal a healthy surplus ranging from £38 to £3,550 for each of eight years sampled between 1278 and 1350, averaging £1,238. However, once receipts are adjusted for arrears of rent not actually received the surpluses reduce dramatically to an average of £17, and in five years actually £4 or less. This appears to indicate a very close monitoring of the cash position, not immediately evident from the gross figures presented in the accounts. That accounts were not just examined at year ends is evidenced by the requirement that the granator and his colleague should each Friday go to the bursar’s office to write down their weekly expenses. These schedules were to be retained until the submission

---

56 Moorman, Church life, p.303.
57 Dodds, Peasants and production, pp.46, 55-70; Dobie ‘Analysis’, pp.189, 196.
58 DCA bursars’ accounts 1316/7 and 1329/30; enrolled livestock account 1339/40.
60 E.g Priory register II f.59v and f.89v.
of the final year-end accounts, and the process demonstrates a regular monitoring of outflows.\textsuperscript{63}

The accounting records which survive from the office of granator, the monk-official entrusted with the administration of grain, comprise a particularly interesting series of linked accounts, which extend far beyond simple grain accounts and include accounts for wheat, bread making, bread usage, barley, malt, brewing and ale consumption. Outputs from one account reconcile to inputs in the subsequent account in the cycle of production and consumption.\textsuperscript{64} Production standards were stated (the customary yield from a \textit{burceldrum} of wheat was 660 loaves),\textsuperscript{65} and variances were calculated and considered at the audit. The use of standard yields for land and livestock has previously been investigated,\textsuperscript{66} but here production standards have been adopted for manufacturing processes. The accounts list grain consumption for 13 ‘months’, each of four weeks, covering a full year, and calculate average monthly, and on occasion weekly consumption figures. Standardized periods of equal length facilitated comparisons, although the incidence of feasts and fasts would affect the monthly figures. Averages enhanced the monitoring of usage, as abnormally high or low figures could be investigated, and expedited planning to ensure that adequate quantities of grain were available as required.\textsuperscript{67}

Accounting at Durham Priory, in contrast to the rigidity noted at a later date, demonstrates inventiveness and adaptability: standard forms were adopted to assist the retrieval of detailed data and to improve comparability; and additional headings and sections were introduced to highlight newly important areas such as \textit{mutuaciones}, \textit{soluciones debitorum}, and \textit{premanibus}. Beyond the major account forms of the \textit{compotus} and the \textit{status} an extensive network of other accounting material: chronological listings; summary accounts; lists of arrears, bad debts, and creditors were compiled to enhance the monitoring of the financial position of the house. Accounting permeated the activities of the house in hierarchies of accountability, such as those extending from the bursar and granator to the level of the pantler. These developments undoubtedly reflect the complexity and interrelation of a wide range of factors extending beyond the immediate purpose for which an accounting innovation was introduced to include the availability of new techniques; the attitudes of individuals within the house towards innovation; economic imperatives and the intervention of external bodies. In a period of unprecedented change and challenge, the adaptation and extension of their accounting system, by the monks of Durham Priory, undoubtedly contributed to their continued prosperity.

\textbf{Footnote references}

Bailey, M., \textit{The English manor c.1200-c.1500} (Manchester, 2002).


\textsuperscript{63} DCA, locellus XXVII.16 (f).

\textsuperscript{64} Dobie, ‘Review’, forthcoming.

\textsuperscript{65} A customary measure used at Durham Priory equal to 38½ bushels.


\textsuperscript{67} A similar concern with average monthly and weekly costs is noted in the cellarers’ accounts: Dyer, \textit{Standards}, p.94; Fowler, \textit{Extracts}, p.311.
Dodds, B., *Peasants and production in the medieval north-east* (Woodbridge, 2007).
Fowler, J. T. (ed.), *Extracts from the account rolls of the Abbey of Durham*, 3 vols., Surtees Soc., 99 (1898), 100 (1898), 103(1900).
The Somerset gentry during the reigns of Henry VII and Henry VIII

Simon Lambe, St Mary’s University College
(024434@students.smuc.ac.uk)
Supervisor: Dr Glenn Richardson

Recent research regarding late-medieval Somerset has focused on religion and the relationship between the gentry and the county’s religious infrastructure but precious little has been offered up in terms of the socio-political role of the gentry within the county itself. Significantly, from the beginning of Henry VII’s reign, the crown relied on the passive obedience of the population and the cooperation of the upper echelon of society to provide the necessary administrative duties, finances, and troops when required. Accordingly, my research focuses on both the relationship between the Somerset gentry and the crown and the socio-political structure within Somerset between 1485 and 1547. I intend to use the Somerset gentry as an instructive case study of active political communication and local administration of central policy at the county level.

I have chosen to research the county of Somerset due to four key factors. First, the boundaries of Somerset are roughly commensurate with the diocese of Bath and Wells – thus the diocese is contained within a single county, Bath being the monastic centre and Wells the secular. Second, it is appropriate to add that Bristol, then England’s third largest town, abutted Somerset’s northern boundary which may help to explain why Somerset enjoyed a steady prosperity as Bristol’s hinterland. Third, brief mention should be made of the excellent supply of records and documentary evidence that survives for Somerset. Although this attribute does not make Somerset unique, it certainly adds to the overall appeal of studying such a county. Finally, strategically speaking, Somerset acted as an important bulwark between the counties along the Thames Valley and the ‘savage’ country to the west. Indeed, ‘it can be no coincidence that when in 1497 the south-west erupted in revolt, it was from Somerset and Dorset that most of the gentry rebels came’.

Since Geoffrey Elton published *The Tudor Revolution in Government* in 1953, Tudor historians have been forced to reconsider historical supposition with accepted theories of Henrician government becoming fragmented. The natural step for political historians was to move outwards from the court – the beating heart of national politics – to the counties to view the court and country from afar, the most notable examples of which being Cheshire, Kent, and Suffolk. The impression is that Henry VIII ‘was far from omnipotent, ( ... ) the real

---

70 David Ashton, ‘The Tudor state and the politics of the county: the greater gentry of Somerset, c.1509-58’, pp.11-13 (p.11).
measure of his power was his ability to have his decisions executed at the level of the county and village. John Guy has commented that ‘central administration was only effective when it enjoyed support from local governors’ while Steve Hindle notes that offices in local government were ‘carried out by amateurs who volunteered their service out of a combination of desire for national or local recognition of their honour and prestige and of an ethos of public duty’. What becomes clear from studies of Tudor local government is that with the reliance on local elites rather than the nobility alone ‘the county, and even the parish, elites of England were to a very large extent self-governing, but theirs was “self-government at the king’s command”’. One aim of my research is to reclaim Henry VII from his current status: distanced by medievalists and, to a large extent, forgotten by Tudor historians. This view is borne out by the historiography: it is common practice to employ 1509 – the year of Henry VIII’s accession – as a convenient starting point for early Tudor political and prosopographical research. By the same token, it is a commonplace for ‘medieval’ studies to end in either 1485 or 1509.

Dominic Luckett has suggested that the ‘south-western shires saw little significant reorganization under Henry VII ( ... )’. After the early grants of forfeited lands, the Crown was almost alone in securing significant additions to its estates in the region’. Central to this is the political influence of Giles Lord Daubeney, a man of great fidelity and circumspection [who] was elected and made the kynges chiefe chamberleyne’. Luckett has also noted that Henry VII had managed to reduce Daubeney’s support base in certain regions across England. However, ‘the problem was particularly acute in Somerset and Dorset due to Daubeney’s near monopoly of all the important offices of power and profit’. Luckett has used the example of county escheators in the south west to demonstrate that under Henry VII, ‘the flow of intelligence from the shires to the centre was crucial’. David Ashton has highlighted that developments in Quarter Sessions in Somerset and the rise of the Equity Courts suggest ‘a strengthening in the development of a partnership between the government and the local elite in Somerset’ underlining the increased centralization within the Tudor state. One example of the strengthening of central influence can be seen in neighbouring Devon where the number of JPs almost doubled during Henry VIII’s reign (1514-47). For Robert Whiting, these ‘indispensable instruments of Tudor authority ( ... ) effectively governed the two counties [i.e. Devon and Cornwall] through the Courts of Quarter Sessions, regulating the economic, social, moral and even spiritual life of the population and striving to translate the decrees of central government into local reality’.

---


82 Ashton, ‘The Tudor State’, pp.125-130 (p.130) and 134.
83 Robert Whiting, The Blind Devotion of the People. Popular religion and the English Reformation (Cambridge,
There is no doubt that Thomas Cromwell’s administration was responsible for drastic governmental, religious, and social change in England. As for his influence on county government, Mary Robertson and Helen Speight have recently exchanged views on the level of Cromwell’s direct influence in county government during the 1530s, although they have not been able to agree.\textsuperscript{84} What is interesting about this period is the scarcity of royal or ministerial visits to the region throughout Henry VIII’s reign. We know that Henry VIII made a solitary visit to the west country during his reign.\textsuperscript{85} Cromwell too neglected the region as ‘aside from one visit to south-eastern Somerset in 1535, he seems never to have set foot in the west’.\textsuperscript{86} However, in response, John Guy has suggested that Thomas Cromwell attempted to improve his influence in the south west by appointing to the Commission of the Peace John Wadham, Nicholas FitzJames, Thomas Horner and John Sydenham, all of whom were known to Cromwell to be worthy representatives. According to Alan Smith, Cromwell’s administration had three primary objectives. First, to enforce the royal writ throughout England in as ‘uniform’ a manner as possible. Second, he ‘wished to strengthen governmental machinery at the centre and in the regions in order to make the king’s authority more effective’. Third, he wanted to ensure all subjects were ‘under his own personal direction’.\textsuperscript{87}

From the available documentary evidence, we are able to sketch an outline of the gentry and lesser nobility resident within, and those without, Somerset in 1502.\textsuperscript{88} Michael Havinden has compiled an estimate of 98 members of the gentry resident within Somerset and an additional eight members without. This list includes two members of the nobility, John Bourchier Lord Fitzwarine and Giles Lord Daubeney; four influential knights, Sir Amias Paulet, Sir Walter Hungerford, Sir William Willoughby and Sir Hugh Luttrell; five knights of a slightly less influential position, Sir John Speke, Sir John Rodney, Sir John Wadham, Sir Edmund Gorges and Sir John Choke; and finally two members of the lesser gentry, Henry Champneys and John Verney.\textsuperscript{89} Among these members of elite society we find the members of Parliament for Somerset at this time: Sir John Speke, Sir Amias Paulet, Sir William Willoughby, Sir Walter Hungerford, John FitzJames (senior) and John Pole. We also discover that Somerset was home to members of Parliament for other counties: Sir Thomas Tremayle, Thomas Newburgh and John Hymerford.\textsuperscript{90} David Ashton has claimed that ‘one of the peculiarities of sixteenth-century Somerset was the lack of involvement of the county peerage in local government’.\textsuperscript{91} This does not seem to be the case in 1502 given that two of the 36 peers in England, covering 39 counties, resided in Somerset.\textsuperscript{92}


\textsuperscript{86} Robertson, \textit{The Art of the Possible}, p.795.


\textsuperscript{89} Havinden, ‘The resident gentry of Somerset in 1502’, pp.3-8.


\textsuperscript{91} Ashton, ‘The Tudor State’, p.13.

\textsuperscript{92} Havinden, ‘The resident gentry of Somerset in 1502’, pp.3-8.
In terms of socio-political power, David Ashton has made specific reference to an area in southern Somerset, centred on Hinton St George, Merrifield and Whitelackington in the southern part of the county which he termed the ‘powerhouse of county government’. Within this ‘powerhouse’ he identifies a ‘triumvirate of power’ in the tripartite families of Paulet, St Loe and Speke: that is, a small community of powerful local knightly families who held a political monopoly throughout the county. However, Ashton’s notion of a ‘triumvirate of power’ is altogether too simplistic and ignores the wider significance of other groups of influential families around the county as members of each family had direct connections to king and court, although their fortunes and influence fluctuated throughout the period in question.

Marcus Barrett has recently shown the dangers of placing outside agents in a local, rural society from the evidence of disturbance between two Somerset families: the Brays and the Lacys. Barrett’s conclusion is interesting in itself as he suggests that this conflict involved national concerns: ‘it was yeoman against courtier, local tradesman against London money. Thus, the affray was born of an historic sense of fear – old versus new ( ... ) Bray himself embodied the new wave of ‘stranger’ – often from London professional backgrounds – which was filtering into Somerset landholding and which within only a few years would buy-up swathes of dissolved monastic and chantry lands.’

J.H. Bettey has highlighted the socio-political importance of acquiring monastic property and land: ‘the wealth derived from their estates enables [the gentry] to dominate the life of the region’. Indeed, the main beneficiaries of monastic land were, first, councillors and royal servants and, second, ‘gentry families, merchants, lawyers and officials in each locality ... many of whom were already leasing monastic lands or acting as stewards, bailiffs, auditors or receivers of rent for the monastic houses’. Indeed, Katherine Wyndham cites the example of Thomas Horner as a man ‘who was active in local politics and well in tune with central administration’ who by the late 1530s, ‘had purchased about £115 a year worth of property from the Crown ... from the estates of Glastonbury, Bruton, Bath and Keynsham abbeys in Somerset’. We can also find evidence of alternative means of insuring grants of land. We know that Sir Hugh Luttrell’s son, Sir Andrew Luttrell, ‘with an eye to insuring his family’s fortune, left a silver cup to Thomas Cromwell. His widow Margaret was well able to look after herself; she went into the shipping business and invested her money in the dissolved Dunster Priory’. The evidence suggests a complex mix of formal and informal networks which created a haphazard yet ultimately effective approach to political communication. Evidently the gentry played an important socio-political role (mustering troops, controlling riots, etc.). However, land deeds and financial accounts suggest fluctuations in familial fortunes and inter-family tension and cooperation throughout the period.

---

97 Bettey, The suppression of the monasteries, p.133.
That the first half of the fourteenth century was a period of ecological and economic shocks is a truism requires no argumentation. In England, as elsewhere in Northern Europe, the local population was hit by a series of harsh crises, the three most devastating of which were the Great Famine of 1314/5-22, the Great Cattle Plague of c.1315-21 and the Black Death of 1348-51. While the latter has been a subject of much scholarly investigation and debate, the first two crises, their implications and impact are yet to be studied in detail.

It has long been established that the Great Famine of 1314/5-22 was an agrarian crisis, brought about by a series of failed grain harvests, mostly of winter crops. The harvest failures, in turn, were created by the almost Biblical flooding, which befell most parts of Northern Europe between late 1314 and late 1316, and then again throughout much winter and spring of 1321 (Jordan 1996). The wheat and rye harvests of 1315 were approximately 40 per cent below their normal level; in 1316 they stood at 60 per cent blow their average level; in 1321 they were as bad as in 1315 (Campbell 2007, 2008 and 2009). The obvious result of this environmental shock was widespread famine, which seems to have killed about 10-15 per cent of the North-European population. While there is no doubt that the torrential floods of 1314-6 were the primary bringers of the famine, it is, perhaps, worth asking to what extent they were the only factors standing behind the hardships of 1314-22. Here, I suggest that the famine of the early fourteenth century was, in fact, a somewhat more complex phenomenon, with far-reaching implications and repercussions beyond its traditional chronological limit of 1315-22. As I shall argue in the discussion, perhaps the better term for this disaster is the ‘food crisis of the first half of the fourteenth century’. This crisis seems to have been created by an adverse combination of ecological and institutional factors. My research is based on the original archival material, consisting of over 1,000 manorial accounts, about 100 diet accounts, and further 100 sheriffs’ accounts with the conjunction of grain purveyance during the Scottish War of Independence (1296-1328). Taken together, these sources portray a more complex and gloomier picture than is commonly seen.

Let us turn first to the institutional factors. In recent years, more and more economic historians encourage their peers to regard institutions, no matter how weak or underdeveloped they may be, as important and decisive factors in economic development (Greif 2006). In the case of early fourteenth-century England, the following institutions are to be considered: (1) manorialism; (2) warfare.

As far as manorialism is concerned, its relevance to the current topic is manifested in the lord’s ability to use its socio-economic status and recruit sufficient quantities of grain supply, whether through direct demesne exploitation (grain extraction), or financial resources (grain purchases). The situation is illustrated well on Figure 1 showing the differences in food supply patterns between different communities before and during the famine years. The sample includes three wealthy monastic communities, Durham Cathedral Priory, Canterbury Priory and Norwich Cathedral Priory, and one community of impoverished status, Bolton Priory (Yorkshire). 100 As the figure suggests, the crisis was hardly felt in the Durham, Canterbury and Norwich communities. At Durham and Norwich, the brethren increased the share of grain purchases, to make ends meet. At Canterbury, the community, enjoying its

100 Sadly, no granator’s accounts from Westminster Abbey survive for the famine years.
‘holy’ status, received generous grain gifts from local benefactors. Even though both Durham and Norwich communities increased their grain purchases, the main bulk of corn still came from the demesne. Thus, on Canterbury Cathedral demesnes, about 86 per cent of harvested wheat was dispatched to the priory in 1316/7, in contrast with about 69 per cent between 1310 and 1314. Similarly, the authorities of Westminster Abbey and Durham Cathedral Priory augmented the levels of demesne grain extraction. In addition, about 13 per cent of the total grain supply of Durham Priory was carried over for the next year in 1316. Before the agrarian crisis, on the other hand, few or no grain was hoarded there. Thus, the better-off households managed to secure a steady grain supply notwithstanding the harsh agrarian crisis.

Altogether different was the situation at Bolton Priory. The adverse combination of Anglo-Scottish warfare, which forced the local authorities to pay tribute to Scottish warlords, and limited demesne resources, did not allow the brethren to secure sufficient levels of grain supply, through either channel. Moreover, unlike Durham, Norwich and Canterbury communities, the Bolton canons did not have sufficient resources to purchase surplus grain, to hoard and carry over for the next year. As a result, the total grain supply at Bolton stood at about 70 per cent of its pre-famine level.

Figure 1: Grain supply at four English monastic communities, 1310-7 (1310-4 = 1)

Source: Household Accounts Database; Manorial Accounts Database

Unluckily for the English populace, the Great Famine coincided with the Scottish War for Independence, which made its hardships all the more unbearable. Here we have to distinguish between ‘war zones’, affected directly by both Scottish raids and purveyances, and ‘war-free zones’, affected indirectly, by purveyances only. In essence, purveyance was a royal prerogative to recruit forced contributions or sales of grain, to provision armed forces during a conflict. Unfortunately, no complete purveyance accounts from the famine years survive, and, hence, we draw our information from select sheriffs’ accounts compiled during these years. For instance, the 1315/6 account of the sheriff of Norfolk and Suffolk, dealing with the provisioning of Berwick-upon-Tweed, indicates that although the peasants were forced to sell their wheat supplies for, more or less, the market price, the purveyance prices of barley and oat were far below their average market level (7s 6d and 3s 8d a quarter, compared with 12s 3d. and 5s. a quarter).101 The institution of purveyance hit the peasantry from two sides. First, it forced them basically to surrender their potentially life-saving grain supplies. Second, the financial compensation for these losses was less than unrewarding. But even if the peasants were to receive adequate, ‘market’ prices for oats and barley, they may well have experienced

101 The National Archives, E101 574/22.
troubles finding freely available grain for purchase on the market. After all, the general turnover within the grain sector undoubtedly contracted during the famine years. Once the agrarian crisis was, more or less, over the gap between the purveyance and market prices became less apparent, with the ratio of 0.85:1.00 for wheat and 0.75:1.00 for spring crops.

Figure 2: Market and purveyance grain prices, 1311-25 (in Shilling per Quarter)

Source: Purveyance Accounts Database; John Munro’s revised Phelps Brown and Hopkins ‘basket of consumables’ commodity price series and craftsmen’s wage series: http://www.economics.utoronto.ca/munro5/EngBasketPrices.xls (last accessed 1 December 2009)

In other words, the combination of economic inequality among different communities within the manorial structure of late-medieval England, on the one hand, and compulsory sales of grain, on the other, created conditions similar to what Amartya Sen coined as the ‘entitlement crisis’ (Sen 1981). In essence, the entitlement crisis means a disruption in equal access to food supply, created by socio-economic advantages (ab)used by stronger social strata to secure food supplies, at the expense of poorer elements, during famine years. Clearly, in the case of the early fourteenth century crisis, the poorer echelons were deprived of a steady and ready access to their food supply not only by disastrous yields, low availability and high prices of grain, but also by the ability of stronger elements to recruit the remainder of the potentially available grain supply, whether through the market, or purveyances. Thus, the food crisis was created by ecological factors and intensified by the institutional ones.

Food plundering is yet another aspect tightly connected to the ongoing crisis of the early fourteenth century. In the course of the Anglo-Scottish warfare, both sides conducted extensive raids at the enemy’s rear, chiefly the countryside. While the marauding activities are vividly described in both English and Scottish chronicles, the extent of their economic damage is to be found in some manorial accounts from the Northern counties. Unfortunately, and mostly for institutional reasons, the North of England has much thinner coverage of the accounts. Nevertheless, the few available accounts can provide a partial grasp of the situation. Between 1312 and 1322 Durham and its manors suffered at least five Scottish raids, while Bolton and its immediate farms witnessed three attacks between 1319 and 1322. In the course of the attacks, the marauders ravaged fields, burnt granaries and carried away livestock, mainly cattle. Thus, in June 1315, the Scots attacked at Bearpark (Durham) and having sacked a local manor house, seized 60 horses and 180 cows. The impact of the raids is clearly seen in Table 1 and Figures 3 and 4, indicating that the overall agricultural and pastoral production suffered a visible contraction in the course of the war, within both the demesne and peasant sectors in the North.
Table 1: *Average crop harvests (in quarters) on three Durham demesnes, 1304-25*

<table>
<thead>
<tr>
<th></th>
<th>Billingham</th>
<th>Ketton</th>
<th>Pittington</th>
</tr>
</thead>
<tbody>
<tr>
<td>1304-10</td>
<td>275.81</td>
<td>435.69</td>
<td>423.00</td>
</tr>
<tr>
<td>1315-7</td>
<td>186.44</td>
<td>269.88</td>
<td>275.25</td>
</tr>
<tr>
<td>1319-25</td>
<td>228.19</td>
<td>227.50</td>
<td>308.13</td>
</tr>
</tbody>
</table>

Source: Durham Cathedral Accounts.

Having dealt with the institutional factors, it is now appropriate to revert to the environmental side of the crisis. Again, much advance has been made here in most recent years by Bruce Campbell, in his seminal studies (Campbell 2007, 2008 and 2009). However, one aspect yet to be studied in this conjunction is the connection between the Great Cattle Plague and human famine, on the one hand, and the impact of the former on the latter, on the other. The pestilence had arrived in England around the spring of 1319, killing about 65 per cent of local bovids within just over a year (Newfield 2009 and Slavin 2010). This colossal figure meant that the English lords and peasants were deprived of the single most important ploughing force, as well as fertilizing agents and some vital sources of protein. Since grain was the
single most important food component in the pre-Industrial era, it is no wonder that the lords and their bailiffs did their best to replenish their ox stocks as swiftly as possible. By 1332, the ox stocks stood at some 80 per cent of their pre-1319 levels. This, however, came at the price of a slow replenishment of cattle. This selective restocking policy had, naturally, a profound effect on the dairy produce sector. Unfortunately, very few manorial accounts gave particulars about lactage yields and dairy production. Our main source of information here comes mainly from seven Berkshire-Buckinghamshire demesnes of Winchester Bishopric, as well as several Kentish demesnes of Canterbury Cathedral Priory and a number of Wiltshire-Somerset demesnes of Glastonbury Abbey. For the purpose of the present paper, I have confined my observations to the dairy sector of Winchester Bishopric (Figure 5). During the years of pestilence, that is 1319/20, the overall levels of milk production per demesne fell to abysmally low levels. With most cows perished, the surviving animals were too debilitated to render high milk yields (the average lactage yields fell from 142 to 45 gallons per cow). Once the panzootic was over, an average productivity per cow returned to its normal level. At the same time however, the overall dairy produce levels could not catch with the pre-pestilence ones. The demographic recovery of cows was slow; it did not begin until the late 1320s and it was not until c.1337 that the Winchester cattle stood at its pre-1319 level. Elsewhere in England, however, the restocking was slower and it was not until the Black Death that the replenishment was, more or less, complete (Slavin 2010). Furthermore, between 1325 and 1327, some manors experienced yet another outbreak of bovine disease, apparently different in its nature from the panzootic of 1319/20. It was characterized by physical debilitation, abortion, failed calving, termination of milk production, but eventual recovery and return to fields and dairy-houses, rather than death. At the same time, however, milk produce per cow fell further.

The overall decline in the dairy produce sector meant that less protein sources were available for human consumption. The post-1319 human malnourishment, deriving from a decreased intake of dairy products and, thus, protein nutrients, may have weakened the human population and made it more susceptible to various pathogens and diseases. It is now established that shortage of protein, or protein-energy malnutrition (PEM), can have severe implications on human populations, and especially on a child’s development. The period of ‘dairy famine’, lasting for at least 20 years, was a much longer period than several years of

Figure 5: Annual [vaccine] dairy produce on seven demesnes of Winchester Bishopric, 1315-50 (logged on 1315-19: 1.00=3,648 gallons of raw milk per demesne), and dairy cattle population in England

Source: Manorial Accounts Database
inclement weather, bad harvests and grain malnutrition and, hence, it is highly likely that its implications were most severe. It is plausible, then, that the period of ‘famine’, or, perhaps better yet ‘food crisis’, lasted much longer than just for three of seven years, as ‘codified’ in scholarly literature. In effect, the crisis seems to have lasted for well over 20 years.

If protein shortage indeed weakened the immune system of the developing adolescents, is it possible, then, that it also was that ‘invisible beast’ that made them easily susceptible to the plague some twenty-five or thirty years later? This possible connection between the two biological disasters should by no means be neglected. At this point, however, the possible link between the animal and human pestilences seems to be coincidental. To establish this association, several necessary steps are to be taken. First, it is necessary to study the changes within food consumption patterns between c.1320 and 1350, as reflected in numerous contemporary household accounts. Second, an analysis of monastic infirmarer’s accounts, recording the number of admitted patients and expenditure on medicine, is to be undertaken. Finally, it would be imperative to correlate bovine fatalities in 1319/20 to human mortality rates in 1348-51, on the same manors. To that end, a meticulous demographic analysis of several hundreds of manorial court rolls is required. If carried out properly, such studies ought to render most exciting results, which shall shed much new light on one of the biggest mysteries in human history: the Black Death.

Select bibliography


102 Lucas (1930): three years (1315-7); Kershaw (1973) and Jordan (1996): seven years (1315-22).
Distrust, innovations, and public service: ‘projecting’ in seventeenth- and early eighteenth-century England

Koji Yamamoto, King’s College London
(koji.yamamoto@kcl.ac.uk)
Supervisor: Dr Mark SR Jenner

From the earliest generation, economic historians have been intrigued by domestic schemes for economic and technological innovations – what early moderns often dubbed ‘projects’. They grew in number from the mid-sixteenth century due to a combination of factors including demographic pressure, availability of cheap labour, and international economic competition. Under the influence of humanism, these schemes were closely associated with ‘commonweal’ and the ‘public good’, although some schemes rather served private ends. So some historians of earlier generations, like Unwin and Robertson, depicted promoters of these schemes, or ‘projectors’, as rogue capitalists profiting themselves under the lofty slogans. \(^{103}\) Scholars writing after Joseph Schumpeter, including Gough and Grassby, have reversed such interpretations, and described ‘entrepreneurs’, the ‘business community’, and ‘projectors’ as an innovative force ‘committed to change and oriented towards growth’. \(^{104}\) Thirsk and others have avoided these polarities, but replaced them with a commonsense suggestion that ‘the motives of every projector mixed public and private in different proportions’. \(^{105}\) These groups of scholars have provided valuable thick descriptions, and Thirsk, in particular, has demonstrated that small-scale economic projects contributed to economic growth. These lines of interpretations share a problem, however: drawing upon modern-day conceptions of economic agency has given an impression that assertion of public service was either sporadic or irrelevant for our analysis.

This paper, which encapsulates some of the key findings of my thesis, argues that the assertion of public service was so ubiquitous that it generated distrust of such assertions. Distrust persisted throughout the period although dominant forms by which innovations were attempted shifted from monopoly under early Stuarts to unincorporated joint-stock company in the early eighteenth century. I focus on this enduring culture of distrust and public service because, as for England, it emerged for the first time in the early seventeenth century, \(^{106}\) and more speculatively because today’s concerns about corporate businesses and their public roles seem to owe much to this culture.

Early modern promoters of innovations repeatedly stressed their contribution to public finance and the employment of the poor, and presented both as godly public service. For example, in the earliest surviving printed proposal for setting up a new industry to substitute import (published in 1563), Thomas Trollop argued that ‘the lawes of god, humanity, and reason’ demanded that the City of London employ ‘their owne people’, for doing so would ‘winne the love of the pore nedy people’, and be ‘inriching … our realme and common weale’. \(^{107}\) In 1615 a proponent of a new fishing scheme assured to bring a ‘sweete fountaine of profite’ of more than £50,000 yearly into ‘the Kings custome’. \(^{108}\) In 1660 Thomas Bushell promised Charles II that his Welsh mining scheme would be ‘most … acceptable to all good

\(^{103}\) Unwin 1908, p.328; Robertson 1933, p.190. But see also Hill 1980, pp.128.


\(^{108}\) J.R. Trades increase (1615), p.46.
men’ because it would relieve ‘many whole families’ now ‘starving for want’ of subsistence.109

These ostentatious claims probably served well the parties involved. Because the moral status of entrepreneurial activities (which frequently involved elements of private gains) was at best ambiguous if not hotly contested, the association with public service helped make economic innovations more socially and religiously acceptable. This explains in part why projecting activities attracted noblemen, professionals, and rising middle sorts alike. For wealthier men, projecting offered an attractive avenue for exploiting cheap labour and falling rents without jeopardizing one’s reputation, whereas for humbler and financially desperate folks, it provided a possibility of augmenting income while highlighting one’s public service.

Yet it was more than a timeserving rhetoric. By the end of the seventeenth century, the number of the poor who suffered near starvation, or deep poverty, declined, thanks in part to demographic stability and declining grain prices. But because the number of those who were on the verge of requiring poor relief (i.e. shallow poverty) did not decline, the concern for poor relief persisted despite overall economic improvement.110 Similarly, even in the late seventeenth century when the state’s capacity to raise revenues was improving, the governmental apparatus still left a ‘vacuum into which external, unofficial, [fiscal] advice poured’.111 For the government that was seeking to establish its imperial commercial prowess and fund expensive wars without grieving its subjects, therefore, projects for encouraging domestic economic innovations seemed to offer a great solution, not only for winning a favourable balance of trade, but also for raising revenues while relieving the poor. The widespread assertions of public service testify to this multi-faceted social and political significance of economic innovations.

From the later seventeenth century (especially from the 1660s), economic innovations declined as fiscal options for the government and increasingly became private enterprises with little governmental stakes. This shift in the practical arrangements did not, however, incapacitate promoters from highlighting their public significance. In 1688 the Royal Lustring Company procured a patent for silk cloths called ‘alamodes’ and ‘lutestrings’. Unlike early Stuart ones, the patent made no formal arrangements to pay fees to the Exchequer.112 But the company declared that its work would advance ‘the Honour and Common Good of this Nation, by Imploying many Thousands of Poor People’ and ‘by saving the vast Expences of Money’ by reducing import.113 Even in the absence of formal arrangements, therefore, promoters continued to publicize beneficial implications of their schemes.

Such publicity was not always accepted at face value. Promoters instead faced enduring distrust, most notably encapsulated in the image of the ‘projector’ who would, it was alleged, pursue nefarious private interests by pretending to serve the public. This negative figure of the ‘projector’ first emerged in the 1600s, a decade that saw an intense parliamentary debate over monopolies and other controversial grants. The image began to circulate through plays, pamphlets, and other media, and soon it gained its own momentum and became something of a negative stereotype. In 1636, when controversial monopolies again flourished under Charles I, Daniel Featley voiced a view that spoke for many: ‘Let not the Projector pretend the publike good when he intends but to robbe the riche and to cheat the poore’.114 In the 1690s, which Defoe declared to be the ‘Projecting Age’, most controversial ‘projects’ took the form of joint-stock companies. Accordingly, the image of the projector became that of the

---

109 T. Bushell, _An extract ... of the lord chancellor Bacons philosophical theory of mineral prosecutions_ (1660), sig. A2, p.3.
112 _Chronological Index of Patents of Invention_ (1854), no. 261.
113 _The charter of the Royal Lustring Company_ (1697), p.[3].
114 D. Featley, _Clavis mystica_ (1636), p.477. See also T. Haywood, _Machiavel_ (1641), sig. [A3v]; _The new projector; or the privileged cheat_ [1662?]; J. Wilson, _The projector: A comedy_ (1665).
merciless company promoter rather than the monopolist; but there remained an underlying concern about the perversion of the public good. The anonymous author of *Angliae tutamen* complained in 1696, for example: ‘never did Projector yet aim at anything so much as his own particular Profit and Interest, though they always pretend the contrary’.

Promoters asserted their public service in this context, acutely aware of this prevailing distrust. In 1696, upon publishing *An Essay on the State of England* that contained proposals for improving poor relief and industries, the Bristol merchant John Cary gratefully received John Locke’s comment that his *Essay* was written ‘without partiality’, since the philosopher’s remark seemed to confirm that Cary was not among ‘projectors’ who aired schemes ‘fitted for their private Interests under the splendid name of the Publique Good’.

Promoters’ concerns were multi-faceted, and they took various measures to avoid being stereotyped as projectors. In his letter to Locke, Cary in fact confided that he had omitted from his *Essay* some of his proposals for levying tax and improving industries. It was because publishing them ‘might bringe me under the name of a Projector, which I carefully endeavour to avoyd’. Six years later, when Thomas Savery, FRS, published a tract on his patented steam engine, he presented the reader ‘with a Draught of my Machine’. He did so because he might otherwise find himself ‘lying under the Scandal of a bare Projector’, advancing ‘a useless sort of a Project’.

More specifically, when promoters requested enforcement of some of their measures from the government, they often stressed that their schemes would benefit rather than oppress the public. So an early Stuart promoter of a fishery scheme assured that ‘Lett not the fowle name of Project make you prejudicate in your opinions … I create noe new devises, taxe, or toales; I invent noe Impositions, nor raise contributions’. Such reassurances were probably little more than a lip-service, especially when promoters addressed Charles I’s government that was willing to raise revenues even from controversial monopolies. But after the collapse of his Personal Rule, Hartlib and his associates in fact opted to avoid draconian imposition of economic ‘improvement’. When the puritan reformer John Dury brokered an ambitious scheme for a state-led reform of fishery, agriculture, and colonial plantation in 1645, he explained that ‘I did conceive [it] to bee possible’ because its original proponent chose not to demand ‘any speciall priviledge as Monopolists or projectores use to doe’. In 1652, the agricultural reformer Walter Blith recounted that ‘a naughty generation of men’ had obtained patents with ‘their pretences of great abilities in Enginereship, and great experience of raising and drawing water’, and thereby ‘brought Ingenuity under the scandal of projects and new devices’. In order to distance himself from these scandalous projectors, Blith refrained from seeking patents and investments. Instead, he chose to publish books about improved cultivation methods, stressing that they were ‘Experimented at the onely proper cost of the Author’, ‘all which are therefore somewhat the more Credible’. Showing one’s concern about the danger of government impositions became a commonplace.

---

115 *Angliae tutamen* (1695), p.10.
118 Locke, *Correspondence*, vol. 5, pp.633-4.
120 Cambridge University Library, MS. Gg. V. 18(5), fol. 195v [e. C17].
121 Leng 2008.
122 Hartlib Paper, 53/14/9A-B.
123 W. Blith, *English improver improved* (1652), sig. [c4v], c2; idem, *English improver* (1649), sig. [a2v]-a.
yearly raise £800,000 to the Exchequer, he did not fail to add that this would be accomplished
without ‘Raising any Burthensome Taxes, or putting their Subjects to heavy Charges’. 124

Taken together, these various responses suggest that distrust of the projector did not simply reflect scandalous aspects of the culture of innovation; it became a crucial context that shaped what promoters presented in public, how to present them, and what specifically they might avoid. This brings us to consider the implications of this paper. First, schemes for economic innovations were promoted as potential solutions for wider concerns about early modern political economy: not only the balance of trade, but also public finance and welfare provision. The assertion of public service was not peripheral; its pervasiveness should remind us of the socio-political significance of economic innovations in early modern England.

Second, the negative stereotypes about the dubious projector highlight distrust as a crucial context for understanding innovation. Some of the promoters like the notorious Sir William Cockayne surely practised the chicaneries that the projector stereotype embodied. Yet given the evidence presented here, we cannot take the image of the nefarious projector as unproblematic evidence of early modern commercial culture. Any study of economic innovations must begin by distinguishing actual practices of innovation from stereotypes about them. In this respect, it is particularly meaningful to study history of economic innovation through the early modern concept of ‘projecting’. Neither a history of crown finance nor that of joint-stock companies alone can fully capture underlying continuities of distrust of ostentatious projectors within the evolving practices of economic innovation.

Third, while few promoters ignored negative stereotypes about them, their responses were not homogenous. As the case of Blith suggests, one solution was to highlight one’s financial independence, and refrain from asking for investment. (Some Fellows of the Royal Society soon adopted similar strategies.) Remarkably, however, many others continued to assert their public service without giving up their financial stakes. So, one fruitful way forward would be to build upon history of science approaches to trust, and to examine how (like quacks, alchemists, and Newtonian philosophers) promoters of economic innovations sought to establish credentials amidst endemic distrust.125

Fourth, taking distrust seriously in this way will enrich our understanding of long-term economic development, for even sound proposals could be dismissed according to stereotypes, and their economic potential could be lost in the process. Recently, Mokyr and others have suggested that industrial growth owed much to the development of the knowledge economy, that is, to the cultural and institutional frameworks (such as the republic of letters, joint-stock companies, the Royal Society, and the Society for Arts) through which ‘useful knowledge’ was pooled, improved, funded, and put to use.126 This paper suggests that we can complement these studies of enabling factors by exploring the pervasiveness of distrust, an element that constrained promoters of innovations.

By taking the early modern concept of projecting seriously, this paper opens up further investigations. In what respects did distrust of the projector shape cultures of innovation in the long-run? Did the promotion of economic innovations differ across different industrial sectors, and throughout the British Isles? It is known that schemes for economic and technological innovations were promoted but not readily trusted in other European counties. In what way, if at all, was the English culture of distrust and public service unique?

A columnist of the Economist has recently marvelled: ‘How similar today’s management problems are to those of yesteryear’. 127 Indeed. Precisely because business entrepreneurs, politicians, and wider publics are still concerned with public impacts of

124 R. Haines, Aphorisms upon the new way of improving cyder (1684), sig. [Bv].
127 Economist, 393, no. 8658 (2009), p.84.
seemingly private businesses, we have good reason to explore the early modern culture of
distrust, innovations, and public service as contemporaries experienced it.

**Secondary sources cited** (Primary sources are cited fully in footnotes)

Brooks, C. ‘Taxation, Finance, and Public Opinion, 1688-1714’ (Ph.D thesis, University of
Dyer, C. *An Age of Transition?: Economy and Society in England in the Later Middle Ages*
(2005).
Leng, T. *Benjamin Worsley (1618-1677): Trade, Interest and the Spirit in Revolutionary
Robertson, H.M. *Aspects of the Rise of Economic Individualism* (1933).
1926 in German].
Slack, P. *From Reformation to Improvement: Public Welfare in Early Modern England*
(1988).
Stewart, L. *The Rise of Public Science: Rhetoric, Technology, and Natural Philosophy in
Thirsk, J. *Economic Policy and Projects: The Development of a Consumer Society in Early
Grey gold at the frontier of change: the Bowes family estate’s role in the North East lead industry, 1550-1760

John W Brown, University of Durham  
(j.w.brown@durham.ac.uk)  
Supervisors: Professor Ranald C Michie & Dr Adrian G Green

Introduction
This paper derives from a case study of one family estate’s relationship with a high value mineral product applying both quantitative and qualitative methods; it is heavily reliant upon original sources, particularly the Strathmore Papers at the Durham County Record Office.128

Recently Burt, bemoaning the absence of academic research into non-ferrous mining in the mineral economy, resurrected the debate regarding the underestimated significance of the role of the extractive industries in creating ‘the defining context for the whole process of … industrialization’.129 Analysis of the Bowes estate’s experience in Upper Teesdale closes a gap in the history of the lead industry in the northeast, which until now has been dominated by study of the London Lead Company and the Blackett-Beaumont organizations.

This study addresses aspects of change and continuity across two centuries in an estate’s handling of mineral rights, extending both our knowledge of an important extractive industry and contributing to wider debates, such as landlord absenteeism, the estate as ‘firm’ and gentry entrepreneurship – including the roles of different family members, the estate steward, regional relationships and links with London, and proto-industrialization.

Merchants and mining: c.1550-1611
When domestic and overseas demand stimulated growth in English pig lead production to reach 12,000 tons per annum by 1600,130 Bowes family members became leading figures in the northeast lead industry, founded upon business acumen, social and political standing, and Crown favour and patronage.131 They were directly involved in mining, smelting, and trade from at least 1550, demonstrating gentry entrepreneurship contrary to the prevailing view,132 yet were not granted mineral bearing lands by the Crown until 1593. The Bowes, in the vanguard of upper gentry enterprise in mineral exploitation, seized the opportunity for profit presented by mines leased from the Crown in Teesdale, and in Weardale, the most productive, from the Bishop of Durham.133 Smelting was the keystone of the Bowes lead organization, and Sir William Bowes built a water-powered bellows-blown smelt mill before c.1595 – an exception to the view that gentry were exploiters rather than innovators – which changed the spatial organization of this mining area.134

The Bowes were the chief lead merchants in Newcastle-upon-Tyne with an effective monopoly created via the regulation of the Merchant Adventurers. They also supplied London

---

128 Durham County Record Office D/St.  
merchants and the north European market, the former often providing working capital for mining in the order of several hundred pounds per contract.\textsuperscript{135}

The dearth of statistical records prevents meaningful extrapolation, but a reasonable estimate is achievable for the Bowes’ role in northeast lead production. In 1599 they supplied 80 fothers of pig lead to the Newcastle market, and 100 in 1600. In 1601 Newcastle shipped out 59 ¼ fothers. By way of an inter-regional family comparison, in 1600 the Bowes lead supplied to Newcastle was equivalent to 42 per cent of that produced by the renowned Talbot family in Derbyshire.\textsuperscript{136}

\section*{Retrogression and revival: 1611-1712}

The Bowes were leading northeast lead producers between c.1564 and 1600 – lessee entrepreneurs – yet vacated their position in an expanding market underpinned by the demands of domestic construction during the seventeenth century.\textsuperscript{137} Their role, evidenced by extant leases, metamorphosed into passive, rentier activity on their Teesdale estate.\textsuperscript{138} The Bowes’ relative inactivity in lead production was not a consequence at any stage of either the existence from the 1560s, or its extinction in 1693, of the Mines Royal, an oft promoted cause of landowners’ failure to exploit minerals.

There are identifiable reasons for this change. In 1611 the Bowes lost the Bishopric lead lease when Sir William Bowes died without male issue; the loss was substantial and never regained, and Bowes’ estate mines insufficiently developed to replace it. Until Sir William Bowes attained his majority in 1677 there was an absence of patriarchs capable of developing the family estate.\textsuperscript{139} It could also be argued that the family’s socio-economic and political standing waned as a consequence of the Bishop’s relationship with the Crown.

Between 1679 and 1712 there was negligible commitment to discovering new and exploiting existing lead veins; lead production on the Upper Teesdale estate was viewed as a risky, incidental source of income, and its nature was haphazard and intermittent. The Bowes were laggards compared to other organizations in the northeast, namely the Blacketts and the London Lead Company. Sir William Bowes was preoccupied with profits from coal following his marriage in 1691 to the coal heiress Elizabeth Blakeston of Gibside, and to a lesser extent with his business relationship with ironmaster Ambrose Crowley III.\textsuperscript{140}

\section*{Progressive patriarchy: 1722-60}

George Bowes became the estate’s patriarch in 1722, when the family’s wealth from coal was already established, later enhanced by George’s membership of the coal magnates’ cartel – the Grand Alliance. Despite such wealth, he personally directed the development of the estate’s lead producing potential.

Bowes inherited an unchanged estate management structure established in the late seventeenth century, but was innovative in his introduction of stewards specializing in mining and smelting, respectively Nathan Horn and John Gibson, who brought better integration of mines and mills. This commercialization of the estate, management for gain, was transfused with George Bowes’ insistence on a regular flow of communicated professional reporting, sometimes directly to him in London.

\begin{footnotes}
\item[\textsuperscript{135}] D/St/B2/142-145 recognizances or bonds; A. B. Raistrick & Jennings, History of Lead Mining in the Pennines (London 1965) p.41.
\item[\textsuperscript{138}] D/St/B2/1-10 inclusive, 1679-1712.
\item[\textsuperscript{139}] L.S. Stone, The Crisis of the Aristocracy 1558-1641 (Oxford 1965 unabridged edition) discusses the effects p.169. See also Heal & Holmes p.24.
\end{footnotes}
Bowes and his stewards’ primary management tool was the development of the mining lease, which legally crystallized the Bowes monopsony of lead ore and the control of smelting. Leases were the basis for strict management - Bowes’ regulations – rather than customary arrangements and mining laws, and frequently incorporated partnership agreements when shared risk was preferred. Equipment and tools, steward expertise, and sometimes money were ‘put in’ through the medium of the lease, demonstrating the Bowes estate operated as a capitalist firm, albeit family based and to an extent paternalistic.141

During the period 1740-60, as a consequence of an unprecedented approach to the possibilities of a metalliferrous product, lead production became a more organized economic activity on the Bowes estate in a barren landscape. Exploration, discovery, and mining became an embedded, continuous process and expectations were high. In 1748/9 awaiting his master’s instructions, steward Thomas Colpitts I wrote ‘We may then set about to make Trials, and whether we meet with a new Peru, or otherwise, it will at least serve as a Beacon to guide all future Generations from splitting on that rock’.142 George Bowes granted 22 tacks and leases and 30 mines/mining areas were worked – 25 at different times by various lessees, 11 by George Bowes, and 6 by Bowes and partners.

Lead mining on this estate conformed to current practices – gunpowder blasting, and levels and ventilation at the deeper mines, and mechanical stamps for dressing ore – but there was little change in technique or technology, no revolution on the estate. Knowledge was cumulative, geological understanding practical, but neither scientific nor predictive. Similarly, the smelting process was up-to-date, using the ore hearth and slag hearth, preceded by improved washing and dressing. George Bowes instigated managed change in metallurgy producing an improved yield by the late 1750s at the new Wemmergill smelt mill. Lead ore output was 3,375.25 bing between 1741-59 (a bing = 0.4 ton); smelted pig lead output was 457 fother 1741-60 (a fother =1.05 tons at Newcastle).

The Bowes estate traded locally in lead ore and pig lead, the former being relatively insignificant, whilst direct export was virtually non-existent. Most lead was sold to leading merchants; of the diverse merchants specializing in lead, two-thirds was sold to Peareth & Sorsbie, who traded with London merchants, and 11 per cent to Ralph Carr. It held a minority share of the Newcastle-upon-Tyne market compared to Black-Beaumont lead; George Bowes had no influence over the price of lead, nor was there any association of producers to control it, in contrast to the Bowes’ coal business. Bowes’ expansion of lead output suffered enforced contraction because of wars, particularly that of 1756-63, suppressing lead exports to Europe which were not replaced by increased local and London consumption. Consequently, the Bowes were compelled to stockpile lead, because short-term inelasticity of supply meant producers flooded the Newcastle market causing prices to fall until market equilibrium returned after war.

The role of George Bowes is singular. Until recently seen as an archetypal absentee landowner, MP, and wealthy coal magnate from at least the mid-1730s, his personal participation in the exploitation of lead alters this assessment.

He was a strategist, but alongside stewards also managed each stage of his estates’ lead business. Strategically he moved the estate from active, direct exploitation of lead in the 1740s, to largely passive management in the early1750s, with renewed direct interest from 1756, all in response to learned market mechanisms. The Bowes commitment to lead is confirmed by expenditure of £4,869 on lead mining alone during 1731-58, whilst that of the previous century amounted to less than £200.

George Bowes introduced most of the working capital, but during the 1750s actively encouraged, through leases, exogenous investment, though small-scale, from both local

142 D/St/C4/1/3.
sources and other lead regions, such as Yorkshire and Derbyshire. This was hardly a rush for grey gold, but indicates recognition of the Bowes estate’s lead potential at a stage when it appeared as the final frontier of lead mining in the North Pennines. Furthermore, his use of leases was a direct incentive to small-scale enterprise in the extractive economy.

George Bowes found no necessity for technological change; instead he increased activity within the bounds of existing technology, in doing so revealing exceptional knowledge of a metalliferous process. He focused on improving pig lead yield, and by managing the disciplined work rate and key skill of smelters was responsible for more efficient metallurgy and ultimately greater productivity. Similarly, he micro-managed washing and dressing which directly affected ore quality for smelting, and the labour force in terms of remuneration and accommodation in an upland wilderness environment.

Compared to his predecessors, George Bowes was innovative in two ways: he directed change in the structure and organization of the production process; and he recruited specialist stewards for mining and smelting and encouraged the poaching of reputable smelters and carriers from nearby families with lead interests, like the Vanes of Raby Castle.

George Bowes was eager to market his lead and acted as merchant in Newcastle during the summer months of the 1740s, coordinating the output, movement, and delivery of lead. The crucial variable factor in general viability and profit margin was the cost of transporting both lead ore and pig lead. Consequently, George Bowes was confronted, in the absence of infrastructure, by the spatial problem of smelt mill location, and the logistical one of routes and distances and capabilities of packhorse carriers. Suffice to say he resolved both; in 1756 he decided – based upon power, fuel, and roads – to re-locate smelting nearer the mines, and chose the northerly route to the Newcastle nexus rather than the easterly one to Stockton. By 1758 overall carriage costs were reduced by 13 per cent, and for bulkier ore alone by almost 50 per cent. Consequently, Bowes lead was supplied to Newcastle manufacturers and the London market more profitably.

Lastly, George Bowes continued the family’s practice of occasionally conducting lead business in London. For example, in 1749 he dealt with the Earl of Carlisle regarding their partnership problems at Crinkle How mine on the Bowes estate, and there are financial records disclosing transactions between Bowes, the Blacketts, and the London Lead Company relating to lead business in the northeast.

Conclusions

The Bowes experienced their most lucrative relationship with lead during the late sixteenth century as probably the region’s principal lead producers and leading suppliers to the Newcastle market, forging lucrative ties with London merchants linking the European market. For most of the seventeenth century, when the props of earlier success were removed and dynastic misfortune prevailed, they had no role in the region’s lead industry beyond their estate, although from the 1670s passive management of lead appeared as a consequence of greater commercial awareness in estate development.

George Bowes’ patriarchal estate management wrought several changes: improved organization and structure, including a level of capital formation; more extensive mining activity; improvement in metallurgy; and innovation in estate management. George Bowes’ role contradicts any notion of mineral lord absenteeism; he was the progenitor of an estate industry that came to fruition after his death, a ‘composite entrepreneur’, a capitalist working to control both demand and supply in an extractive industry.

Unfortunately, although he was the first directly involved family member since his sixteenth century predecessors, the Bowes estate’s overall position in the northeast lead industry was insignificant. Its mineral endowment was underdeveloped, and remained so until after 1800.

The Bowes lead pocket was at the margin amongst a cluster of organizations specializing in the extraction of lead in a region largely characterized by large-scale investment and long-term strategy. George Bowes’ efforts were restricted to multiple small-scale operations requiring little capital, unlike coal, avoiding the risk of greater capital input for deeper mining. Consequently, the pace of industrialization on the estate was relatively slow, demonstrating variation in change within the northeast. Yet he made progress by creating an industrial environment in a fundamentally agrarian setting. Lead production on the Bowes estate in the mid-eighteenth century provides a strong example of proto-industrialization, and in a regional context contributed to the process of industrialization.144

---

Learning from crises: the example of private bankers in the aftermath of the South Sea Bubble

Gareth Turner, University of Durham  
(g.d.turner@durham.ac.uk)  
Supervisor: Professor Ranald C Michie

The South Sea Bubble famously imploded in 1720, an event which has now achieved ‘mythical’ status.145 While not strictly a banking crisis, the centrality of the English public debt to the nascent bankers of the time meant that there was potential for significant ramifications upon them. Most histories of the banks that then existed allude to its significance.146 Some attempts at analysis of this topic have been attempted, the most recent example being Temin and Voth’s study of Hoare’s responses to the Bubble.147 This paper will focus firstly on the reason for linking the development of private banking to the South Sea Bubble. Secondly it will supplement the work on Hoare’s with material from other contemporary banks to establish an outline analysis of how private bankers in London responded to the fall-out from the Bubble in the medium-term.

Temin and Voth examine private banking within the concept of an emerging technology that required a process of learning.148 This approach recognizes the difficulty of running these firms on a sound, long-term basis. Within this context they portray the South Sea Bubble as an educational event, teaching the partners of banks about effective management.149 The validity of this approach is confirmed by George Middleton, partner in what became Coutts, claiming he would ‘learn so much experience as always for the future to be in a condition to meet any storm’.150 One of the conclusions reached from the study of Hoare’s is that it required two decades for the bank to ‘find a way to expand its banking business on any kind of regular basis’.151 This study will attempt to show if other banks modified their business over such a timeframe post-Bubble. Before doing so one needs to consider why the Bubble mattered for bankers.

The South Sea Bubble was a spectacular boom and collapse in the share price of the South Sea Company, of which the main role by 1720 lay in managing a portion of the English public debt (figure 1). Some themes are clearly emphasized by the crisis: the hatred of stock-jobbers, political corruption, and the potential for spectacular losses and gains.152

149 Ibid, p.165.
150 Cited in Healey, Coutts & Co, p.49.
151 Temin and Voth, ‘Emerging technology’, p.178.
One suggested outcome of the implosion of the Bubble was the decay of public credit, with negative impacts upon the wider economy.\textsuperscript{153} These were likely political statements, rather than economic truths.\textsuperscript{154} Even in the areas of investment, there are reasons to doubt the significance of the Bubble nationally: there is a lack of increase in bankruptcies and the only evidence for monetary pressures is a five per cent increase in the price of gold. Muldrew’s inability to suggest a rise in credit litigations is also held as evidence in favour of this position.\textsuperscript{155} However it is possible that changing litigation patterns post 1690 are responsible for obscuring this issue.\textsuperscript{156} Criticism of the Bubble was as much about socio-political tensions as economic problems. For agriculture and industry then the Bubble made little difference.\textsuperscript{157} The situation for London private bankers differed because the problems in the area of high finance were genuine.

The immediate impact of the bursting of the Bubble has been thus described:

\ldots banks with long lineages such as Atwill and Hammond, Long and Bland, and Nathaniel Bostock, were closing their doors. Hoare’s was busy offloading stock in great quantities, and bankruptcy proceedings were being taken against two bankers who had once been worth £300,000.\textsuperscript{158}

The occurrences of the last quarter of 1720 clearly caused stress amongst the London bankers. There were runs upon banks. The Sword Blade bank collapsed, as did Mitford and Merten’s (with £170,000 liabilities).\textsuperscript{159} At least five goldsmith bankers failed.\textsuperscript{160} Joslin suggests that disappearances in the banking sector in 1720-1 were unusually heavy.\textsuperscript{161}

\begin{itemize}
\item \textsuperscript{153}Balen,\textit{ English Deceit}; Hoppit, p.146.
\item \textsuperscript{154}Hoppit, ‘Myths’, p.155.
\item \textsuperscript{155}Ibid, p.153.
\item \textsuperscript{156}Craig Muldrew,\textit{ The Economy of Obligation: The Culture of Credit and Social Relations in Early Modern England} (Basingstoke, 1998), p.222-4 and p.241-2.
\item \textsuperscript{157}Hoppit, ‘Myths’, pp.151-4.
\item \textsuperscript{158}Balen,\textit{ English Deceit}, p.155.
\item \textsuperscript{159}Hoppit, ‘Myths’, pp.157-8.
\item \textsuperscript{160}Healey,\textit{ Coutts}, p.49; Carswell lists six: Atwill and Hammond, Cox and Cleave, Long and Bland, Nathaniel Bostock, Mitford and Mertens, Daniel and Jospeh Norcott,\textit{ South Sea Bubble}, p.197.
\end{itemize}
The direct exposure to the crisis came through bankers’ increasing investment in government debt that followed the establishment of Bank of England, and later the South Sea Bubble. Dickson estimated that £105,000 was subscribed by a dozen goldsmith bankers to the South Sea Company in 1711. As large scale investors in government debt, some of their balance sheets would be exposed to its diminishing value. Yet this is dependent on the banks’ timing and purchase price of the securities. Purchases made early in the year remained profitable. Hoare’s proprietary trading yielded profits of £28,000 for the year. Some were likely less fortunate. For others direct exposure to the stock may not have been significant. Middleton claimed he was fortunate not to be heavily invested in the stock, as this would spare him ‘the scrape at the end’. Other bankers could see the emerging risk. Martin’s told one of their clients on 12th July 1720 he was very unlucky not to own South Sea stock, but would not advise making purchases at £1,000. Someone offering this advice was unlikely to be heavily investing himself. Nevertheless bankers were not omniscient: when the price hit 450 in September, Martin believed it would soon rise again. It did not and the head of the bank later claimed he was ‘blinded by other People’s advice’.

Equally important were wider money market pressures accompanying the collapse of the Bubble. This was a tightening of liquidity. It meant increasing demands upon bankers for cash. Middleton was under pressure due to demands made upon him by his customers and was forced to stop payment in December 1720, undone by his exposure to John Law. A contemporary rhyme suggests that Martin’s bank never refused payment, but did face real pressure for ready money. Although shortages of cash were not new, with a bad crisis in 1710, the collapse in confidence was more severe on this occasion. This explains the significance of the Bubble as a learning event: some banks were more exposed than others, but the impact was pervasive.

The medium-term significance on London private bankers can be examined through the aggregate change in the number of bankers in London. A Darwinian process of removing the weakest members of a profession is one of the main facilitators of its spread. In terms of the overall impact on bankers, reliable numbers remain elusive. Joslin suggests the number of bankers grew from 24 to 27 between 1725 and 1745, although in 1740 the figure was higher at 31. Suspicious disappearances and bankruptcies were apparently common through to 1745. The key point is that despite the crisis, banking continued a gradual expansion.

It remains to be considered how common learning through the adaptation of techniques at the firm level was. Temin and Voth’s conclusions are limited by the nature of their study, focusing on the modifications made by one established bank to the crisis. There is no indication if Hoare’s response to the crisis was unique. Generalized conclusions to the problem are difficult because of the nature of the surviving records. The records are limited by two factors: inconsistent record-keeping at the time, and the subsequent loss of many details.

165 Carswell, *South Sea Bubble*, p.197.
166 Cited in Healey, *Coutts*, p.49.
172 Temin and Voth, ‘Emerging technology’, p.178.
account books. Yet some attempt to establish the breadth of adaptation matters as the learning concept provides a method to assess the understanding and responsiveness of bankers. It is common to emphasize the differences between early eighteenth century bankers.\footnote{Joslin ‘Private Bankers’ pp.176-9, Frank Melton, ‘Deposit Banking in London, 1700-90’, Business History 28 (1986), p.40-1.} They are real and can be shown numerically:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Start date</th>
<th>Start figure</th>
<th>End date</th>
<th>End figure</th>
<th>% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drummond’s money lent</td>
<td>1720</td>
<td>£3,293</td>
<td>1740 and 1744 average</td>
<td>£99645</td>
<td>2926%</td>
</tr>
<tr>
<td>Child’s assets</td>
<td>1713</td>
<td>£112,000</td>
<td>1740 and 1745 average</td>
<td>£478,000</td>
<td>327%</td>
</tr>
<tr>
<td>Hoare’s assets (approx.)</td>
<td>1712</td>
<td>£100,000</td>
<td>1740-42</td>
<td>£450,000</td>
<td>350%</td>
</tr>
</tbody>
</table>

These figures make it clear that although some banks may have been in a comparable position to Hoare’s, others had little in common. The likelihood of similar responses in the latter case is diminished. In identifying realistic comparisons to Hoare’s, Child’s and Martins are the most suitable candidates. They were similar in age, background and behaviour.\footnote{Total assets are not available for Drummonds, money lent has been used as a proxy; Royal Bank of Scotland archives, Messrs Drummond, DR/427/1. For Hoare’s, see Temin and Voth, ‘Emerging technology’, p.157. For Childs, see below.} One area of potential comparison is the issue of bank liquidity. The changes in Hoare’s cash ratios are shown below:

<table>
<thead>
<tr>
<th>Hoare’s Cash ratios, as a proportion of assets\footnote{Temin and Voth, ‘Emerging technology’ p.160.}</th>
<th>Pre-1720</th>
<th>1720-42</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Clearing having plentiful liquid reserves was important. In a crisis people were likely to swap their bills for cash.\footnote{Hoppit, ‘Financial Crises’, p.43.} The banker Middleton learnt this lesson, aiming to be able to meet any demand at an hour’s notice once he could recommence business after his misfortune in 1720.\footnote{Healey, Coutts, p.53.} Some comparative figures in relation to cash reserves and total assets were obtained. Martin’s earliest surviving ledger (1731) shows assets of £159,472, of which cash accounted for £74,570. This gives a cash/assets ratio of 46.8 per cent. In 1744, liabilities of the bank had increased to £262,894, but the records show cash reserves remained constant at about 48 per cent.\footnote{Martin, The Grasshopper, pp.130-132; Chandler, Four Centuries, pp.117-9.} Child’s compiled figures irregularly initially, but the pattern of maintaining a cash ratio of about 50 per cent seems quite clear. Only at the end of the period does it decline significantly: one suspects that this relates to the pressures accompanying the Jacobite rebellion.

<table>
<thead>
<tr>
<th>Child’s selected balance sheet figures\footnote{RBS archives, Child &amp; Co balance books, CH206/1 and CH206/2.}</th>
<th>Year</th>
<th>Cash</th>
<th>Total Assets</th>
<th>Cash/total assets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1713</td>
<td>£59,982</td>
<td>£112,122</td>
<td>53%</td>
</tr>
<tr>
<td></td>
<td>1727</td>
<td>£239,764</td>
<td>£391,555</td>
<td>61%</td>
</tr>
<tr>
<td></td>
<td>1730</td>
<td>£143,325</td>
<td>£320,624</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>1735</td>
<td>£266,977</td>
<td>£471,633</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td>1740</td>
<td>£289,920</td>
<td>£578,434</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>1745</td>
<td>£99,511</td>
<td>£376,712</td>
<td>26%</td>
</tr>
</tbody>
</table>


Overall the high liquidity ratios tend to give credibility to Temin and Voth’s picture of banks concerned primarily with protecting their liquidity. Indeed it actually suggests that Martin’s and Child’s were even more conservatively run than Hoare’s. On the other hand it would seem that in Child’s case, this was not a lesson of the Bubble, but a longer standing practice of the bank.

As a contrast, Barclay’s behaved slightly differently to these three banks. Figures for its liquidity are available from 1733 onwards and are shown below. For much of the 1730s it appears to have maintained a generous but noticeably lower, ratio than its peers. Again this shows that generalization about bankers’ behaviour in this period are problematic.

The timing of the upward trend in Barclay’s figures also raises questions about learning habits. The early 1740s were a time of tightening credit, and this may have had as much significance as longer term influences of the Bubble. This of course raises its own problem: the identification of what was specifically a response to the ‘learning’ event and what is part of a longer run trend or responsiveness to economic circumstances. This problem is reinforced in the next example.

Bank learning was not confined to adjusting cash reserves. Other measures can also indicate successful adaptation of the business, including profits and growth rates. As has been suggested, Drummond’s represents a different experience of banking in the period. The bank originated from a goldsmith background but was at an earlier stage of development than Hoare’s or Child’s. It thus possessed greater scope for growth and improvement.

---

183 Barclays Bank Archives - Barclay, Bevan, Tritton & Co, Yearly balance sheets, Ref 0131-0071 to 0082.
185 Temin and Voth, ‘Emerging technology’, pp.154-5.
186 Melton, ‘Deposit banking’ p.44.
Drummond’s Profitability and Income

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Interest Income</th>
<th>Total income</th>
<th>Expenditure</th>
<th>Profits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1719</td>
<td>£92</td>
<td>£1098</td>
<td>£312</td>
<td>£786</td>
</tr>
<tr>
<td>1720</td>
<td>£258</td>
<td>£871</td>
<td>£187</td>
<td>£684</td>
</tr>
<tr>
<td>1721</td>
<td>£108</td>
<td>£610</td>
<td>£97</td>
<td>£513</td>
</tr>
<tr>
<td>1740</td>
<td>£2,594</td>
<td>£2,969</td>
<td>£2,729</td>
<td>£240</td>
</tr>
<tr>
<td>1741</td>
<td>£3,224</td>
<td>£3,671</td>
<td>£6,008</td>
<td>-£2,337</td>
</tr>
<tr>
<td>1742</td>
<td>£2,915</td>
<td>£3,112</td>
<td>£2,864</td>
<td>£260</td>
</tr>
<tr>
<td>1743</td>
<td>£3,444</td>
<td>£3,834</td>
<td>£3,115</td>
<td>£720</td>
</tr>
<tr>
<td>1744</td>
<td>£2,753</td>
<td>£3,045</td>
<td>£2,576</td>
<td>£510</td>
</tr>
</tbody>
</table>

One can identify a step-change in the scale of the bank in the aftermath of the Bubble. This is probably best seen in the figures showing interest income, which became the main profit driver. It would be fanciful to ascribe this entirely to the Bubble itself, but the decline in competition may have been helpful. The stagnating profitability is also striking. It is argued that declining or stagnant profits are a case of paying for knowledge. 188 ‘Learning’ is one way to conceptualize the lack of significant change in Drummond’s earnings. (Profitability may be understated, given Andrew Drummond’s propensity to draw on the House account for income, i.e. it is partially an accounting phenomenon.) Comparisons with Fowler, Simpson and Rocke, and Martin’s are helpful. 189 The profitability figures of all three banks are perhaps indicative of a split between London bankers by the 1730s. Some may have reached a stage of development where they too could manage to regularly grow profits, in a way similar to Martin’s. Others, like Drummond’s, may not yet have reached a knowledge level to allow this to occur.

This paper argues that the Bubble did present an extraordinary shock for bankers. Temin and Voth’s portrayal of it as a learning experience has value, particularly at the firm level. Some surviving bankers attempted to adapt their business model to better cope with future events. For established houses this may have motivated more cautious behaviour in relation to liquidity. Lack of knowledge can also be useful in explaining divergent performances between

187 The figures exclude the bank’s goldsmith income, which was maintained until 1737. Unfortunately the bank does not have surviving figures for profits in the intervening years. RBS archives, Messrs Drummond, DR427/1 and DR427/20-24.
189 Chandler, Four Centuries, p.119; Barclays Bank Archives, Goslings and Sharpe, Ref 0130-0663.
institutions. However this paper also argues that such a ‘learning’ approach causes difficulty. This results from the wide differentiation between bankers in this period: ‘learning’ might produce different outcomes at different institutions. This diversity is not necessarily a problem – it may well be beneficial for the stability and utility of the sector. Yet the logical conclusion is to diminish the significance of any major event. Some participants already had the knowledge; others were removed, while newcomers would be ignorant. At the aggregate level, the number of learners, even from an abnormal event is limited. Maybe this is part of the reason why the Bubble did not act as a major limitation upon banking development.
Interbank competition and financial stability: the case of Dutch cooperative banks in the early twentieth century
Christopher L Colvin, London School of Economics
(c.l.colvin@lse.ac.uk)
Supervisors: Drs Gerben Bakker & Max-Stephan Schulze

Standard paradigms of competition are inappropriate for the analysis of the banking sector due to the presence of strong information asymmetries in financial markets which simultaneously accord banks their *raison d’être* and their source of fragility (Freixas & Rochet, 2008). Unlike many other markets, there is no discernible relationship between the structure of banking markets and the competitive outcome. For instance, a market with just two banks can be very competitive if customers can easily switch their business between them. The nature of the relationship between competition and financial stability is controversial (Berger et al., 2009). The traditional view is that competition encourages bankers to take on high-risk projects, whilst bankers with market power are more risk averse as they stand to lose their monopoly rents. The revisionist view is that competition drives up interest paid out on deposits, reducing bankers’ moral hazard and increasing stability.

This paper analyses the industrial organization of the Dutch rural market for small-scale deposits in the early twentieth century. It first measures the nature and level of competition for deposits between *boerenleenbanken*, rural cooperative microfinance banks that dominated this market. It does so for the year 1919, a relatively stable point immediately after the First World War and immediately before a financial crisis. It then determines the nature of the relationship between interbank competition and bank-level financial stability in the Dutch case. This case study is useful because its peculiarities permit the isolation of the two key factors that influence competition in banking: transaction and information switching costs, the first in this case associated with geographic distance and the second with religious segregation. The analysis combines a cross-section of balance sheet financial performance data pertaining to 1,141 banks with socioreligious data from the closest census year, farming survey data, and land registry topographical data.

The ownership structure of *boerenleenbanken* brings particular challenges; cooperatives’ business objectives differ significantly from conventional firms as they are owned and run by groups of their customers. This paper meets these challenges by applying intuition from the so-called new industrial organization literature to the specific Dutch historical context; it abandons the traditional structure-conduct-performance (SCP) paradigm and instead infers behaviour directly from an appropriate performance measure. This paper finds that both transaction and information switching costs are important determinants of banks’ market power, and finds some evidence of a non-linear relationship between the level of competition and banks’ financial stability that is negative up to a cut-off point. This suggests that the traditional view may hold true for interwar Dutch rural financial markets.

**Competition and switching costs**
Carbó et al. (2009) provide a comprehensive review of the different competition measures used in the banking literature. The most popular is the Herfindahl index, which measures the size of firms in relation to the market. This measure is problematic, especially when applied to banking markets. Bos et al. (2009) show empirically that Herfindahl indices suffer from the fallacy of division, where inferences from the fact that a whole (the market) has a property, to the conclusion that a part of that whole (a single bank) also has that property prove false; not every bank benefits equally from an increase in market concentration. Measurement problems aside, the SCP paradigm, implicit in works that measure competition using Herfindahl indices, has fallen out of fashion because it treats market structure as exogenous, whilst in practice firms’ conduct (behaviour) can influence market structure in a feedback loop. This
criticism aside, it is often difficult to arrive at defendable (geographic) market definitions in the first place, especially in historical research, rendering Herfindahl indices incalculable.

This study avoids the criticisms lodged at SCP analysis and the problems with Herfindahl indices by inferring conduct directly from performance. It adapts the Boone (2008) competition measure to the incentive structure present in cooperative banks. According to Boone, firms are punished more harshly for inefficiency the more competitive is the market in which they operate. The idea is that competition should homogenize banks’ performance, controlling for various other factors. Banks whose performance diverges significantly from the norm are hypothesized to benefit from market power (or suffer from lack thereof), through switching costs. The profit measure Boone uses to infer performance is inappropriate for the incentive structure present in boerenleenbanken, cooperatives similar to Germany’s Raiffeisen banks (cf. Guinnane, 2001), i.e. with unlimited liability lending, voluntary management, no dividend payments, and bank networks with central audit and clearinghouses (Sluyterman et al., 1998). The principle objective of boerenleenbanken was to increase their stock of savings deposits (liabilities), not their profits. Where a conventional firm seeks to maximize returns for its owners and managers, a cooperative’s owners and managers maximize their returns by minimizing those of the organization that they co-use, co-own and co-manage. This is partly achieved through charging below-market interest on loans and paying above-market interest on savings. It is only large-scale deposit gathering that afforded boerenleenbanken the possibility of lending out a small portion of their liabilities at ‘mates’ rates’.

Dutch market data for small-scale rural savings permit the isolation of transaction from information switching costs given the country’s social segregation by religious affiliation, a phenomenon known as the verzuiling (pillarization) (De Rooy, 1995). Independent Raiffeisen-style banks sprang up across rural areas from the 1890s and dominated the market by the late 1910s. Nearly all joined one of three cooperative networks: a Christian/Catholic network headquartered in Eindhoven (469 members), a neutral de facto Protestant network headquartered in Utrecht (627 members), and a small Catholic network headquartered in Alkmaar (45 members). The Netherlands was in many areas religiously divided, and so villages often had two or more banks, one for each network. The data employed pertain to every boerenleenbank operating in 1919 that belonged to a network. Other financial service providers are not analysed, a limitation of this study. The geographic distance between banks, a measure of transport costs or spatial competition that follows Degryse & Ongena (2005), is calculated using topographical data. Census data report the religious make-up of each municipality, a measure of information costs; Protestant cooperators may be unable to accurately monitor Catholic farmers’ efforts as they belong to a different church community.

Definitions of and summary statistics for the variables used are reported in Table 1. The models measure the effect of switching costs on the average annual percentage growth in savings held at bank $i$ over the year 1919 ($growth_i$), or identify the source of banks’ market power. Model (1) is as follows:

$$growth_i = \beta_0 + \beta_1 distown_i + \beta_2 distother_i + \beta_3 cathbank_i + \beta_4 majbank_i + u_i$$ (1)

where $distown_i$ and $distother_i$ capture transaction costs and are expected to have positive coefficients if these are indeed important, whilst $cathbank_i$ and $majbank_i$ capture information costs. Model (2) adds nine variables to control for factors that do not relate to switching costs directly, but instead to the economic attractiveness of bank $i$ to (potential) savers and the economic circumstance of (potential) savers themselves. Model (3) adds farming region fixed effects.

The coefficients of the distance variables ($\beta_1$ and $\beta_2$) are positive and significant in model (1), suggesting that larger distances bring more market power. The relative difference in their size suggests that banks compete less with neighbours of a different network. The
addition of control variables in models (2) and (3) reduces the significance of the second measure, strengthening this finding. The location of banks is endogenous in that banks are likely established where there is some demand for their services. This further strengthens the relationship as it systematically biases results against showing a distance effect. Adding fixed effects in model (3) improves the significance of the coefficients of the religious segregation variables (β3 and β4), suggesting that switching to a bank affiliated with a different Christian denomination within the same farming region is costly. But the significance of many of the control variables suggests that farmers deposited their savings where it was most beneficial for them to do so, not only out of religious attachment.

Table 1: Summary statistics for sample of 1,081 banks for 1919

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>growth</td>
<td>growth in savings deposits over year, %</td>
<td>24.66</td>
<td>44.66</td>
<td>-85.36</td>
<td>616.24</td>
</tr>
<tr>
<td>distown</td>
<td>distance to neighbour in same network, km</td>
<td>3.76</td>
<td>2.17</td>
<td>0.01</td>
<td>28.60</td>
</tr>
<tr>
<td>distother</td>
<td>distance to neighbour in another network, km</td>
<td>18.76</td>
<td>18.06</td>
<td>0.06</td>
<td>75.23</td>
</tr>
<tr>
<td>cathbank</td>
<td>dummy=1 if bank is Catholic</td>
<td>0.45</td>
<td>0.50</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>majbank</td>
<td>dummy=1 if bank of area’s majority religion</td>
<td>0.84</td>
<td>0.37</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>IR</td>
<td>interest rate paid out by clearinghouse, %</td>
<td>3.76</td>
<td>0.05</td>
<td>3.75</td>
<td>4</td>
</tr>
<tr>
<td>D/M</td>
<td>depositor to member ratio</td>
<td>1.18</td>
<td>0.91</td>
<td>0.08</td>
<td>12.23</td>
</tr>
<tr>
<td>d/l</td>
<td>total deposits to total loans ratio</td>
<td>12.89</td>
<td>82.56</td>
<td>0</td>
<td>1,994.64</td>
</tr>
<tr>
<td>accs</td>
<td>savings accounts, number</td>
<td>216.80</td>
<td>167.08</td>
<td>3</td>
<td>1,994.64</td>
</tr>
<tr>
<td>age</td>
<td>age of bank, years</td>
<td>10.43</td>
<td>5.36</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>percatholic</td>
<td>Catholics in bank’s area, %</td>
<td>47.91</td>
<td>40.51</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>percagri</td>
<td>agricultural land, %</td>
<td>43.80</td>
<td>24.94</td>
<td>1.80</td>
<td>93.83</td>
</tr>
<tr>
<td>percown</td>
<td>farms owner-occupied, %</td>
<td>49.05</td>
<td>18.09</td>
<td>11.15</td>
<td>98.85</td>
</tr>
</tbody>
</table>

Note: 60 (new) banks were eliminated from the original 1,141-bank sample after distances were calculated, as their deposit growth is incalculable.

Table 2: Cross-sectional OLS regressions of the percentage growth rate in savings over 1919

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model (1)</th>
<th>Model (2)</th>
<th>Model (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>(P-value)</td>
<td>Coefficient</td>
</tr>
<tr>
<td>constant</td>
<td>13.366</td>
<td>(0.023)</td>
<td>37.672</td>
</tr>
<tr>
<td>distown</td>
<td>1.492</td>
<td>(0.056)</td>
<td>1.988</td>
</tr>
<tr>
<td>distother</td>
<td>0.192</td>
<td>(0.014)</td>
<td>0.076</td>
</tr>
<tr>
<td>cathbank</td>
<td>-6.456</td>
<td>(0.018)</td>
<td>-6.496</td>
</tr>
<tr>
<td>majbank</td>
<td>5.912</td>
<td>(0.184)</td>
<td>2.809</td>
</tr>
<tr>
<td>IR</td>
<td>8.117</td>
<td>(0.705)</td>
<td>21.214</td>
</tr>
<tr>
<td>D/M</td>
<td>-3.888</td>
<td>(0.002)</td>
<td>-2.394</td>
</tr>
<tr>
<td>d/l</td>
<td>0.011</td>
<td>(0.228)</td>
<td>0.011</td>
</tr>
<tr>
<td>accs</td>
<td>-0.012</td>
<td>(0.033)</td>
<td>-0.004</td>
</tr>
<tr>
<td>age</td>
<td>-10.592</td>
<td>(0.000)</td>
<td>-11.262</td>
</tr>
<tr>
<td>age²</td>
<td>0.395</td>
<td>(0.000)</td>
<td>0.425</td>
</tr>
<tr>
<td>percatholic</td>
<td>-0.001</td>
<td>(0.984)</td>
<td>-0.001</td>
</tr>
<tr>
<td>percagri</td>
<td>0.123</td>
<td>(0.031)</td>
<td>0.047</td>
</tr>
<tr>
<td>percown</td>
<td>0.169</td>
<td>(0.031)</td>
<td>0.343</td>
</tr>
</tbody>
</table>

Note: P-values (in parentheses), obtained from Huber-White robust standard errors, are the probabilities of obtaining a result at least as extreme as the ones observed. Fixed effects correspond to 83 farming regions defined by Directie van den Landbouw (1920).
Liquidity, solvency and competition

Bank stability is difficult to measure and requires the combined use of financial ratios for liquidity and solvency. Liquidity describes banks’ short-term ability to meet withdrawal demand whilst solvency is their longer-term viability as going concerns. Maintaining a certain degree of liquidity is necessary to meet (unexpected) withdrawal demand from depositors. Without external intervention, illiquidity may lead to insolvency; with central bank (or other) lender-of-last-resort (LLR) provision, temporarily illiquid but otherwise solvent banks can be saved. But during a crisis, illiquidity and insolvency are hard to differentiate (Goodhart, 1999). And to complicate matters further, an illiquid (or less liquid) bank may be more solvent than a liquid one; a bank may be able to sustain its business with low levels of liquidity exactly because it enjoys LLR provision, or because of other institutional, economic or political factors.

Table 3: Summary statistics for sample of 1,128 banks for 1919

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LiqRat</td>
<td>most liquid assets to total assets, %</td>
<td>45.08</td>
<td>26.03</td>
<td>0</td>
<td>99.51</td>
</tr>
<tr>
<td>MatProf</td>
<td>callable loans to long-term loans</td>
<td>1,386.10</td>
<td>13,995.86</td>
<td>0</td>
<td>284,996</td>
</tr>
<tr>
<td>SolvRat</td>
<td>long-term assets to long-term liabilities, %</td>
<td>39.04</td>
<td>51.38</td>
<td>0</td>
<td>1,156.86</td>
</tr>
<tr>
<td>distown</td>
<td>distance to neighbour in same network, km</td>
<td>3.79</td>
<td>2.19</td>
<td>0</td>
<td>28.60</td>
</tr>
<tr>
<td>distcentral</td>
<td>distance to central clearinghouse, km</td>
<td>73.09</td>
<td>45.49</td>
<td>0.33</td>
<td>188.37</td>
</tr>
<tr>
<td>D/M</td>
<td>depositor to member ratio</td>
<td>1.77</td>
<td>0.92</td>
<td>0</td>
<td>12.23</td>
</tr>
<tr>
<td>accs</td>
<td>savings accounts, number</td>
<td>209.05</td>
<td>167.78</td>
<td>0</td>
<td>1,804</td>
</tr>
<tr>
<td>age</td>
<td>age of bank, years</td>
<td>10.01</td>
<td>5.62</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>perccath</td>
<td>Catholics in bank’s area, %</td>
<td>47.75</td>
<td>40.56</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>percagri</td>
<td>agricultural land, %</td>
<td>43.98</td>
<td>24.86</td>
<td>1.81</td>
<td>93.83</td>
</tr>
<tr>
<td>percown</td>
<td>farms owner-occupied, %</td>
<td>49.23</td>
<td>18.30</td>
<td>11.16</td>
<td>98.85</td>
</tr>
<tr>
<td>Eindhoven</td>
<td>dummy=1 if CCB-Eindhoven member</td>
<td>0.41</td>
<td>0.49</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Alkmaar</td>
<td>dummy=1 if CCCB-Alkmaar member</td>
<td>0.04</td>
<td>0.20</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Utrecht</td>
<td>dummy=1 if CCRB-Utrecht member</td>
<td>0.55</td>
<td>0.50</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: 13 banks were eliminated from the original 1,141-bank sample, as they took no deposits in 1919.

Table 4: Cross-sectional Tobit regressions of liquidity and solvency in 1919

<table>
<thead>
<tr>
<th>Variable</th>
<th>LiqRat Model (4)</th>
<th>MatProf Model (5)</th>
<th>SolvRat Model (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dy/dx</td>
<td>(P-value)</td>
<td>dy/dx (P-value)</td>
<td>dy/dx (P-value)</td>
</tr>
<tr>
<td>distown</td>
<td>1.326 (0.034)</td>
<td>-8.649 (0.961)</td>
<td>0.336 (0.695)</td>
</tr>
<tr>
<td>distown²</td>
<td>-0.075 (0.037)</td>
<td>-9.229 (0.438)</td>
<td>-0.004 (0.932)</td>
</tr>
<tr>
<td>discentral</td>
<td>-0.124 (0.009)</td>
<td>-17.545 (0.139)</td>
<td>0.036 (0.578)</td>
</tr>
<tr>
<td>D/M</td>
<td>4.666 (0.000)</td>
<td>193.042 (0.330)</td>
<td>-5.455 (0.000)</td>
</tr>
<tr>
<td>accs</td>
<td>-0.023 (0.000)</td>
<td>0.030 (0.980)</td>
<td>0.009 (0.185)</td>
</tr>
<tr>
<td>age</td>
<td>-0.070 (0.864)</td>
<td>-15.533 (0.877)</td>
<td>-0.104 (0.852)</td>
</tr>
<tr>
<td>age²</td>
<td>0.011 (0.565)</td>
<td>1.377 (0.762)</td>
<td>-0.004 (0.880)</td>
</tr>
<tr>
<td>perccath</td>
<td>-0.058 (0.106)</td>
<td>-3.739 (0.679)</td>
<td>0.083 (0.091)</td>
</tr>
<tr>
<td>percagri</td>
<td>0.537 (0.029)</td>
<td>42.690 (0.502)</td>
<td>-0.507 (0.131)</td>
</tr>
<tr>
<td>percown</td>
<td>-0.431 (0.044)</td>
<td>-24.956 (0.629)</td>
<td>0.232 (0.429)</td>
</tr>
<tr>
<td>Alkmaar</td>
<td>-21.161 (0.000)</td>
<td>-825.345 (0.525)</td>
<td>14.189 (0.084)</td>
</tr>
<tr>
<td>Utrecht</td>
<td>-8.721 (0.001)</td>
<td>-619.707 (0.360)</td>
<td>7.162 (0.051)</td>
</tr>
</tbody>
</table>

| fixed effects? | yes | yes | yes |
| n               | 1,128 | 1,128 | 1,128 |
| censored obs.   | 9 | 183 | 30 |
| McFadden-R²     | 0.043 | 0.016 | 0.026 |

Note: see Table 2.
The previous section argues that transaction costs proxied by distance are an indicator of interbank competition. Models (4), (5) and (6) attempt to explain liquidity and solvency with distance, the latter with two ratios as defined in Table 3; MatProf captures the maturity profile of banks’ investments, whilst SolvRat measures balance sheet ‘mismatches’. Censored Tobit regressions are used because the dependent variables are only observed at or above a cut-off point. The reported parameters in Table 4 are marginal effects, and can be read like OLS coefficients.

The combined quadratic effect of distown on LiqRat is depicted in Figure 1, and suggests that competition worsens banks’ liquidity, but only if (potential) savers still consider a bank located further away to be a real alternative, reminiscent of Hotelling’s (1929) linear city model. No competition effect is found on the two solvency ratios. Distance to a cooperative’s central clearinghouse proves an important determinant of LiqRat; banks maintain less liquid portfolios the more distant they are from their clearinghouse. Agency costs measure D/M and the network dummy variables are important determinants of SolvRat. Network membership may capture the fact that only two of the networks’ clearinghouses (CCB-Alkmaar and CCRB-Utrecht) enjoyed LLR access to the Dutch central bank.

**Figure 1: Combined effect of distown and distown^2 on LiqRat**

Note: dashed vertical line is at mean value (3.79km).

**Conclusion**

This paper finds that distance to the closest neighbouring bank belonging to the same network is an important determinant of the growth in farmers’ savings deposits, which in turn implies that banks competed with one another. It thus quantifies how rural religiosity did and did not affect farmers’ choice of bank. This result could not have been gleaned from SCP analysis because it is impossible to define these banks’ (geographic) market given the available data. This paper finds some limited evidence of a non-linear competition-stability relationship; the traditional view that competition improves stability holds up to a cut-off point for one measure of bank-level stability. However, the complex relationship between liquidity and
solveney means that this result may not explain the sector’s subsequent good overall performance during the Dutch financial crisis of the early 1920s.

References

Data sources
‘Mededeelingen betreffende de locale boerenleenbanken’, annexes to annual reports for 1919, Rabobank Nederland, Utrecht.
‘TOP250namen’, topographical coordinate database, Kadaster, Apeldoorn.

Secondary literature
Freixas, Xavier, and Jean-Charles Rochet (2008), Microeconomics of Banking, MIT Press, Cambridge MA.
Marching in the storms: the Chinese bond market 1918-42

Chun-Yu Ho, Georgia Institute of Technology, (chunyu.ho@econ.gatech.edu)
Dan Li, Fudan University, China, (danli1981@fudan.edu.cn)
Supervisor (Dan Li): Professor Robert A Margo

During the nineteenth century, China was ruled by the Manchus Qing. Their leadership could be described – politely – as increasingly ineffective as the century progressed. An early harbinger of decline was China’s humiliating defeat in the First Opium War (1839-42) which, among other things, illustrated the outdated state of the Chinese military.\(^{190}\) Internal weakness invited later invasions, which resulted in more defeat and humiliation.\(^{191}\) China’s government was forced to accept unequal treaties, including opening up ports, paying large amounts for reparations, ceding lands, and making various other concessions of sovereignty to foreign ‘spheres of influence’. Coupled with external disasters, domestic rebellions were rampant across the nation, further weakening an already shaky regime.\(^{192}\)

The bond history in China starts in parallel with the aforementioned turmoil. Unlike the crowns in UK or France who repetitively borrowed money from their people when facing financial difficulties, the idea of borrowing from the mass was unacceptable to Qing monarchies since they thought it would downgrade themselves from the ‘Son of the God’ to the debtor to the mass. Therefore, the bond could have never existed in China if the emperor was not forced to borrow during the most humiliating period for his dynasty.

The aim of our study is two-fold. First, we began by constructing a quantitative history of the Chinese financial market. We compiled weekly series of prices for a wide array of government bonds floated in domestic markets from Chinese newspapers and financial periodicals between 1918 (when the first stock exchange in China established in February 1918) and 1942 (as the second Sino-Japanese war continued, the trade became so thin that newspapers stopped reporting the prices). In addition, the weekly prices for five Chinese government bonds floated in the London market were also compiled with the start and end dates varying according to the date when a bond was issued, their maturity, and their data availability (in progress).

A very careful examination of bond history in this study reveals very interesting institutional phenomena in the public finance history for China. We find that government debt became a major source of public finance since the first Sino-Japanese war in 1894-95, which had never happened in China’s history. Dramatic regime change (the replacement of the Qing by the Republic of China in 1912) led to the default on the domestically issued government debt, but not external government debt. We argue since the costs of default on domestic bonds for Republic government were small at the time due to the limited circulation of bonds and the limited value of the bond holders to this brand-new government.\(^{193}\) In contrast, the default on external debt would cause serious consequences such as deteriorated credit reputation on international capital markets, which could block the way for foreign loans for the new

\(^{190}\) During the late eighteenth and early nineteenth centuries trade between Chinese and European merchants expanded, which caused hostility toward the west by the conservative Qing regime. Because of the unpopularity of European manufactured products in China and huge demand for Chinese goods such as silk, tea and ceramics in the European market, China experienced a substantial trade surplus. It is said that in order to help balance Britain’s huge trade deficit with China, the British introduced opium to China; by 1838, the British were selling 1,400 tons annually to China. In the same year, the Qing regime tried to ban the opium trade and the British declared war on China, leading to the Opium War.

\(^{191}\) These included the Second Opium War (1856-60), the Sino-French War (1884-5), the first Sino-Japanese War (1894-5) and the Intrusion of Eight Nation Alliance in 1901 (see Elleman, 2001 for details).

\(^{192}\) Among them, the most famous are the Taiping Rebellion (1851-64) and the Boxer Rebellion (1899-1901).

\(^{193}\) A large number of bond holders were Manchus, whose wealth was confiscated during the revolution. The rest were land owners, on whom the Republic government relied less. The Republic counted on capitalists, firm owners and bankers in cities for political and financial support.
government, who needed financial sources desperately. Moreover, the new-born government could not risk herself for triggering various forms of direct sanctions, especially, the military actions of foreign powers.

However, after the violent regime shift from the Beijing government to the Nationalist party in 1928 (hereafter, we call the new regime ‘Nanjing government’ because they chose Nanjing as the capital city), the new government honoured not only foreign debts but also the domestic bonds issued by the Beijing government. After about half a century’s open door to the western powers till the later 1920s, Chinese modern enterprises emerged as the momentum to economic growth. This rising class of capitalists, firm owners and bankers in major treaty port cities consisted of the majority of bond holders, on whom the Nationalist party relied for economic and political support. Hence, default on the previous government domestic bonds was too costly to afford.

The second goal is to, following the literature on looking for ‘turning points’ by examining time series price data for financial assets, undertake an endogenous structural break method (Qu & Perron, 2007) to search for the turning points in the weekly prices for the bonds and look for coincident events that are likely to have been responsible for them. Using this methodology, we hope to determine what events were viewed by contemporaries to be turning points in China’s modern history. Moreover, given the richness of our dataset, it allows us to gain insights on the perspectives of domestic and foreign investors towards the historical events (e.g. whether they viewed the same event differently [or similarly]; or the event stirred the domestic market did not affect the Chinese bonds in London at all) and on the reactions of the bond holders toward the domestic and international conflicts (e.g. Did the investors react more painfully toward the international conflicts than domestic conflicts, or the opposite? And what’s the magnitude of the impacts of the domestic and international events on the bond prices?).

Our preliminary results suggest it is highly likely that wars were responsible for the structural breaks in the bond prices. We find that the Northern Expedition led by the Nationalists against the incumbent government during 1926-8 was a significant event which likely caused the structural breaks in prices for many bonds. The diplomatic-military event between China and Japan in September 1931, namely the Mukden Incident (the northern three provinces fell into Japanese hands soon after this incident), was responsible for another structural drop. For example, figure 1 shows weekly highest and lowest prices for the Six Percent bond 1921-34. There are three endogenous structural breaks indentified, with the last two being caused by the aforementioned events.

In 1936, the Nanjing government conducted the so-called ‘bond consolidation’ to consolidate all domestic bonds into five series (Consolidated Bond Series A to E), which had a lower interest rate and an extended maturity. We find after the Marco Polo Bridge Incident on 11th July 1937 (the outbreak of the Second Sino-Japanese War), the Shanghai Stock Exchange was shut down for two weeks. When the Yunnan-Burma road was occupied, the prices for most bonds dropped by more than 38 per cent, which shows that investors were very pessimistic about the war. Figure 2 shows the prices for the Consolidated Bond Series A 1936-42.

---


195 We have controlled other possible factors, which might cause the fluctuations in bond prices (e.g. Interest rate, inflation rate during our studied period in China and England.), for the time series analysis of bond prices.
Chinese government bonds floated in the London market were denominated in pounds sterling. Therefore, their prices were not directly subject to exchange rate fluctuations. The breaks in the prices for these bonds could be caused by both Chinese events and British events. In order to disentangle the Chinese events’ impact on the Chinese bonds in London from that of British events, we apply the structural breaks test to the prices for British consol during the same period. If the breaks were unique to Chinese bonds, then it is safe to say that breaks identified for Chinese bonds were affected by the Chinese events, but not British or worldwide events. Otherwise, British consol would also have experienced the same breaks in price. Our results identified two common breaks for most Chinese funds in London, namely, during the periods of the Marco-Polo Bridge Incident in July 1937 and the Swatow Operation in June 1939.\textsuperscript{196} Figure 3 shows the prices for the Reorganization Bond in London 1931-41.

Through measuring the magnitude of the short-term prices fluctuations and long term trend, we find that domestic bearers viewed the Japanese military campaign as a much more serious threat to payment possibility than the civil conflicts did. For example, the price for

---

\textsuperscript{196} We cannot identify the reasons behind some breaks for the Chinese bonds in London. We are going to perform Key Word search on ‘China’ in the \textit{Economist} for approximately two weeks preceding and two weeks following the identified turning point as Grossman and Imai (2009) do for Japan.
Six-per cent Bond dropped by 19 per cent during the Northern Expedition in 1926, while the price decline is 30 per cent after the Mukden Incident in 1931 (Figure 1). These market reactions do not surprise us since investors could not expect that an alien government would treat them better if Japanese took their country than a domestic political party would.

Figure 3: Prices for Reorganization Bond in London Market 1931-41 (Unit: Pounds sterling)

Our analysis also suggests that turning points indentified for the domestically issued bonds sometimes did not affect the Chinese public bonds in London. Even though they sometimes did, their financial impacts differ in terms of the magnitude. For example, the Mukden Incident caused a structural break for domestic bonds, but it seems its impact on external bonds is negligible (e.g. See Figures 1 and 3). The Marco Polo Bridge Incident caused a structural break in both domestic and external bonds’ prices which caused a more dramatic drop in domestic bonds’ price than that for external bonds (about 49 per cent decrease in price for domestic bond prices after the market reopened two weeks later vs. about 38 per cent decrease for external bonds). On average, the London investors interpreted the outbreaks of the Sino-Japanese military campaign less seriously than their Chinese counterparts. Later, as the war continued, their beliefs converged.

By reading commentaries on the Mukden Incidence in Economists, we believe that Western people would have underestimated Japanese ambition over Chinese territory at the time. It explains why they did not take this event seriously. As the war continued, London investors realized the seriousness of the war situation in China and started to worry about the payment ability of Chinese government. However, since the collaterals of external bonds are more secured than those of domestic bonds, the relative decline in prices for them would be less than that for domestic bonds.

We further compare our indentified turning points to the accounts of traditional historians of China. Our findings agree with the traditional historians for some events, but also bring surprises. Especially, the Battle of Yunnan-Burma Road, which is not assigned a central role during the second Sino-Japanese by the traditional historians, is found to stir the financial market dramatically.

Our study’s principal contribution is to publish a large dataset consisting of weekly bond prices for a wide array of Chinese government bonds covering the 25-year period from around 1918 until 1942 (for some periods, the daily data are also available). At the same time, the high frequency of the observations permits relatively precise measurement of the financial
impact of particular events. To illuminate contemporary interpretations of market movements, we also analyse commentaries in the financial press and newspapers. This study enables us to gain a better and more precise understanding of the financial history during a very crucial phase in Chinese modern history.

References
The effects of regulatory reform on the strategies and performance of Dutch banks
Pooyan Ghazizadeh, Erasmus University
(pghazizadeh@rsm.nl)
Supervisors: Professors Abe de Jong & Gerarda K Westerhuis

Introduction
Banking has traditionally been an industry subject to many regulatory constraints. This is hardly surprising, given the pivotal role it plays in the operation of most economies. More specifically, by providing activities such as mobilizing savings, allocation of capital, overseeing the investment decisions of corporate managers and providing risk management vehicles, Levine (1999) has shown the efficacy of financial intermediation to affect economic growth. However, with the realization that these regulatory restrictions may lead to inefficiencies, whether it be in managing the banks or exploitation of the customers by the banks, several countries, amongst which The Netherlands, have in the last two decades implemented numerous reforms with the objective to stimulate competition and to enhance financial integration (Degryse et al, 2009). A prime example is the implementation of the Second Banking Coordination Directive (SBCD) in 1993, which allows banks from the European Union (EU) countries to branch freely into other EU countries. Subsequently, this enhanced freedom allows banks to expand the scope of their activities beyond their own national borders (i.e. diversify geographically), or equally expect their markets to be entered by foreign banks.

Numerous studies have investigated the effects of competition on the profitability of the banking industry, almost unanimously finding a negative relationship (Goddard et al, 2004). Furthermore, a lot of research has been conducted in order to discern the effects of different strategies on the performance of banks, mostly reporting few resultant benefits (Stiroh and Rumble, 2006). The latter is surprising for two reasons. Firstly, there is an enormous surge of banks diversification, typically as soon as allowed by regulation. Secondly, the (theoretical) literature provides a multitude of potential benefits of diversification.

Saliently however, to the best of our knowledge, no study has yet explicitly examined the joint effects of diversification and competition on bank performance. This would be warranted if, as is conjectured here, increased competition affects both the diversification strategy as well as the performance of banks. Given that many banks may have chosen a diversification strategy trying to either take advantage of the increased possibilities, or alternatively facing the prospect of increased market contestability, this study aims to fill a gap in the existing literature by combining the two abovementioned research strands. To this end, the present study investigates how diversification affects banks’ performance and whether these effects differ in varying competitive environments, i.e. the periods directly preceding and following the implementation of the SBCD. The latter will help to disentangle the aggregate findings typically measured in other studies and allow inference as to when diversification is most appropriate.

Background
A large body of literature has addressed the costs and benefits ensuing from diversification. Enumerated benefits are economies of scale and scope (Chandler, 1977), increased debt capacity and debt tax shields (Lewellen, 1971), overcoming market imperfections by the creation of internal capital markets and improved resource allocation (Williamson, 1975; Fluck and Lynch, 1999; Hubbard and Palia, 1999), increased cross-selling opportunities (Boot, 2003), gaining conglomerate power (e.g., cross-subsidization (Montgomery, 1994)), disseminating core competences among different business segments and geographic markets...
(Hamel, 1991), and strategic positioning (Boot, 2003). These benefits may fail to be realized when diversification is prompted by the wrong reasons or is poorly executed. The former entails agency driven actions such as empire building (Jensen, 1986) and herding behaviour (Hsieh and Vermeulen, 2009), whereas the latter points to for instance inefficient internal resource allocation (Scharfstein, 1998). Finally, diversification can bring about additional costs, such as increased coordination and governance costs (Capar and Kotabe, 2003) and increased incentives for rent-seeking (Scharfstein and Stein, 2000), potentially offsetting the benefits.

To gauge the net effect of diversification, a considerable body of empirical research has been conducted. Most early work, focusing on manufacturing firms, finds negative effects (Berger and Ofek, 1995). More recently, the validity of these findings has been questioned, as it is argued that the so-called diversification discount is driven by measurement problems (Whited, 2001) and selection bias (Fluck and Lynch, 1999). Following these studies, Stiroh and Rumble (2006) and Laeven and Levine (2007) have studied the effects of diversification in the banking industry. The former report that the diversification gains are more than offset by the costs of increased exposure to the more volatile activities, while the latter report evidence of a diversification discount. On the contrary, taking another approach, Akhavein et al. (1997) and Rossi et al. (2009) find that diversification increases the profit efficiency of banks. As such, the empirical evidence on the effects of diversification remains mixed.

A different strand of literature has focused on the effects of competition on bank performance. The results generally point to lower margins and higher volatility in returns (Goddard et al, 2004). Imperative to the stand taken in this study is the finding that increased competition has led banks to expand their activities beyond their traditional business segments and geographic markets (Boot, 2003; Goddard et al, 2004).

Given the indications that (anticipated) competition may be the impetus for companies to diversify, while competition also negatively affects the performance of banks, the aim of this study is to gauge the effects of diversification on bank performance, sufficiently controlling for competition in the industry. Since diversification can give rise to both costs and benefits, it is not possible to decisively predict the effects of diversification on bank performance. However, taking into account the effects of the environment in which the banks operate may provide a viable research opportunity. That is, our conjecture is that the disciplinary effect of competition will force managers to refrain from at least some of the ill-motivated moves, i.e., the agency driven activities. This will in turn allow distinguishing between the benefits and costs of diversification, as in competitive environments the diversification moves will be more well-intentioned. We conduct the abovementioned tests for a major institutional change in the 1990s, i.e., the SBCD implemented in 1993. As part of the larger goal of creating a unified economic area with a common market, this directive entails that an institution having obtained a banking licence in one of the EU member states, can subsequently operate freely in all the other member states, both through establishment of a local bank office and cross-border provision of banking services (Benink, 2000).

**Data and methods**

We have chosen to examine the Dutch banking sector, as besides being affected by the directive, the Netherlands traditionally has had a well-developed financial system, in combination with a relatively small home market. The period examined is the four years directly preceding and following the implementation of the SBCD (i.e., 1989-96). The sample consists of the Dutch commercial and cooperative banks that comprise the 95 per cent cumulative total of assets of the Dutch banking industry each of the sampling years, based on a list developed by the Dutch Central Bank (DNB, 2000). Foreign and government-owned banks are excluded from the sample. This selection process yields a total sample of 29 banks and 190 bank-year observations.
For the construction of the necessary variables, accounting data are used, taken from the annual reports of the banks considered. This allows both the inclusion of non-publicly traded and listed banks, as well as a good comparison with previous studies. In measuring the diversification strategies of the Dutch banks, we follow the basic Herfindahl-index approach used in, among others, Stiroh and Rumble (2006), in which

\[ Div_{GEO} = (SH_{DOM})^2 + (SH_{FOREIGN})^2 \]  

where \( Div_{GEO} \) measures the degree of geographic diversification in a bank’s net operating revenue, \( SH_{DOM} \) is defined as the share of the net operating revenue generated in the Netherlands, and \( SH_{FOREIGN} \) is defined as the share of the net operating revenue generated abroad. Per construction, a value of 1 indicates complete concentration, whereas a value of 0.5 indicates complete diversification. Similarly,

\[ Div_{PROD} = (SH_{NET})^2 + (SH_{NON})^2 \]  

where \( Div_{PROD} \) measures the degree of product diversification in a bank’s net operating revenue, \( SH_{NET} \) is defined as the net-interest share of net operating revenue, and \( SH_{NON} \) is defined as the non-interest share of the net operating.

Again following Stiroh and Rumble (2006), our performance measures are the risk-adjusted returns of the Dutch banks. More specifically, for each observation (bank-year) we have divided the profit ratio return on equity (ROE, net income divided by equity) by its standard deviation over the five preceding years. The same procedure is repeated for the profit ratio return of assets (ROA, net income divided by total assets). This yields the risk-adjusted return variables \( RaROE \) and \( RaROA \). The reason we deem risk-adjusted returns as the appropriate performance measures, as opposed to the simple returns, is that banks can enhance their returns by assuming more risk, albeit to the detriment of basically all stakeholders (i.e., regulators and supervisors, shareholders, borrowers, and even the banks’ managers).

In order to control for the level of competition, a dummy variable, \( d_{Post-1993} \), is included, which can be regarded as a time fixed effect, thus controlling for excluded variables that are constant across all banks but evolve over time.

Finally, as in Stiroh and Rumble (2006), the natural log of total assets, the rate of asset growth, the equity and loan ratio are included as control variables. The former two are included to control for any systematic differences in performance across size classes (e.g., scale economies), whereas the latter two are included to control for other risk factors affecting performance.

For the first test, aimed at discerning how diversification strategies affect banks’ performance while controlling for the level of competition, a simple OLS regression will be conducted. In the second test, set up to gauge any differences in the effects of diversification strategies in varying competitive environments, interaction terms comprised of each independent variable multiplied by the period dummy are included. The coefficient of these interaction terms, the so-called Difference-in-Differences estimator, will measure the changes in the risk-adjusted returns due to the environmental changes brought about by the SBCD (Degryse et al, 2009).

Results and discussion
Table 1 provides an overview of the variables of interest. As indicated by the high mean and median value of \( Div_{GEO} \), Dutch banks were mainly active domestically. It can also be seen however that they have significantly expanded their foreign operations following the SBCD. On the contrary, the Dutch banks were already quite diversified with respect to the different activities they undertook, and no significant changes can be noted following the regulatory reform. The risk-adjusted returns show significant improvements following the reform.
Table 1: Summary statistics and comparison of means

<table>
<thead>
<tr>
<th></th>
<th>Mean Pre-1993</th>
<th>Mean Post-1993</th>
<th>Diff. (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DivGEO</td>
<td>0.956</td>
<td>0.884</td>
<td>0.001</td>
</tr>
<tr>
<td>DivPRO</td>
<td>0.601</td>
<td>0.581</td>
<td>0.215</td>
</tr>
<tr>
<td>RaROE</td>
<td>6.490</td>
<td>9.691</td>
<td>0.007</td>
</tr>
<tr>
<td>RaROA</td>
<td>5.998</td>
<td>7.871</td>
<td>0.049</td>
</tr>
<tr>
<td>LnAssets</td>
<td>7.479</td>
<td>8.376</td>
<td>0.002</td>
</tr>
<tr>
<td>GrowthASSETS</td>
<td>0.083</td>
<td>0.164</td>
<td>0.009</td>
</tr>
<tr>
<td>EquityRatio</td>
<td>0.055</td>
<td>0.068</td>
<td>0.024</td>
</tr>
<tr>
<td>LoanRatio</td>
<td>0.797</td>
<td>0.759</td>
<td>0.004</td>
</tr>
</tbody>
</table>

Table 2 presents the results of the regressions, in which the performance measures are used as dependent variables. Turning to the results of Panel A, most notable is the general lack of significant effects of the diversification measures on the performance measures: only product diversification has a barely significant effect on RaROA, which is furthermore opposite to what is expected. The coefficients of the period dummy are not significantly different from zero. Although this is not as expected, one should take into consideration that the coefficient takes into account all time varying factors. That is, the improvement of the overall economy over the two periods should mitigate the (expected) negativity of the coefficient of the time dummy, thus biasing against finding the expected relations. Finally, taking a closer look at the regressions, we find that larger banks and higher equity ratios are associated with higher risk-adjusted return measures.

Whereas the regressions in Panel A were aimed at gauging the effects of diversification on the risk-adjusted performance of banks after sufficiently controlling for competition, we also set out to examine whether diversification strategies have different effects on the performance of banks in different competitive environments, allowing us to disentangle the aggregate findings. In Panel B of Table 2, the estimates of the coefficients of all independent variables and their interaction terms are reported. Confirming our conjecture, the results suggest that diversification strategies improve risk-adjusted performance in times of competition, whereas their effects in less competitive times are either mostly (insignificantly) negative. More specifically, whereas the effect of DivGEO and DivPRO are mainly negative (although insignificantly), the coefficients of their respective interaction terms are not only negative (entailing a positive effect), but also larger in magnitude. This means that DivPRO has a significantly positive effect on RoROE in a competitive environment. Similarly, the effect of DivGEO on RaROA alters from negative in calm environments to significantly positive in competitive ones. The coefficients of the period dummy do not confirm our conjectures, although as before this can be ascribed to the mitigating effect of the economic boom in the 1990s. It is finally noteworthy that besides the equity ratio, no other control variable has a differential effect on the risk-adjusted returns, suggesting that only the efficacy of the strategies of banks is affected by the regulatory reform.

These findings suggest that, as conjectured, in appraising the efficacy of a strategy one should take into account the conditions leading up to its implementation. Regarding the topical strategy of diversification, the results show that it is indeed possible to attain the proposed benefits, while also providing support for its misuse in relatively friendly environments. This finding supports and potentially adds to earlier work on the efficacy of internal capital markets (e.g., Fluck and Lynch, 1999; Hubbard and Palia, 1999) finding that conglomerate mergers were (appropriately) used to overcome external market imperfections, whereas divestitures followed when the financial constrains ceased to impair operations.
### Table 2: OLS and Diff-in-Diff Regressions of the Risk-adjusted Returns

#### Panel A: Total Period

<table>
<thead>
<tr>
<th></th>
<th>Coefficient (p-value)</th>
<th>Coefficient (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>5.007 (0.514)</td>
<td>-7.697 (0.211)</td>
</tr>
<tr>
<td>DivGEO</td>
<td>-4.179 (0.327)</td>
<td>-2.340 (0.492)</td>
</tr>
<tr>
<td>DivPRO</td>
<td>-8.189 (0.142)</td>
<td>7.680* (0.086)</td>
</tr>
<tr>
<td>LnAssets</td>
<td>1.830*** (0.000)</td>
<td>1.629*** (0.000)</td>
</tr>
<tr>
<td>GrowthASSETS</td>
<td>-2.113 (0.417)</td>
<td>-2.404 (0.249)</td>
</tr>
<tr>
<td>EquityRatio</td>
<td>60.024*** (0.001)</td>
<td>27.486** (0.049)</td>
</tr>
<tr>
<td>LoanRatio</td>
<td>-8.033 (0.211)</td>
<td>-2.719 (0.596)</td>
</tr>
<tr>
<td>dPost-1993</td>
<td>0.167 (0.894)</td>
<td>0.119 (0.906)</td>
</tr>
</tbody>
</table>

N 190  190  
Adj $R^2$ 0.185  0.184  
$F$ Model 0.000  0.000

#### Panel B: Diff-in-Diff

<table>
<thead>
<tr>
<th></th>
<th>Coefficient (p-value)</th>
<th>Coefficient (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>5.396 (0.690)</td>
<td>-16.818 (0.133)</td>
</tr>
<tr>
<td>DivGEO</td>
<td>-1.572 (0.844)</td>
<td>7.566 (0.252)</td>
</tr>
<tr>
<td>DivPRO</td>
<td>2.396 (0.729)</td>
<td>8.228 (0.151)</td>
</tr>
<tr>
<td>LnAssets</td>
<td>1.253** (0.023)</td>
<td>1.968*** (0.000)</td>
</tr>
<tr>
<td>GrowthASSETS</td>
<td>2.171 (0.645)</td>
<td>0.137 (0.972)</td>
</tr>
<tr>
<td>EquityRatio</td>
<td>-3.346 (0.910)</td>
<td>30.109 (0.219)</td>
</tr>
<tr>
<td>LoanRatio</td>
<td>-10.299 (0.261)</td>
<td>-7.193 (0.341)</td>
</tr>
<tr>
<td>dPost-1993</td>
<td>5.007 (0.762)</td>
<td>12.810 (0.348)</td>
</tr>
<tr>
<td>DivGEO*dPost-1993</td>
<td>-7.396 (0.437)</td>
<td>-15.556** (0.049)</td>
</tr>
<tr>
<td>DivPRO*dPost-1993</td>
<td>-31.781*** (0.006)</td>
<td>-5.051 (0.590)</td>
</tr>
<tr>
<td>LnAssets*dPost-1993</td>
<td>0.946 (0.203)</td>
<td>-0.579 (0.345)</td>
</tr>
<tr>
<td>GrowthASSETS*dPost-1993</td>
<td>-4.403 (0.432)</td>
<td>-3.099 (0.503)</td>
</tr>
<tr>
<td>EquityRatio*dPost-1993</td>
<td>105.476*** (0.004)</td>
<td>-2.733 (0.928)</td>
</tr>
<tr>
<td>LoanRatio*dPost-1993</td>
<td>9.356 (0.465)</td>
<td>12.580 (0.235)</td>
</tr>
</tbody>
</table>

N 190  190  
Adj $R^2$ 0.234  0.181  
$F$ Model 0.000  0.000

Note: *, **, and *** denote significance at the 1%, 5% and 10% level, respectively.

### Conclusion

In this paper we set out to gauge the effects of diversification strategies on the risk-adjusted returns of Dutch banks, taking into account the effects of the environment in which these decisions are made. Although our measure of competition does not quantitatively confirm our assertion of increased competition and its subsequent effect on the performance of Dutch banks, the results of our tests convincingly show that diversification strategies improve risk-adjusted performance in times of competition, whereas their effects in less competitive times are either mostly (insignificantly) negative. This entails that it is indeed possible to attain the proposed benefits, while also providing support for its misuse in relatively friendly environments.
References
Neutrality for self-benefit?
Spanish trade in the Second World War

Eric Golson, London School of Economics
(e.b.golson@lse.ac.uk)
Supervisor: Dr Peter Howlett

Spain’s economic and political position in the Second World War remains largely misunderstood. Long ridiculed for its close-political ties to the Axis powers, it is difficult to determine from the existing literature precisely what characterizes the Spanish economic position and hence, Spanish neutrality. This paper provides the first comprehensive presentation of Spanish-German trade statistics during the Second World War. It refutes the idea Germany controlled Spain and shows the Nationalist Spanish government used wartime competition for Spanish exports for self-benefit. Despite being nominally pro-fascist the Spanish government maintained economic relationships with both belligerent blocs during this period; it feigned political support for the Allies and stifled military support for the Axis powers to maximize the possible benefits to Spain, leaving both belligerent groups with trade as the only way to influence the Spanish government. Trade with Germany reflected this position with an import surplus and nominal price increases favourable to Spain.

Table I: Spain’s foreign trade by country group, 1939-45 (in millions of nominal pesetas)

<table>
<thead>
<tr>
<th>Imports from:</th>
<th>1939</th>
<th>1940</th>
<th>1941</th>
<th>1942</th>
<th>1943</th>
<th>1944</th>
<th>1945</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allies</td>
<td>473</td>
<td>769</td>
<td>691</td>
<td>692</td>
<td>1,137</td>
<td>1,024</td>
<td>1,261</td>
</tr>
<tr>
<td>Axis – Europe</td>
<td>52</td>
<td>324</td>
<td>749</td>
<td>977</td>
<td>1,551</td>
<td>1,105</td>
<td>55</td>
</tr>
<tr>
<td>Axis – Asia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Neutrals – Europe</td>
<td>38</td>
<td>111</td>
<td>137</td>
<td>231</td>
<td>326</td>
<td>375</td>
<td>275</td>
</tr>
<tr>
<td>Neutrals – Americas</td>
<td>36</td>
<td>54</td>
<td>217</td>
<td>228</td>
<td>139</td>
<td>227</td>
<td>244</td>
</tr>
<tr>
<td>Total</td>
<td>599</td>
<td>1,258</td>
<td>1,795</td>
<td>2,136</td>
<td>3,156</td>
<td>2,736</td>
<td>1,835</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exports to:</th>
<th>1939</th>
<th>1940</th>
<th>1941</th>
<th>1942</th>
<th>1943</th>
<th>1944</th>
<th>1945</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allies</td>
<td>308</td>
<td>430</td>
<td>385</td>
<td>725</td>
<td>1,163</td>
<td>1,139</td>
<td>1,320</td>
</tr>
<tr>
<td>Axis – Europe</td>
<td>17</td>
<td>307</td>
<td>955</td>
<td>1,151</td>
<td>1,601</td>
<td>817</td>
<td>112</td>
</tr>
<tr>
<td>Axis – Asia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Neutrals – Europe</td>
<td>6</td>
<td>41</td>
<td>88</td>
<td>167</td>
<td>348</td>
<td>348</td>
<td>288</td>
</tr>
<tr>
<td>Neutrals – Americas</td>
<td>10</td>
<td>23</td>
<td>33</td>
<td>48</td>
<td>88</td>
<td>115</td>
<td>167</td>
</tr>
<tr>
<td>Total</td>
<td>341</td>
<td>801</td>
<td>1,462</td>
<td>2,092</td>
<td>3,200</td>
<td>2,419</td>
<td>1,888</td>
</tr>
</tbody>
</table>

Sources: Banco de España (BdeE), IEME Estadística: Importación and Exportación, 1939-45; adjusted for under-reported wolfram exports, based on Leitz, Economic Relations Between 1945, p.172 and NARA RG84/UD3162/34, chart dated 20 March 1944.

Spanish wartime trade with Germany

Authors including Leitz, Catalán, García Pérez and Viñas assert Spain politically and economically favoured Germany throughout the Second World War.197 There can be no question the changes caused by the Spanish Civil War were transformational for Spanish foreign trade relations with Germany throughout the world war. From 1936-39, the German

---

197 Christian Leitz, Economic Relations Between Nazi Germany and Franco’s Spain, 1936-1945 (Oxford, 1996); Jordi Catalan, La Economic Española y la Segunda Guerra Mundial (Barcelona, 1995); Rafael García Pérez, Franquismo y Tercer Reich: Las relaciones económicas hispano-alemanas durante la segunda guerra mundial (Madrid, 1994); Angel Viñas, et al., Política comercial exterior en España (Madrid, 1979); and Angel Viñas, Guerra, dinero dictadura: Ayuda fascista y autarquía en la España de Franco (Barcelona, 1984).
government influenced the Nationalist Spanish government’s policies and acquired productive mineral assets for future exploitative reasons; these actions set the stage for long-term growth in trade relations. However, the statistics in this paper suggest the world war changed Germany’s relative position of power when compared to Spain. Unlike the current literature, this paper will argue this relationship was not based on political alignment. By feigning political support for the Allies and stifling military support for the Germans, Spanish dictator Francisco Franco ensured Spain remained in the front lines of the economic war and was able to maximize the advantages to Spain.

As seen in table I, while overall exports grew nearly ten-fold to 3,200 million Pesetas from 1939-1943, total German-Spanish figures increased 50 times over the same period. Most authors have implied this increase was due to Germany’s desire for Spanish wolfram (tungsten), a lightweight metal used to strengthen armour and shells. However, Spanish trade was considerably broader than the wolfram story these authors focus on. The Spanish government exported foodstuffs and a variety of minerals; in return it received machinery and war material, amongst other things. The new statistics demonstrate the Spanish government retained control over its trade and extracted substantial concessions from the belligerents for access to Spanish markets.

Table II: Spain’s trade with Germany (does not include German controlled Europe), 1939-45 in nominal and real terms (millions of pesetas as indicated)

<table>
<thead>
<tr>
<th></th>
<th>1939</th>
<th>1940</th>
<th>1941</th>
<th>1942</th>
<th>1943</th>
<th>1944</th>
<th>1945</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Imports (from Germany):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goods Imported – Nominal</td>
<td>20.1</td>
<td>91.3</td>
<td>457</td>
<td>705</td>
<td>1,366</td>
<td>1,036</td>
<td>53</td>
</tr>
<tr>
<td>Goods Imported – Nominal, 1939=100</td>
<td>100</td>
<td>453</td>
<td>2,269</td>
<td>3,504</td>
<td>6,785</td>
<td>5,147</td>
<td>264</td>
</tr>
<tr>
<td>Goods Imported – Real, 1939 Prices</td>
<td>20.1</td>
<td>70.5</td>
<td>578</td>
<td>611</td>
<td>Insufficient Data Available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goods Imported – Real, 1939=100</td>
<td>100</td>
<td>350</td>
<td>2,871</td>
<td>3,036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exports (to Germany):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goods Exported – Nominal</td>
<td>6.45</td>
<td>91.7</td>
<td>624</td>
<td>770</td>
<td>1,180</td>
<td>681</td>
<td>37</td>
</tr>
<tr>
<td>Goods Exported – Nominal, 1939=100</td>
<td>100</td>
<td>1,422</td>
<td>9,673</td>
<td>11,941</td>
<td>18,292</td>
<td>10,552</td>
<td>579</td>
</tr>
<tr>
<td>Goods Exported – Real, 1939 Prices</td>
<td>6.45</td>
<td>86.5</td>
<td>504</td>
<td>496</td>
<td>657</td>
<td>409</td>
<td>No Data</td>
</tr>
<tr>
<td>Goods Exported – Real, 1939=100</td>
<td>100</td>
<td>1,342</td>
<td>7,813</td>
<td>7,693</td>
<td>10,185</td>
<td>6,341</td>
<td></td>
</tr>
</tbody>
</table>

Sources: See table I and footnote 3.

There is no question Spanish-German trade increased during the war. As seen in table II, nominal German-Spanish trade was above 1939 levels for the entire war; this suggests German prewar activities were successful in increasing the volume of trade. The increase was large: in 1943, nominal Spanish exports to Germany topped 1.18 billion Pesetas or 182 times their 1939 levels.

However, the value of Spanish exports was eroded by inflation. Nominal exports mask the effects of large-scale price increases. It is possible to build a price index on a trade

198 National Archives and Records Administration (NARA) RG242/T-83/229/894, IG Farben Report entitled Spaniens Wirtschaftskräfte 1939; Bundesarchiv Koblenz (BA-K), R7/738, 15 March 1940; BA-K R121/842 report marked Entwicklung.
weighted, aggregate basis based on information available from Spanish, German and American sources; this price index uses 1939 as the base year. When adjustments are made to bring prices into real terms, 1942 Spanish exports to Germany are reduced to 496 million real 1939 Pesetas. By comparison, imports drop from a nominal figure of 705 million Pesetas to 611 million Pesetas; thus the trade gap widens from a nominal figure of 65 million nominal Pesetas to 115 million in real 1939 Pesetas. This suggests the Spaniards obtained particularly favourable terms of trade from Germany. The real trade gap in favour of Spain was only likely to have increased in August 1944 due to Allied-Axis economic rivalry; however, no comparative statistics are available for imports in 1943-4.

Total nominal Spanish exports to Germany from 1939-45 amounted to 3.39 billion nominal Pesetas; total trade flows from Spain to Germany were 3.73 billion Pesetas. This results in a balance of trade of 339 million Pesetas or about nine per cent in favour of Germany; this deficit was equivalent to a rather small 0.84 per cent of Spanish 1939 GDP. From the existing literature a nominal trade gap in favour of Germany is not at all apparent. Thus, while the statistics support the idea Germany succeeded in increasing trade, the deficit and the widening differences in nominal versus real prices refute the suggestions in the current literature that Germany was somehow able to exploit Spain.

Composition of imports and exports

The composition of exports and imports shows a changing relationship in favour of Spain. Germany did not become the sole supplier of goods to Spain, but it did provide virtually all of Spain’s machinery capacity and arms imports during this period. These came at the expense of the German war effort. Over the duration of the war, machinery made up more than 23 per cent of overall German imports. As the war went on and Germany became more desperate to maintain access to the Spanish market, it permitted exports of war material previously denied to Spain. As suggested in table III, arms and war materiel in 1943 and 1944 made up as much as a third of imports after being nil in the four years prior. There is a clear opportunity cost issue as Germany could have used these arms in its war effort instead of providing them to Spain; similar Spanish requests for these military goods had previously been denied in 1941 on the basis Germany only provided these goods to their allies. The German provision of these goods indicates the Spanish had particularly acute bargaining power in 1943-4.
Table III: *Value of certain goods in Spain’s imports from Germany 1939-44 as a percentage of total import value*

<table>
<thead>
<tr>
<th>Year</th>
<th>Minerals</th>
<th>Metals</th>
<th>Machinery</th>
<th>Arms</th>
<th>Chemicals</th>
<th>Food</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939</td>
<td>1.8%</td>
<td>2.7%</td>
<td>11.8%</td>
<td>0%</td>
<td>5.6%</td>
<td>32.3%</td>
</tr>
<tr>
<td>1940</td>
<td>1.0%</td>
<td>1.8%</td>
<td>35.3%</td>
<td>0%</td>
<td>30.6%</td>
<td>8.9%</td>
</tr>
<tr>
<td>1941</td>
<td>2.0%</td>
<td>6.7%</td>
<td>48.3%</td>
<td>0%</td>
<td>16.7%</td>
<td>4.0%</td>
</tr>
<tr>
<td>1942</td>
<td>2.3%</td>
<td>5.9%</td>
<td>28.4%</td>
<td>0%</td>
<td>17.4%</td>
<td>4.5%</td>
</tr>
<tr>
<td>1943</td>
<td>1.5%</td>
<td>2.0%</td>
<td>16.8%</td>
<td>33.4%</td>
<td>7.9%</td>
<td>2.7%</td>
</tr>
<tr>
<td>1944</td>
<td>1.0%</td>
<td>0.8%</td>
<td>17.0%</td>
<td>17.0%</td>
<td>7.2%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

Sources: See table I.

Note: Does not add to 100% as certain categories not shown.

From the existing literature wolfram, mercury and mica are seen as the major exports from Spain to Germany; however, minerals and metals were only part of the Spanish exports to Germany. As shown in table IV, the most consistent exports were food products, which made up 58 per cent of all Spanish exports to Germany in 1942 and minerals, which increased from eight per cent in 1940 to 44 per cent in 1944. Animal skins, wood and textiles were exported in large quantities at particular points. Spanish exports witnessed significant price increases as a result of the Allied pre-emptive purchasing operations; continued German buying amidst these price increases underscores the importance of these materials to the German war effort.

Table IV: *Value of certain goods in Spain’s exports to Germany 1939-44 as a percentage of total export value*

<table>
<thead>
<tr>
<th>Year</th>
<th>Minerals</th>
<th>Wood</th>
<th>Animals (Skins)</th>
<th>Metals</th>
<th>Textiles</th>
<th>Foodstuffs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939</td>
<td>0%</td>
<td>88.4%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0.1%</td>
</tr>
<tr>
<td>1940</td>
<td>8.5%</td>
<td>0.1%</td>
<td>12.5%</td>
<td>28.0%</td>
<td>6.9%</td>
<td>29.5%</td>
</tr>
<tr>
<td>1941</td>
<td>4.7%</td>
<td>4.9%</td>
<td>5.1%</td>
<td>7.4%</td>
<td>12.4%</td>
<td>58.3%</td>
</tr>
<tr>
<td>1942</td>
<td>8.0%</td>
<td>5.1%</td>
<td>3.9%</td>
<td>8.4%</td>
<td>1.8%</td>
<td>45.5%</td>
</tr>
<tr>
<td>1943</td>
<td>33.4%</td>
<td>4.1%</td>
<td>2.3%</td>
<td>2.4%</td>
<td>3.3%</td>
<td>44.5%</td>
</tr>
<tr>
<td>1944</td>
<td>44.4%</td>
<td>5.2%</td>
<td>8.7%</td>
<td>0.3%</td>
<td>9.4%</td>
<td>19.6%</td>
</tr>
</tbody>
</table>

Sources: See table I.

Note: Does not add to 100% as certain categories not shown.

**Price movements in Spanish-German trade**

Price statistics suggest the Spaniards were in a position of power relative to the Germans from 1941 until at least 1943, if not later. Unlike other neutrals, the Spanish government was able to extract significant price concessions from the Germans for goods sent to Spain while charging the Germans more for their Spanish exports. As seen in tables V and VI, the largest price increases against Spain were recorded in the 1940 period, when Germany came to dominate European resources. Overall costs of Spanish imports from Germany rose 29 per cent over 1939 levels while the cost of Spanish exports rose only six per cent during the same period. This was the largest price increase in favour of Germany, and marks the peak of Germany’s relative power.

---


207 NARA RG234/16/19.
New Researchers - Session I / E

Table V: Price movements in Spanish imports from Germany (1939=100)

<table>
<thead>
<tr>
<th>Year</th>
<th>Minerals</th>
<th>Metals</th>
<th>Machinery</th>
<th>Chemicals</th>
<th>Animal Prod.</th>
<th>Total (Weighted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1940</td>
<td>145</td>
<td>65</td>
<td>113</td>
<td>201</td>
<td>156</td>
<td>129</td>
</tr>
<tr>
<td>1941</td>
<td>276</td>
<td>66</td>
<td>58</td>
<td>319</td>
<td>181</td>
<td>79</td>
</tr>
<tr>
<td>1942</td>
<td>279</td>
<td>103</td>
<td>74</td>
<td>289</td>
<td>214</td>
<td>115</td>
</tr>
<tr>
<td>1943</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1944</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: See table I.

If Spain followed other neutrals, the trend of increasing prices should have continued as Germany controlled virtually all European resources. However, in late 1940, the Germans agreed to provide Spain with manufacturers and machinery for Spain’s entry into the war; this trade was completed at notably reduced prices. By 1942, the price index for Spanish imports from Germany rose only to an index value of 115, held back due to price reductions in machinery and processed metals. Meanwhile the price index for exports rose to an index value of 155 as the Spanish imposed price increases for metals, foodstuffs, wood, animal skins and other materials on the Germans. This is the complete opposite of other neutral cases where German domination led to stagnant export prices and increasing import prices. For example, in 1944 Sweden, import prices had an index value of 201, and exports an index value of 112 (1939=100) giving Germany a 90 per cent price advantage. This difference from other neutral cases suggests Spain held significant bargaining power given its basket of exports.

Table VI: Price movements in Spanish exports to Germany (1939=100)

<table>
<thead>
<tr>
<th>Year</th>
<th>Minerals</th>
<th>Wood</th>
<th>Animals (Skins)</th>
<th>Metals (1940=100)</th>
<th>Textiles</th>
<th>Foodstuffs</th>
<th>Total (Weighted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1940</td>
<td>85</td>
<td>90</td>
<td>71</td>
<td>207</td>
<td>100</td>
<td>98</td>
<td>106</td>
</tr>
<tr>
<td>1941</td>
<td>107</td>
<td>196</td>
<td>94</td>
<td>119</td>
<td>121</td>
<td>125</td>
<td>124</td>
</tr>
<tr>
<td>1942</td>
<td>125</td>
<td>337</td>
<td>272</td>
<td>80</td>
<td>155</td>
<td>171</td>
<td>155</td>
</tr>
<tr>
<td>1943</td>
<td>147</td>
<td>177</td>
<td>300</td>
<td></td>
<td>200</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>1944</td>
<td>129</td>
<td>166</td>
<td>247</td>
<td></td>
<td>223</td>
<td>166</td>
<td></td>
</tr>
</tbody>
</table>

Sources: See table I.

Price index figures for Spanish exports are available through 1944. Due to increased competition because of the Allied pre-emptive purchasing programme, the cost of animal skins rose to an index value of 300 and foodstuffs to 200 (where base year of 1939=100); by comparison the much talked about Spanish mineral exports mentioned so frequently in the current literature only rose to a maximum index value of 147. The total weighted index peaked at rose to 180 for 1943.

The large price differential suggests Spain controlled the trade relationship despite being in an incredibly weak position given German control of the continent. The initial strength of the German position in 1940 led to the immediate benefit of increased trade at more favourable prices for the Germans; however, this economic power was lost as the 208 ADAP D/XI.2/414/606, Ambassador in Spain to the Foreign Ministry (Berlin), 28 November 1940; and ADAP D/XI.2/420/617, Ambassador in Spain to the Foreign Ministry, 29 November 1940; ADAP D/XI.2/448/653, Ambassador in Spain to the Foreign Ministry, 4 December 1940. 209 Eric Golson, Swedish-Belligerent Trade in the Second World War (forthcoming, 2010).
German government tried convince the Spaniards to join the war effort. The Germans discounted their exports to Spain; and these relative discounts persisted as demand for Spanish goods increased.

**Conclusions**

From the statistics presented herein, there can be no question the Spanish government used competition between the belligerents to further Spanish economic and political goals. Germany attempted to draw Spain into the war using economic bribery; the Germans supplied goods to Spain at significantly discounted rates despite the considerable need for these goods in Germany. Rather than join the Axis war effort, the Spanish government feigned these German advances and engendered competition amongst the Axis and Allies. This policy led to a windfall of benefits for Spain, including increased export prices and access to goods the Spanish would not have otherwise been able to obtain. Thus, the Spanish government used the Axis and Allied countries wartime competition to their advantage, deriving significant self-benefit from their continued neutrality.
Borders, market access and urban growth: Saxon towns and the Zollverein

Florian Ploeckl, University of Oxford
(florian.ploeckl@economics.ox.ac.uk)
Supervisor: Professor Timothy W Guinnane

‘The German Zollverein was the pioneer and by far the most important customs union, and generalizations about the origin, nature and consequences of unification of tariffs tend to be based mainly or wholly on the German experience’. (Viner 1950)

In the aftermath of the Napoleonic wars the Congress of Vienna reordered the German political landscape, drawing new borders around a number of states. Huge war debts also led to a resurgence of tariff barriers between and within states. Yet at the end of the nineteenth century Germany was a unified market without internal trade barriers. The institutional centrepiece leading to this unification was a customs union between the states, formed in 1834. It was named the Zollverein. (Henderson 1984)

This union lifted tariff barriers between, as well as within, its member states, harmonized weights, measurements, currencies, even selected taxes, (Hahn 1982). Trade institutions like the Zollverein and their related institutional changes influence growth processes. One central mechanism is their effect on market access. The lifting of trade barriers increases the market size for producers and improves the access for foreign competitors to the domestic market.210 The extent of accessible markets not only influences growth but is also an important factor influencing the spatial variation in economic activity.

I utilize the entry of the German state of Saxony into the Zollverein in 1834 to address the question how important this institutional change was for regional economic activity. I use urban population growth as a proxy for economic growth. Various authors within the trade and the new economic geography literature have linked general economic growth with urban growth.211 The vast literature on urban growth itself covers a wide range of factors influencing such population growth, including the notions of agglomeration and market size. (Davis and Weinstein 2002) The institutional change by the Zollverein allows the identification of the impact of market size through causing a distinct and discrete change for Saxon towns. The geographic distribution of urban locations within the state allows me to focus on the regional differentiation of this impact, identifying the local impact of a state-wide institutional change.

210 Shiue 2005 uses grain prices to show that the Zollverein increased the integration between markets within Germany.

The regional distribution of economic activity is the central question in the new economic geography literature. The predictions about the impact of the Zollverein, which I test empirically, are therefore based on a recently developed economic geography model (Redding and Sturm 2008). The model explicitly links location population size, market access and location fundamentals. This linkage is based on agglomeration as well as dispersion forces. Agglomeration is caused by a home market effect, i.e. a larger town represents a larger market and therefore attracts migrants, and a cost of living effect, i.e. a larger market brings leads to more, and therefore cheaper, varieties available to consumers. Dispersion forces are a competition effect, a larger market leads to more competitors, and a congestion effect for a fixed supply of an amenity. The formal equilibrium has the location size, \( L_c \), determined by market access for local producers, \( FMA_c \), and the supply from producers in other locations, \( CMA_c \), as well as an amenity, \( H_c \), representing location fundamentals. The following equation, resulting from the model, shows that changes in population (\( L_x \) to \( L_y \)) are therefore determined by changes in at least one of the three factors.

\[
\log\left( \frac{L_y}{L_x} \right) = \frac{\mu}{\sigma(1-\mu)} \log\left( \frac{FMA_c}{FMA_c} \right) + \frac{n}{(1-\mu)(\sigma-1)} \log\left( \frac{CMA_c}{CMA_c} \right) + \log\left( \frac{H_x}{H_c} \right)
\]

\( \mu \) and \( \sigma \) are model parameter, such that the coefficients are positive.\(^{212}\)

The necessary data to estimate any prediction derived from this model requires data about location size, market access and location fundamentals. The analysis makes therefore use of a newly collected panel dataset containing the urban population of all 140 Saxon Towns during the nineteenth century. The set is complemented with data of approximately 3400 Saxon villages, which covers the complete rural population. The data therefore cover all settlements and the complete population in Saxony at the time of the Zollverein. These data on population are based predominantly on historical publications of statistical offices, which are complemented by contemporary statistical observations of private individuals. Furthermore the set also contains a cross-section of the population of more than three hundred towns in neighbouring regions in Prussia, Thuringia, Bavaria and Bohemia around the time of the Zollverein.

The model implies that location fundamentals can influence growth, the dataset therefore contains a range of town characteristics as control mechanism. These variables are classified in two major categories, namely institutional and geographical factors. Institutional factors include human capital variables, for example the number of schools, students and teachers, the presence of higher education institutions or the existence of newspapers. Infrastructure institutions include the opening years for railroads and post offices, additionally the existence of trade fairs as well as the housing stock are included. Geographic factors measure a town’s location elevation, ruggedness, temperature and rain. Proximity to flowing water and river shipping is included as well as the distance to nearest active coal mines. Furthermore the quality of a location with regard to farm and pasture purposes is included. Certain parts of the analysis also make use of demographic variables, for example age structure, birth and death rates and marriage status. These data are based on information from secondary literature about Saxon towns, archival records, especially historical maps, as well as more recent public and statistical information. These recent data include primarily geographic information, like elevation patterns, which undergo little to no change over time. While all of the geographical variables are cross-sections due to their static nature, some of the institutional variables are so as well, measured at the time of Saxony’s entry into the Zollverein.

\(^{212}\) The model obviously also makes prediction about town size linked to market access and location fundamentals. I test that linkage empirically in Ploeckl (2009).
The central prediction states that the opening of new markets through the Zollverein led to a higher growth for towns, the size of the effect dependent on the change in market access. The baseline specification utilizes a difference-in-difference setup to test this effect. The use of this approach provides a robust test of the prediction, focusing on a discrete change in the spatial growth pattern.\textsuperscript{213} This assumes that a certain group of towns were affected by the change in market access caused by the Zollverein, while others were not. The selection of these affected towns is based on their relative geographic positions, towns close to the liberalized border are assumed to be affected, while those further afar were not. Furthermore, the difference in liberalization between Saxony and its various neighbours, Prussia, Thuringia and Bohemia,\textsuperscript{214} allows a more precise identification of the effect of the Zollverein in each case. This leads to the following specification:

\[ \text{Growth}_t = \sum \beta_i (\text{Border}_t * \text{PreZollverein}_t) + \sum \gamma_i (\text{Border}_t * \text{Zollverein}_t) + \delta_t + \mu_r + \epsilon_t \]

(2)

The following table shows the results, which support the described prediction. The four columns show the results for the estimation including location controls, as well as without it. Furthermore, the results are shown for the use of plain distance as well as cost distance, which will be explained in more detail later on. The coefficients show the difference in annualized population growth between the treatment group close to the respective borders and centrally located towns.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
\textbf{Specification} & \textbf{Baseline} & \textbf{Baseline} & \textbf{Controls} & \textbf{Controls} \\
\textbf{Distance Measure} & \textbf{Cost} & \textbf{Cost} & \textbf{Plain} & \textbf{Plain} \\
\hline
Thuringia Pre-Zollverein & -0.213 & -0.359 & -0.134 & -0.233 \\
 & (0.269) & (0.321) & (0.284) & (0.352) \\
Thuringia Zollverein & 0.725*** & 0.844*** & 0.73*** & 0.76*** \\
 & (0.234) & (0.258) & (0.256) & (0.290) \\
Bohemia Pre-Zollverein & -0.0744 & 0.210 & 0.333 & 0.782* \\
 & (0.225) & (0.309) & (0.232) & (0.435) \\
Bohemia Zollverein & -0.359** & -0.0914 & -0.0693 & 0.284 \\
 & (0.148) & (0.207) & (0.118) & (0.188) \\
Prussia Pre-Zollverein & 0.498** & 0.912*** & 0.5* & 0.538 \\
 & (0.213) & (0.305) & (0.254) & (0.433) \\
Prussia Zollverein & -0.0551 & 0.0155 & 0.069 & 0.233 \\
 & (0.171) & (0.243) & (0.188) & (0.244) \\
\hline
Time Controls & Yes & Yes & Yes & Yes \\
Regional Controls & Yes & Yes & Yes & Yes \\
Location Controls & No & Yes & No & Yes \\
Observations & 280 & 280 & 280 & 280 \\
R-squared & 0.688 & 0.67 & 0.685 & 0.67 \\
\hline
\end{tabular}
\caption{Difference-in-Difference Results}
\end{table}

Significance Stars: *** significant at 1% level, ** significant at 5% level, * significant at 10% level

The opening of the border with Thuringia led to strong positive growth in the vicinity of the border. However, towns close to the Bohemian border, which did not get liberalized, do not see such an effect. Although the results for towns close to the Prussian border, high

\textsuperscript{213} Robustness tests, which involve specifications based on a continuous market access measures, confirm the results of the difference-in-difference setup.

\textsuperscript{214} See map 1 for political borders between Saxony and its neighbour states.
differential growth before and no difference after the Zollverein entry, seem to be contradicting the prediction, I show that the expected effect actually existed but was masked by the impact of the 1815 annexation of northern Saxony, which newly imposed the border Saxony and Prussia. In an extension I demonstrate that the described effects lasted for about three decades following Saxony’s entry into the Zollverein.

The model also implies an indirect spatial effect. If two towns experience a common increase in market access, for example through a trade liberalization through the Zollverein, then the direct effect is reinforced through the additional growth of the other town, caused by its direct increase in market access. The existence of this indirect effect is demonstrated using a Spatial regression specification (Anselin 1988), which shows that a town’s growth rate in the wake of the Zollverein depends on the growth in proximate markets, while it shows no significant effect during the time prior to the Zollverein.

Another related question is the mechanism leading to differential growth. There are two possibilities; the change in market access can affect migration as well as natural increase.215 Using data on the sources of growth, which are available for the period from 1834 to 1852, I calculate urban growth due to each of the two factors. I apply a Seemingly Unrelated Regression216 approach to determine what factors explain each of the two growth rates. The results indicate that the size of market access has an effect on both mechanisms, though it is much stronger for migration than natural increase. Together the impact on the growth rate is sufficiently large to explain the complete increase in urbanization217 in Saxony between 1834 and 1852.

Besides the question of the impact of the Zollverein this paper also analyses a methodological question. The trade and new economic geography literature usually assumes that the economic relationship between spatially distinct locations is a function of the physical distance between them. This fails to take into account factors which influence this relationship, like geography and infrastructure. Using Geographic Information Systems (GIS) I create a new distance measure, which incorporates such information, and demonstrate how this affects the estimation.

The new measure uses a raster-based approach; the complete area is split into a grid of small cells218 each of which contains information about the geography and infrastructure in that particular location. This information is based on the historical road network, derived through digitalization of historical maps, as well as elevation and the Saxon river network. This information is transformed into a transport cost for each cell,219 a least cost path algorithm then utilizes this cost to select the least costly path between any two urban locations. The total cost of this path is then taken as the new ‘cost distance’ between two towns.

The discrete nature of these cost factors, for example mountains, and the optimization through the path selection algorithm imply that the new distance measure has more of an impact on local and regional effects than long-distance relationships. An example for this impact can be seen in the above described treatment groups, which contain different sets of towns220 This difference can be used in a statistical test to see whether the new distance measure is an improvement over plain distance. To do so I estimate this specification:

---

215 Natural increase is the difference between the number of births and deaths.
216 The demographic variables provide the necessary identification.
217 The increase is from about 30% to 32%.
218 In my case the extent of such a cell is approximately 100m x 100m.
219 This is done using relative historic transport costs.
220 See map 2 and 3 for the different treatment groups based on the two different distance measures.
\[ \text{Growth}_t = \sum_l \beta_{pl} \text{Plain}_l \times \text{PreZV}_l + \sum_l \beta_{dl} (\text{Cost}_l - \text{Plain}_l) \times \text{PreZV}_l + \]
\[\sum_l \gamma_{pl} \text{Plain}_l \times \text{ZV}_l + \sum_l \gamma_l (\text{Cost}_l - \text{Plain}_l) \times \text{ZV}_l + \sum_k \lambda_k H_k \times \text{ZV}_l + \delta_l + \mu_r + \epsilon_t \]

where \((\text{Cost}_l - \text{Plain}_l)\) represents the difference between the treatment groups. The difference between the coefficients on the plain treatment group \((\beta)\) and the difference group \((\gamma)\) then show which of the two selection methods is better. Statistical testing shows that the coefficients are essentially identical, which implies that towns in the difference group show the same impact as towns in the plain treatment group. This demonstrates that the costs distance measure selects towns more precisely than the plain distance measure.

This paper demonstrates the regional impact of the Zollverein. Its trade liberalization opened new markets especially for towns close to the borders, these places were therefore able to exploit new economies of scale and exhibit stronger population growth. This effect showed persistence over time, incorporated an indirect spatial effect and was dependent on the size of the affected town. The source of differential urban population growth was predominantly migration, though there was a substantial demographic reaction as well. The Zollverein was not only an important factor in creating a unified German market, it also had a substantial impact on growth. As this paper demonstrates, regional growth patterns within the member states were significantly influenced by the changes in market access caused through the trade liberalization of this customs union. Furthermore I show that geography plays an important role in determining trade costs in local and regional settings. This implies that geography influences market access, and shaped therefore the impact of the Zollverein.

References


---

221 It is 1 for a town, which is selected through the cost distance but not the plain distance, and -1 for a town not selected by the costs distance but picked through the plain.


Ploeckl, Florian. ‘The Size of Towns, Saxony, ca 1834’, mimeo, University of Oxford


Understanding why airships lost the sky to aeroplanes

Helmut Braun, University of Regensburg (helmut.braun1@gmx.de)
Klaus Burgmeier, WHU – Otto Beisheim School of Management (klaus.burgmeier@whu.edu)

Outline of the problem
After the German rigid airship LZ 129 Hindenburg exploded over the US Airship Base Lakehurst, New Jersey, on 6 May 1937, the sole operating commercial airship transportation service was abandoned entirely (Bauer & Duggan, 1999; de Syon, 2002). Yet, the question remains whether this accident was only the end of a long enduring process of a failed innovation.

Usually, the economic theory of the struggle between competing technologies and net effects is a useful tool to analyse this question. For this purpose, we had to reconstruct any appreciable attempt to build a net or network indicated by an establishing of operating bases and service routes aimed at connecting the United States, Germany, and other countries, allowing for intercontinental travelling by airships or aeroplanes.

In spite of the fact that in economic theory the terms ‘net’ and ‘network’ are used interchangeably, we differentiate between these two terms: the term ‘net’ indicates a kind of physical facility such as airports, airfields or airship-bases, whereas by the term ‘network’ we refer to the use of the ‘net’.

The ‘nets’ of the two respective technologies differed considerably: Aeroplanes required hangars, runways, avgas-stations; huge Zeppelins, in contrast, needed gigantic and stable halls, mooring masts, avgas or diesel stations as well as lifting-gas stations.

The term ‘network’ indicates the use of a ‘net’, understood as the regular service provided on interlinked meeting-points or destinations. As services we define the transportation of passengers and airmail. The term ‘network’, therefore, is related to useful economic interactions between individuals and such a network needs a physical net to work.

Based on these considerations, it is to be analysed how fast the respective physical net both of airships and aeroplanes grew and may have exceeded an only inexactly quantifiable critical mass of destinations as an installed base of operation facilities.

The key characteristics of a network-market are significant economies of scale in production, the presence of switching costs and lock-in effects, as well as the definition of standards (Shy, 2001; Economides, 1996). Economies of scale in production imply that the first device is produced at enormous and irrecoverable sunk costs and that all further produced devices are remarkably less costly (Arthur, 1989). Airships, however, were mostly unique devices, whereas aeroplanes went into mass production in the course of the First World War. Consequently, considering the relatively small number of airships that had come into operation in contrast to the thousands of aeroplanes, it was more attractive to establish airports than airship bases. All existing airports define a physical net of potential, technically equipped destinations. Adoption or network externalities thus refer to the consumer of transportation services by aeroplanes or airships: A tight-knotted net of airports makes it easier to reach a desired destination as travelling routes and service frequencies increase.

These considerations culminate in a race between the velocities of the growth of the two physical nets, one used by aeroplanes, the other by airships, but both with the purpose of offering commercial services to customers as fast as possible.

Due to the network effects, the services of the faster growing net became more attractive compared to the slower growing one. Insofar, a critical mass of a physical net-size does in fact exist and the net surpassing this critical mass wins (Dixit, 1980).
Short-range and continental commercial transportation network for airship-services

Much earlier than with aeroplane technology, functioning artefacts were created using airship technology. The first rigid airship, built by Ferdinand von Zeppelin, was able to solve the prevailing technologies’ lack of insufficient load-carrying capacity with non-rigid blimps, which, however, were technically limited in size. The first Zeppelin was built in 1900 and measured 128 meters in length (Hallmann, 2002, 29-30); the LZ 129 Hindenburg, finished in 1936, measured 245 meters in length. This led to further problems as after its landing, a Zeppelin was best protected by storing it in a stable hall of the size the Zeppelin demanded due to its size. The building of such halls was capital-intensive. With such high investments bound in each destination, landing sites could only be profitable with a sufficient number of landing and starting airships (Knäusel, 1997).

This could only be realized if an adequate number of airships using this expensive infrastructure were really in operation. The crux of the diffusion of the airship was to create a homogenous growth of the number of airships both in commercial operation and the number of adequately equipped airbases near those destinations which were also attractive for passengers. Abstractly said, the crux was the establishment of a physical airbase net as a necessary condition for the creation of an attractive network for commercial services.

In December 1909, the first comparatively regular commercial passenger airship service was launched, aimed at servicing a net of important German cities with a number of Zeppelins. Interested cities should erect some infrastructure, e.g. landing places and halls. Until March 1914, a net of routes was established, connecting nine German cities. The service was delivered by seven rigid airships which transported a total of 10,197 paying passengers. Economically, however, it was a disaster (Schiller, 1966).

Soon after the end of the First World War, two modestly regular services between the German city of Friedrichshafen, the German capital Berlin, and the German city of Weimar were established. Even though these short-lived services (up to 1920) were technically more reliable than the Zeppelin services before the First World War, they were far from reestablishing a network for passenger transportation (Kleinheins, 1994).

In the United States, a fleet of twenty larger blimps transported over 92,000 passengers to destinations in Washington, New York, Los Angeles, Miami, Chicago, Cleveland, San Francisco, Dallas, New Orleans, and Memphis until 1932. Yet, neither was this small fleet of small-scaled blimps able to create a stable network of routes and destinations (Allen 1983, 95; O’Reilly 1983, 65-66; Dierikx 1997, 191).

The development of continental commercial aeroplane networks

An exploding technological development during the First World War eventually made the aeroplane reliable and technically robust. Aeroplanes could be mass-produced cheaply in different batch quantities and sizes and were, compared to a Zeppelin, inexpensive to operate (Braun, 1990).

After the War, military aeroplane technology and thousands of pilots in all countries had to be modified and employed in civil and commercial services to save the high-level expertise and knowledge. As a result, in the most important European countries, commercial air transport was started immediately by the ventures of individual entrepreneurs or firms producing aeroplanes but also as a result of governmental support. For that purpose, former military aeroplanes were used but also the first purely civil aeroplanes were built (Pollog, 1930, 6).

Commercial aeroplane services for transporting passengers and, occasionally, mail exploded (Braun, 1992). Already in 1920, a net of 25 airfields and destinations, including four foreign destinations, was in operation in Germany and served by a lot of regional domestic as well as some foreign airlines (Archive of German Lufthansa).

Since December 1918, regular service between London and Paris was established by a British airline; a French airline offered the same service from February 1919 onwards,
interlinked with the most important French cities and since 1921 interlinked with destinations in Poland, Belgium, Italy, Spain and even in North Africa (Fisser, 1922, 125-6). In 1922, 6,820 passengers were transported in Germany, and 11,850 passengers in England (Allen, 1981, 70).

Germany, geographically located in the middle of Europe, was the central field of foreign and domestic interest, interlinking new civil aeroplane routes between its neighbouring countries. After a lot of small firms had merged into national carriers, e.g. British Imperial Airways, and German Luft Hansa, which were strengthened in their competitiveness by governmental backing (Wüst 1927; Fürst 1936, Allen 1981).

This reinforced the installation of more and more routes serviced so that the net was expanded and soon interlinked destinations in all of Europe. The routes of German Lufthansa only are depicted by the following figure:

**Figure 1: Network of routes and destinations by the German Luft Hansa in 1926**

![Network of routes and destinations by the German Luft Hansa in 1926](image)

Source: archive of Deutsche Luft Hansa, Ordner Flugpläne 1926-1933, Cologne

Until the outbreak of the Second World War, hundreds of airports had been installed all over Europe connecting all important cities. Based on this physical net, a network of hundreds of routes served to transport passengers to all destinations in a regular fashion. This Europe-wide network of aeroplane-run passenger routes was additionally linked with the national railway nets and the national as well as the international postal services (Fisser, 1922; Arnoldi, 1928; Altmann, 1939). There was no space left for a competitive network of commercial airship-services.

In the United States, some of the approximately 100 private small and mid-sized airlines in 1925 did exist (Pollog, 1929, 58). After 1930, the government offered strong incentives for establishing passenger transport services (Pirath, 1931, 52). American Airlines, Eastern Airlines, United Airlines, or Trans World Airlines are examples of firms which established their own networks, interlinking them with each other.
During the 1920s, a dense physical net with well-equipped airports in all important cities emerged, covering all of the United States. The service over the North-Atlantic, from Europe to the United States, seemed to be an open field as it then remained unserviced by aeroplanes. Should this opportunity be the sole niche for the airships to build a net and a network?

**Intercontinental commercial transportation until 1937 as a niche for commercial airship-technology: attempts to build a net and failure**

Airship technology seemed to have the opportunity of realizing a first-mover advantage because aeroplane-run passenger services were technically unfeasible and service through ocean-liners suffered from an inadequately long duration of voyages on intercontinental routes (Brandt, 1935).

The advantageous technical facility of the airship had already been demonstrated in 1919, when a British airship crossed the North-Atlantic non-stop for the first time (Abbot, 1973). In 1919 and 1920, the German *Zeppelin Corporation* therefore discussed plans to cross the North-Atlantic for commercial intercontinental voyages to the United States (Kleinheins, 1994; Hebert, 2002).

In 1928, German *Zeppelin Corporation* finished the *LZ 127 Graf Zeppelin*, a large-scale rigid airship dedicated for long-distance commercial travel (Schiller, 1966; LZA 016/0459). This use was, however, inhibited by the outbreak of the Great Depression in 1929.

Thus, there was an enormous shortage of demand for transportation services on the most important business route in the world, the North-Atlantic route (Pirath, 1938, 70). By the end of 1931, a regular service had come into action, however, on a route to Brazil. The North-Atlantic route was served casually only (Knäusel, 1997).

In the United States, the US Navy installed airship infrastructure at the Airship Base Lakehurst, New Jersey and the airship base Moffet Field on the Pacific coast, which was finished in 1933. Both bases were dedicated to the military use of two huge airships owned by the US Navy. But as both airships were destroyed in accidents in 1933 and 1935, respectively, the Navy was forced to discontinue its interest in airships (Robinson & Keller, 1982).

The newly built giant Zeppelin *LZ 129 Hindenburg* had come into commercial operation to regularly serve the North-Atlantic route from Frankfurt am Main in Germany to Lakehurst from 1936 until its disaster on 6 May 1937. But the *LZ 129* had not always been
fully booked (LZA 006/0668; LZA 006/0757). Only two sole huge rigid airships were in operation worldwide and far from establishing an economically sustainable net of interlinked destinations: the routes were point-to-point services only and not synchronized well with other means of transport (Bauer & Duggan, 1994).

But what happened to the commercial airship services in other countries? In Great Britain, a plan for establishing worldwide net employing twelve huge rigid airships was under consideration in the mid-1920s. Routes from London via Egypt to India and Australia, to Canada, routes to Central America, and routes over Africa to Cape Town should be established as an imperial-wide network (Beelitz, 1927). The net of German Zeppelins could theoretically be linked to this British backbone.

The first airship related to this project crossed the North-Atlantic in July 1930 and reached Montreal. The next airship started on 1 October 1930, but crashed and all passengers lost their lives. Because of this disaster, the British project was immediately terminated and a real chance to create a large-scale network of commercial airship services passed by (Chamberlain, 1984; Higham, 1960; de Syon, 2002, 189).

In 1936, a small British syndicate suggested cooperation with the Deutsche Zeppelin Reederei to create a worldwide network of regular commercial routes linking Great Britain, Germany, other European states, the United States, Canada, South America, South Africa, Egypt, India, Australia, and states in the Far East with each other (Edmonds, 1936). At the same time, vague plans seemed to be under consideration in the Netherlands about a regular airship service from Amsterdam to Dutch-Indonesia (Käfer, 1999, 17-18; LZA 005/0601). However, all these projects collapsed when the LZ 129 Hindenburg crashed.

If all of the projects under consideration had been realized, there would have been a realistic chance for rigid airship technology to successfully compete against aeroplane technology. In the mid-1930s, the technology of huge long-range rigid airships had been technologically fully developed while contemporary aeroplanes were not. It seemed that the huge rigid airship would have had a so-called first-mover-advantage to be the first to create a net and a network for commercial transportation services to occupy the market for intercontinental services before the aeroplane could.

References
Primary sources are from the Archive of the German Lufthansa (Cologne) and from the Archive of the German Luftschiffbau Zeppelin LZA (Friedrichshafen).
Allen OE. (1981). Die ersten Fluggesellschaften. Amsterdam (German ed.).
Rising wages in fifteenth-century English agriculture

Gerald Liu, University of Durham
(gerald.liu@durham.ac.uk)
Supervisor: Dr Benjamin Dodds

In fifteenth-century England, when pestilences kept returning and the corn price level was falling, as many signs show that agrarian labour was in short supply, the money wage rate remained steady. As in Farmer’s charts, the rising trend in real wage rates and the falling trend in price levels suggest a labour market favourable to the supply-side, the steadiness in money wages, which is especially conspicuous on individual manors, is problematic, as if no contestation sparked in the competition among employers.222 This might have been explained with wage regulations or bullion shortage, but detailed examination of the manorial source material may reveal the rising wages in another sector of agrarian labour.

Graph 1: Five-year moving average of Farmer’s wage indices 1390-1465
(1390’s value = 100%)


The wage data used as economic indicators are compiled by Rogers, Beveridge, and Farmer of piece wage rates extracted from manorial accounts.223 Different to fluctuations in Graph 1 and 2, which are averages calculated of discontinuous series of wage rates, the manorial source material indicates that on individual manors money wage rates remained almost unchanged in the late middle ages except temporary spikes and the permanent leap in the aftermath of the Black Death. Steady piece rates seem to be the norm rather than the exception. The steadiness did not prevent cash income from changing. Overall cash income increased when the worker took on more pieces of work at the same wage rate. It, however, hinders historians from finding the genuine trends. To identify the trends, payments by piece must be replaced with payments over the whole year. Unfortunately, yearly cash income of an average worker is unknown because the overall amount of piecework taken on by the worker is hardly known in this source. Instead, as the category of permanent hired workers, farm servants (famuli), from the same source has barely been studied in terms of wage movements, the yearly cash salaries they received can possibly serve this purpose.

Unveiled in Postan’s and Farmer’s (1996) studies, farm servants were permanent agrarian workers undertaking continuous responsibilities.224 They were like casual workers

---

224 M.M. Postan, The famulus: the estate Labourer in the 12th and 13th centuries, EcHR Supplements 2 (1954); D.L. Farmer, ‘The famuli in the later middle Ages’, in R. Britnell and J. Hatcher (eds.), Progress and
bound to be hired in the open market under wage regulations (1388 & 1446). Their work period was normally 52 weeks, e.g. at Lullington (Sussex), or 50 weeks, e.g. at Pittington (Durham), in the year. The term could be manipulated to fit the demands on the particular manor, like in the sowing seasons additional ploughmen were hired or at the lambing young assistants were employed. Preference to extraordinary shorter terms as discovered by Dyer and Penn with regard to post-Black Death labour markets seem to have only happened after massive mortality, like in the aftermath of the 1440/1 pestilence at Alciston (Sussex). By 1400, farm servants dominated in ploughing and herding, as customary workers barely participated in these operations, and as customary workers were of a marginal role. Employment of farm servants should properly reflect the demands of a specific sector of agrarian labour; and the cash salary received by them might represent the trend in overall cash income. Earlier research of the rising wage has been devised by Farmer on a wider market and undertaken by Dodds of Pittington demesne. Nonetheless, variety of posts indicates different employment patterns, the yearly contract was not necessarily equal to full-time hire, complicated remuneration questions the significance of cash salaries, and diversity in social status implies uncertain treatments received by the farm servant. Accordingly, Farmer has remarked the impossibility of constructing an index of farm servants' remuneration. In the following discussion, I will argue that these points are either marginal or avoidable, and an index as an economic indicator is possible.

Generally speaking, farm servants listed in the pay roll consist of lesser officials, permanent workers, and temporary helpers. The last category clearly did not receive yearly salaries. Among the first two, oddities of employment are mainly related to the administrators. As suggested by Postan’s and Farmer’s studies, inconsistent patterns of payments were applied to manorial administrators, e.g. bailiffs or reeves. On some manors, such as Durham Priory’s estates at Pittington and Elvethall, the administrator was like a senior farm servant receiving a slightly higher salary. On manors like Longbridge Deverill (Wilts.), a significantly higher rate, 40s, as against ordinary 13s 4d, was given. The administrator at Hurdwick (Devon) received a reward of one mark in addition to the already high salary. And on Ebbesbourne manor (Wilts.), the administrator was not even listed on the payroll. As elaborated by Dodds, the administrator seems to be a better-off peasant, who had his own holding and was unlikely to work like ordinary servants who lived upon hire. Permanent servants appear to be the only possibility of illustrating the change in annual cash income of hired workers. Salaries given to permanent servants, mostly ploughmen and shepherds, constitute consistent patterns on individual manors. In Table 1, a sample extracted from three manors in north-east, south-east, and south-west England presents that the servants employed in the same posts on the same manor receive roughly the same salaries and that over time


230 DCM, EAR, 1424-91; Dean and Chapter of Durham Muniments, Pittington Account Rolls (Hereafter DCM, PAR). 1405-51.
231 Glastonbury Abbey Documents (hereafter GAD), 9815-6, 9818-21, 9823-6, 9829, 9830-3, 9835-6, 9838-41, 9869-70, 9872-6, 9877, 9940-2, 9944-62, 9968, 10613, 10615, 10708-9.
232 Devon Record Office (hereafter DRO), D52/1.
233 Winchester Pipe Rolls (Hereafter WPR), 11M59/B1/150-191.
consistent trends are conspicuous. The steady numbers of them prove the posts were permanent and maintained ordinarily. The ordinary rates, or in a few cases the maximum rate, are recognizable. Omitting lesser officials and temporary helpers, we can possibly construct an index of farm servants’ cash salaries.

| Table 1: Movements in salaries given to ploughmen and shepherds in the 15th century |
|------------------------------------------|-----------|-----------|-----------|-----------|
| Elvethall                                | 1400      | 1425      | 1450      | 1475      | 1500      |
| ploughmen                                | 6×16s*    | 5×16s*    | 5×16s*    | 5×16s*    |
| Alciston                                 | 1400      | 1425      | 1450      | 1475      | 1500      |
| ploughmen                                | 7×6s      | 9×(6+2)s  | 8×8s      | 8×8s      |
|                                        | 3×5s 6d   |           |           |           |
| shepherds                                | 1×6s      | 2×(4+1)s  | 2×8s      | 3×8s      |
|                                        | 1×4s       |           |           |           |
|                                        | 2×3s 6d    |           |           |           |
| Longbridge Deverill                      | 1400      | 1425      | 1450      | 1475      | 1500      |
| ploughmen                                | 1×20s     | 2×20s     |           |           |
|                                        | 1×12s     |           |           |           |
| shepherds                                | 1×13s 4d  | 1×13s 4d  | 2×13s 4d  |           |
|                                        | 1×10s     | 1×10s     |           |           |

Note: * The posts are not specified except the reeve and the carter, which are both excluded.
** Half-year employment.
Sources: DCM, EAR, 1424/5, 1450/1, 1475/6, 1505/6; ESRO, SAS/G44/77, 103, 122; GAD, 9818, 9873, 9959.

To represent the annual income, the employment has to be the servant’s only source of income. Their regular appearance in operations suggests that they worked full-time. Ploughmen, for example, ploughed throughout the year except in the summer and the harvest season, as the soil had to be constantly attended. In the year, regardless of fallowing, an average plough-team could cope with 66 acres, equal to around 200 workdays.235 Their role in other operations has been underestimated.236 At Ormesby St Margaret’s (Norfolk), farm servants were responsible for around 40 per cent of reaping work.237 Estimating the number of gloves given to them, we find at Alciston up to 15 servants were potentially involved in reaping.238 Some of them, who provided carriage services, were hardly doing a light task if in open-field system. The carriage task required travel around the village and needed an extra worker to go with the cart to fork up sheaves.239 After that, they worked in the barn and prepared the fields. It is, indeed, hard to quantify the intensity of work, but it must have been intensive enough to make the manager at Bromham to provide board for all servants from Lammas to Michaelmas.240 Estimation of weeding and haymaking work is harder due to lack of information, though servants regularly attended the operations in the summer. Overall, conservatively, at least 250 workdays were shouldered by a ploughman. Added by the eight weeks of holidays and breaks as suggested by Walter of Henley, the servant was not given much idleness in the year.241 Regarding shepherds, they were not allowed to leave the flock and when it was retained at the lord’s sheepfold the servants had even to sleep there.242 Unless

238 ESRO, SAS/G44/87.
239 GAD, 10699.
240 SC6/1046/14, 18.
more than the lord’s flock was commended to the shepherd, like at Lullington during 1429-40, herding for the lord had to be his sole undertaking in the contract period. It is reasonable to assume the ordinary farm servants were full-time manorial workers.

The servant’s remuneration consisted of cash and grain. It has been considered difficult to subject the remuneration to systematic analysis.243 Regional variations in cash salaries, though considerable, e.g. 8s given to the ploughman at Alciston whilst 16s 8d given at Apuldram in c.1430, actually form consistent trends on individual manors like in Table 1.244 This allows cash payments to be compiled into series.245 Issues of grain, however, make quantitative analysis hazardous.246 Grain liveries were given to replace boarding; and the quantity, usually a quart for 10 weeks, and quality, normally barley, as illustrated on Table 2, remained unchanged over this century. The servant had to consume a part of it, probably a third, as he was unlikely to have a productive holding.247 The rest could be sold for cash, in case he did not have a family, but the low price level of corn in the fifteenth century attests that the perceived increase in wage rates was not hidden here. Moreover, perks were issued for refreshments, like at Lullington for carriage;248 and fringe benefits were given, like offerings (oblaciones) on Christmas and Easter at Alciston or goose money in the Northeast.249 These arrangements were supplementary to the salary and trends cannot be discerned. Considerable perks, like at Appuldram and Bromham, a toga of 4s, was a way how managers delayed cash increments, as a ‘gift and concession’ of 2s was given at Alciston until 1441/2, when their cash salary increased by 2s.250 It appears, though the grain livery constitutes a considerable part of the overall income, it was more a traditional arrangement than a negotiable term in the open market; and the value of perks is usually marginal and can be ignored. The cash salary, though not representative of the value of overall income, represents the actual increment agreed in the open-market negotiation.

| Table 2: Grain liveries given to ordinary farm servants in the 15th century |
|-----------------|-----------------|-----------------|-----------------|-----------------|
|                 | 1400            | 1425            | 1450            | 1475            | 1500            |
| Elvethall        | 1qt (wheat & rye) / 12weeks | 1qt (wheat & rye) / 12weeks | 1qt (wheat & rye) / 12weeks | 1qt (wheat & rye) / 12weeks |
| Alciston         | 1bu barley /week | 1bu barley /week | 1bu barley /week | 1bu barley /week |
| Longbridge       | 1qt (wheat & barley) /12weeks | 1qt (wheat & barley) /12weeks | 1qt (wheat & barley) /12weeks | 1qt (wheat & barley) /12weeks |
| Deverill         |                 |                 |                 |                 |

Lastly, the pattern of employment evolved from a rather inconsistent constitution, where the wage varied in accordance with variant social status. In this century an old practice that employed farm servants from villeins was still applied on a few manors. At Overton, for instance, 4 villein ploughmen were replaced by freemen in the 1410s and earned 3s 4d more than villein co-workers.251 This rare case reflects the postponed liberation of villeins and proves that in the early fifteenth century the economy was favourable to the lower strata. Moreover, servants who had productive holdings might be unable to attend the duty

244 Both manors belonged to Battle Abbey. ESRO, SAS/G44/82; SC6/1018/3.
245 Dodds, ‘Pittington demesne’, p.152.
249 ESRO, SAS/G44/93; DCM, EAR, 1424-91.
250 SC6/1018/4; SC6/1047/18; ESRO, SAS/G44/72, 94.
everyday. During 1400-28, a few ploughmen at Monkton Deverill and Walton (Wilts) had substantial holdings and were not full-time servants. This arrangement is revealed in the form that they were paid grain 25 per cent lower than the ordinary rate and the cash salary was 5s in comparison to the ordinary 13s 4d. The extraordinary rate of payment reveals that this was a special arrangement and the ordinary money wage rate, which we focus on, was not affected by the arrangement. Lastly, similar to the early modern counterpart, some servants, especially in Norfolk, were not adults. From the records of Ormesby St Margaret’s manor, a wage ladder is compiled in Table 3, which reveals the high margin of money wages, whilst most of them were boarded receiving no grain livery. One cannot help but wonder if lower wage rates were results of minority or physical incapacity. Even so, this pattern does not hinder us from recognizing the maximum rate given to fully competent servants. Although influence of social status on servant employment is demonstrated by these cases, they are all hard to come by and hardly undermine our sample. Moreover, they remind us to be alert to special arrangements in the manorial source material.

| Table 3: Annual money wages given to farm servants on Ormesby St Margaret’s, Norfolk |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Alex Bere                        | 1424            | 1425            | 1427            | 1428            | 1430            |
| Henry Spring                    | 1423            | 1425            | 1427            | 1428            | 1430            |
| Roger Westgate                  | 1424            | 1425            | 1427            | 1428            | 1430            |
| John Scott                      | 1445            | 1447            | 1446            | 1447            | 1449            |
| William Smith                   | 1449            | 1451            | 1452            |                |                |
| Thomas Mathew                   | 1443            | 1444            | 1446            | 1451            | 1452            |


Graph 2: Farm servant money wage index over the 15th century


By fetching ordinary rates of cash salaries given to ploughmen and to shepherds, an index is constructed and drawn into Graph 2 to illustrate the trend in annual wages in the fifteenth century. Samples that are too short to form comprehensible trends, e.g. Downton, and that contain unaccountable irregularities, like Overton, are omitted. The graph shows a clear trend indicating that the money wage rate in the sector of farm servants rose in the first half of this century. A divergent trend is thus formed between money wage rates and corn price levels implying an economy that resembles the post-Black Death one, where depopulation slashed rural labour supplies and greatly shrank demand for corn. Such economic effects persisted until the mid-century, when both the rising wage and the falling price reached the upper and lower limits. Another divergent trend is recognized between yearly salaries given to

permanent workers and piece wages given to casual workers. The trend implies two different income patterns. Regarding casual workers, obviously the more pieces they worked, the more they earned. Influence of depopulation is performed in the number of pieces undertaken by individuals. As for permanent workers, demographic changes were only reflected by cash salaries, and sometimes disguised perks, with uncertain connection to actual work shouldered by them. The drawback of this approach is this is useable only because of the special uniformity of servant cash salaries in this period, as before which social status of servants create considerable diversity of remuneration and as after which the feature of child-servant makes wage data unmanageable. All in all this research has provided a different way with different understanding of wage evidence to answer an old question.
The economic problems of the 1690s: social consequences, official responses and popular reactions

Brodie Waddell, University of York
(bw579@york.ac.uk)

This paper is an attempt to show how the series of economic problems that struck England in the 1690s affected ordinary people and the reactions produced by the ‘hard times’. The events of this decade can, I believe, reveal much more about early modern social and economic relations than we may have previously assumed.255

It seems prudent to begin with a very brief review of the particular circumstances that make the 1690s so interesting. The primary causes of this exceptional economic climate were fourfold: shortages of grain, war with France, reminting the coinage, and rising textile imports.

The dearths of this decade probably had the broadest economic impact, though also the least studied. Historians have often described the late seventeenth and early eighteenth centuries as a period of relatively cheap food and minimal inflation. They are, of course, correct – but this long-term pattern is rather misleading. Whilst the price of grain in the later Stuart era was, on average, significantly lower than in the Tudor, early Stuart or Georgian periods, the 1690s were highly exceptional. Beginning in 1692, England experienced a series of six extraordinarily poor harvests with only one year of average prices separating them. Some of these years were truly disastrous. In 1693-4 and 1697-8, for example, prices were over 50 per cent higher than average.256 Not only did this mean several years of severely inflated prices, but the contrast between this decade and the one that preceded it was astoundingly sharp. In fact, prices in 1693-4 were more than double what they had been in 1688-9, the year that William arrived in England. Contemporaries described of the consequences this had for labouring people. In 1699, for instance, a pamphlet described how: ‘Hospitals and Workhouses have been erected to set the Poor at work ... But this is all to no purpose; the Poor Man may work very hard, and all his Week’s Pay, especially if he have any Family, shall not find them in Bread’.257 Moreover, many poor families experienced dearth as a double hardship: the increase in their expenses caused by rising food prices often coincided with a fall in their income caused by the drop in demand for goods and labour. As people redirected more money into food, anyone who earned a living through manufacturing or retailing might suffer cuts in wages or unemployment. Overall, it is clear that these years of exceptionally high food prices caused problems that could ripple through the entire economy.

Yet, dearth was not the only affliction of this decade. The second major problem to strike the economy during this period was war. When the decade dawned, William had just made a huge commitment of men and resources to the war against Louis XIV. The economic implications were many. A few industries and workers benefited from war; however, for most people, the economic effects of the Nine Years War were unpleasant at best, and disastrous at worst. The most dramatic consequences were the damage to maritime trade and the rapid increase in taxation. Britain lost hundreds of merchant ships to the French over the course of the war, and many more simply did not sail because there were not enough sailors to crew them.258 For those who produced goods for export, this was a severe blow, and even domestic

255 NB: This research is still extremely preliminary. It is, essentially, based on a very early foray into this material, which I intend to form the foundation of a larger project focused on this period. I have, therefore, only included references for specific individual quotes and examples, and have not included them for generalizations based on a variety of different sources. I have also used short-titles (rather than full citations) throughout.

256 Hoskins, ‘Harvest Fluctuations … 1620-1759’.

257 Anon., The Poor Man’s Plea (1699), pp.2-3.

258 Jones, War and Economy, esp. ch. 5; Ormrod, Rise of Commercial Empires, pp.211, 284-5.
shipping – such as the east cost coal trade – was disrupted. Moreover, an increasing proportion of the country’s economic resources were appropriated for the war effort through taxes. As John Brewer showed twenty years ago, the figures are staggering. Whereas in the mid-1680s, annual tax revenues were less than two million pounds, during the Nine Years War the government extracted around double that amount each year.

William III’s bloody feud with Louis XIV was also at least partly responsible for this era’s most painful financial moment: the currency crisis of 1696. The need to buy supplies for the armies of England and her allies rapidly heightened the demand for exportable silver bullion which, in turn, fostered a huge black market in clipping and melting the country’s coinage. The resulting scarcity and ‘badness of the coin’ created considerable liquidity problems, but these were minor compared to the excruciating short-term consequences of the government’s attempted solution, which was to re-mint the entire stock of ‘ready money’ over a single year. Hints of the hardship caused by this process can be gleaned from John Evelyn’s account of the events in London, where on 24 May 1696, for instance, he noted: ‘Mony still continuing exceedingly scarce, so as none was either payed or received, but on Trust, the mint not supplying sufficient for common necessities’. Reports from elsewhere in England suggest that the situation was still worse outside of London. Retailers often refused to accept clipped coin, which could be economically crippling for poor people who were not deemed credit-worthy.

Finally, we should also note that whilst some economic problems – such as the trade disruptions and currency shortage – were concentrated during the war years, other problems were actually heightened by the coming of peace in 1697. In addition to the dilution of the labour market caused by demobilization, the end of naval warfare and privateering brought a sudden boost to imports from overseas. For textile workers, this meant a flood of cheap Indian calico cloth. The East India Company’s ships brought vast quantities of this cloth, which became extremely fashionable and depressed demand for textiles manufactured by English weavers. This caused considerable hardship in places like London, Colchester and Norwich.

The economic problems in the 1690s produced a huge range of different reactions at all levels of English society.

The central government had perhaps the weakest response to these events. In part, this is due to the fact that was the cause of the trouble in several cases, such as the raising of taxes and the decision to re-mint the currency. Its attempt to mitigate dearth was rather more helpful, though it was not as interventionist as its Tudor and early Stuart predecessors. For example, William’s government did not issue an official Book of Orders to local magistrates. Indeed, it issued royal proclamations banning exports of grain – only exports to France in 1693, exports in general in 1698. This was followed, rather later, by an Act of Parliament in 1699 which suspended corn exports for a full year. Moreover, in 1698, the government also issued a proclamation reiterating the penalties against profiteering – specifically condemning monopolistic practices like engrossing, regrating and forestalling. It also should be noted that it ultimately sought to restrict imported consumer goods that competed with domestic producers.

But, for the most part, William’s government appears to have relied on the discretionary actions of local magistrates and officials. Here, there is clear evidence that at least some authorities sought to counteract economic distress direct intervention and aid. The

259 Jones, War and Economy, pp.19-20, 128-9, and passim.
260 For complaints about the currency in the years leading up to the recoinage, including claims that the state of the coin had ‘made great distraction in trade’ and put all commerce into ‘great confusion’: Stout, Autobiography, pp.92, 107, 109-10, 113-15.
261 Evelyn, Diary, V, 242.
262 Ibid., 507-8; 10 Will. III, c. 3.
263 Ibid., 507-8; 10 Will. III, c. 3.
most immediate response was probably to expand the provision of poor relief. Likewise, several towns established new workhouses during these years and – whilst they were hardly likely to be welcomed by the poor – these institutions could potentially relieve economic pressure in especially ‘hard times’. Many urban magistrates also used the Assize of Bread to limit the ability of bakers to suddenly or dramatically raise their prices. County justices sometimes became involved as well – for instance, Northamptonshire magistrates demanded assizes of bread in every market town in January, 1694. The authorities also attempted to prevent profiteering amongst grain dealers by issuing orders and indictments against engrossing, forestalling and regrating corn. Although the number of bakers and traders actually punished under these various policies may have been small, the case of even one notorious offender being brought before the justices of the peace could leave a lasting mark on the public consciousness.

Beyond these official responses, there was also a perhaps unprecedented outpouring of suggestions, opinions and complaints voiced in what we might now call ‘the media’. For example, many moralists – both clerical and lay – claimed that sudden mass hardship was a divine judgement for the nation’s sin and wickedness, leading them to recommend ‘a general Repentance and Reformation’ in the form of fasting and prayer. Many of these religious commentators also suggested that Christian charity was an essential part of the solution. Quantifying the breadth of this reaction is next to impossible, but a very crude cultural metrics indicates that the proportion of publications with the word ‘charity’ in their title in 1693-1700 was nearly double the proportion in 1683-90. The extent of this response shows the continuing strength of religious understandings of economic behaviour in times of crisis.

Other observers were rather more direct in their criticism. Rather than blaming the sinfulness of the country as a whole, they complained that particular social groups or political interests were the cause of the problems. One especially popular story – which was published at least four times during this period – decried ‘Avaritious’ farmers who ‘endeavoured to hold up the Price of their Corn to an Extortionable Rate, to the great Oppression especially of the Poorer sort’. Other cheap publications claimed that it was foreign immigrants such as ‘Strangers from France’ and ‘thievish Scottish peddlers’ who undercut English workers and shopkeepers. Similarly, the responsibility for the distress caused by the re-minting of the coinage was variously assigned to rebellious Jacobites, plotting Quakers, and of course the government itself. Although they were often clichéd and contradictory, the claims of these preachers, balladeers and tract-writers may have both shaped and, to some degree, expressed the attitudes of their audiences.

Craft and trade groups also responded publicly to the difficult economic circumstances of the era. Some of these requests for intervention took the form of petitions sent to parliament, including the one received from ‘the Fraternity of Skinners and Glovers of the Corporation of Ludlow, in the County of Salop,’ on 1 April 1697, which declared that the industry was ‘a great Support to the poor People’ of the town,

but, of late, the great Taxes laid upon Salt, Alum, and Oil, with which the said Leather is dressed, hath so diminished the said Trade, that Half the working Glovers are already like to starve, for want of Work; and, if there should any further Tax be laid upon Leather it would prove almost, if not a total Destruction thereunto.

---

265 Beloff, Public Order, 64.
266 Dunton, England’s Alarum (1693), 4, 21. See also ‘Prayers and Thanksgivings’ to be used ‘In Time of Dearth and Famine’ in The Book of Common Prayer (1662).
267 Based on a search of Early English Books Online.
268 Anon., The Country-Miser or the Unhappy Farmers Dear Market (1693); Anon., A Sad, Amazing and Dreadful Relation of a Farmer’s Wife (1697); Pepys Ballads, IV, 236.
269 Pepys Ballads, II, 88; IV, 300, 326.
270 Pepys Ballads, IV, 307; De la Pryme, Diary, 98 (8 June 1696); Gaskill, Crime and Mentalities, 193.
However, it was foreign imports – rather than new taxes – which provoked the most dramatic reaction amongst trade organizations. As the war with France wound-down and the maritime trade routes opened up, England was flooded with reams of cheap ‘calico’ cloth from India, and weavers reacted with dismay. They petitioned parliament and published several broadsheets purporting to show ‘how the East India trade is prejudicial to the kingdom’. Yet they did not rely entirely on peaceful methods: they also ransacked shops carrying the cloth and assaulted the headquarters of the East India Company. This mixture of petitioning, publishing, and violence eventually resulted in the passage of an act against the importation of printed calicoes in 1700.

The reactions of those who lacked the access to a printing press or a craft association were much less likely to be recorded for posterity, but it is clear that they often did not suffer silently through hunger and impoverishment. Even the weakest individuals might actively seek material support by sending letters to local officials and magistrates. Others worked together to make their voices heard. Sir John Brownley of Stamford, Lincolnshire, discovered this first-hand at the height of the recoinage crisis in June of 1696. According to a contemporary diarist, ‘the country people’ got together and ‘marchd in a great company, very lively, to [Brownley’s] house’, with ‘their officers, constables, and churchwardens amongst them’. There they declared:

\[\text{God bless K[ing] W[illiam], God bless the Church of England, God bless the Parliament, and the Lords Justices, and Sr. John Brownley! We are King William’s true servants, God forbid that we should rebel against him, or that anything we now do should be construed ill. We come only to his worship to beseech him to be mercifull to the poor; we and our familys being all fit to starve, not having one penny ith’ world that will go.}\]

In response, Brownley offered them £15 and ‘let them go to the cellar, where they drunk God bless King William, the Church of England and all the loyal healths that they could think on’. However, before finally leaving, they noted that they would ‘be forced out of meer necessity to come see him again, to keep themselves and their families from starving’. The crowd remained unimpeachably submissive throughout the whole event – incessantly declaring their loyalty to every possible authority, beseeching mercy rather than demanding redress – and yet they must have inspired fear as well as pity. Moreover, such crowds did not always remain so peaceful. A preliminary investigation revealed over thirty recorded food riots in England during the dearths of the 1690s, and many involved at least minor violence. This may not have been the first response to scarcity and deprivation, but it was certainly an ever-present possibility.

So, how does this remarkably diverse range of reactions – from king to paupers, from prayer to riot – fit into the longer historical narrative? First, it should be clear that many of these responses to economic crisis were extremely traditional. There were many previous occasions when dearth and depression were met with calls for charity and moral reformation, paternalist intervention, anti-foreign sentiment, and popular protest. Indeed, taken together, it seems that the events of the 1690s actually show a great deal of continuity with what came before, and even after. Second, however, there were several features of this period that make it unique. There seems, for example, to have been a tangible shift in responsibility from the centre to localities. Rather than sending out orders and directives, the authorities in London relied on those in county towns and rural parishes to take the initiative. In addition, there

\[\text{272 Englands Almanack (1700).}\]
\[\text{273 Luttrell, Brief Historical Relation, IV, pp.172, 174, 198-9.}\]
\[\text{274 11 & 12 Will. III, c. 10. The conflict over calicos remerged in the late 1710s which ultimately lead to an even more extensive parliamentary prohibition in 1721.}\]
\[\text{275 Hindle, On the Parish?, pp.405-32.}\]
\[\text{276 De la Pryme, Diary, pp.95-6 (6 Jun 1696).}\]
appears to have been a change in the way responses were communicated. Cheap print – things like broadsheets and printed petitions – had an increasingly important role shaping and expressing popular sentiment. Indeed, one might argue that an unprecedented number of reactions to this sudden hardship took place in ‘the public sphere’. It is possible, therefore, that the so-called ‘starving times’ of the 1690s were a turning-point in the way people responded to economic crisis.
The contribution of business networks to the formation of the Cleveland iron industry cluster, 1840-80

Stephen James, University of Durham
(s.james@tees.ac.uk)

Supervisors: Professor Ranald C Michie and Dr Gill Cookson

Explanations of the development of Cleveland’s iron industry traditionally emphasize favourable geographical and geological conditions along with the chance discovery of extensive ironstone deposits in the hills near Middlesbrough. Combined with the vision and energy of mid-Victorian entrepreneurs, these locational factors produced a major industrial district and the fastest growing town in the nineteenth century. Annual pig iron production rose to 1.2 million tons by 1879, 20 per cent of British output, and the combined population of Middlesbrough and Stockton expanded from 15,261 in 1841 to 98,245 in 1881 (Jeans, 1875; Reid, 1881; Gleave, 1938).

Rather than being an inevitable consequence of geography, this paper suggests that central to Cleveland’s development were the interconnected networks of business and family – often Quaker – interests, and of north-east and national ironmasters. The study draws on data from 130 iron and engineering firms established in Cleveland between 1840 and 1879 and the entrepreneurs and investors involved with them. The data have been collected from business archives, newspapers, industry journals and biographical material. It is used to examine: the background and connectedness of the investors; linkages between firms; and how new business formation and entry were related to cluster development. The importance of the degree of connectedness for firm performance, using survival as a proxy, is tested using a logistical regression model.

Networks and clusters

Following Coase (1937) and Williamson (1986), networks can be seen as a way of organizing transactions that lie along a spectrum between impersonal market exchange and internal transactions within a firm. Emphasis is placed on how networks reduce the costs of opportunistic behaviour, but these are not the only costs of market activity (Casson 1997). More generally there are information costs, including the costs of collecting, monitoring and analysing market information.

Networks are important since it is through the connections between businesses, customers, suppliers and others that information about profitable opportunities flows. Information is not floating around somewhere in the ether, ready to be tapped, but generated as a result of contact between economic agents. The links may well already exist, as in the membership of a religious group, but have to be developed and exploited if the information, and with it the flow of resources, are to result in an effective business network. In this view social connections are important not because they determine the nature of economic activity or form of business organization (Granovetter, 1985). It is because they provide lower cost, more reliable and trustworthy sources of information; and more and better quality information raises the level of economic activity. Since networks, and the social institutions and structures they reflect, have an existence that is in some sense independent of their members, they can be regarded as the social capital of an economy. One approach is to view social capital as akin to physical capital infrastructure. Many infrastructure investments produce network externalities: once established these assets exhibit significant increasing returns as the more users there are, the lower the cost both to the marginal user and existing users. Similarly, the benefits of a business network are available to all and can also be regarded as providing a positive externality. The better the network functions in terms of providing information, increased trust and a wider set of linkages, the greater will be the benefits to each member and the wider economy. These benefits improve the quality of entrepreneurial
decision-making and generate more investment, and the externalities associated with the business network produce self-sustaining growth.

The significance of networks for Cleveland is that despite the geographical advantages that triggered the initial growth, it lacked most of the conditions normally expected for the development of a successful cluster. In terms of Porter’s (1990) factor conditions, and in contrast to Sheffield (Tweedale, 1995), it was the structure of business ownership and the strategy pursued by infrastructure owners and investors that enabled Cleveland’s industry to develop. In particular, it was through the networks of investors and ironmasters that new firms were attracted into a district.

The development of Cleveland’s iron industry cluster

Much has been made of the fact that a substantial proportion of Cleveland’s iron output was exported (Bullock, 1971); in 1871 pig iron exports were approximately half a million tons, about 40 per cent of production. This left 60 per cent processed by Cleveland firms. Of course, a high proportion of finished iron was also shipped out, but the important point here is that so much of the processing took place on Teesside.

| Table 1: Iron and engineering firms established in Cleveland, 1760-1879 |
|---------------------------|--------|--------|--------|--------|--------|--------|
| Sector                   | 1760-1850 | 1850-59 | 1860-69 | 1870-79 | 1850-79 Total |
| Pig iron                 | 0       | 10*     | 13      | 10     | 33       |
| Iron processing          | 3       | 4       | 14      | 29     | 47       |
| Smelting & Processing    | 1       | 3       | 2       | 0      | 5        |
| Engineering              | 3       | 4       | 6       | 6      | 16       |
| Iron and Engineering     | 6       | 5       | 2       | 0      | 7        |
| Other Metal              | 0       | 0       | 2       | 1      | 3        |
| Unknown                  | 1       | 0       | 4       | 1      | 5        |
| Total                    | 14      | 26      | 43      | 47     | 116      |

*Several firms already on Teesside moved into pig iron production after 1850.

The data on firms established in Cleveland (Table 1) suggest a classic pattern of cluster growth. The first producers concentrated on basic iron (13/26 in the 1850s), while many later entrants diversified and extended the range of processes and industries. In the 1870s entry in the iron processing and engineering sectors dominated – 74 per cent (35/47). Moreover, to some extent Table 1 understates the extension of the district’s interests as some firms diversified in later years. Additionally, it does not include user industries, notably shipbuilding, or those that developed from the by-products of iron (gas and chemicals).

That this cluster’s growth was facilitated by business networks that existed prior to and developed along with the industry is shown by the extent to which the entrepreneurs, investors and firms were connected to each other. At the level of the individual entrepreneur this was fairly limited; only a fifth were directly connected to more than one firm in the iron industry as partners. However, when connections to firms in other sectors or other relationships are considered, linkages are much greater. The degree of interconnection rises to almost 50 per cent: that is, almost half of all investors are linked to at least another investor in a different firm in at least one way. This is confirmed by examining linkages between firms (Table 2). For the whole period over half the firms setting up in Cleveland had some connection with another business in the district.
Table 2: Connections between Cleveland firms

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>At least one partner:</th>
<th>Total firms connected*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>investor in another iron/engineering firm*</td>
<td>business connections with other firms</td>
</tr>
<tr>
<td>1850-59</td>
<td>26</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>1860-69</td>
<td>43</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>1870-79</td>
<td>47</td>
<td>26</td>
<td>28</td>
</tr>
<tr>
<td>1850-79</td>
<td>116</td>
<td>53</td>
<td>59</td>
</tr>
</tbody>
</table>

*Partner includes director.  + Columns do not add up; firms are often connected in more than one way.

These connections reveal the importance of the regional business networks in the development of the iron industry. New businesses were formed not just by outsiders spotting an opportunity and moving in, but as a result of existing investors extending their interests, attracting or facilitating and financing the entry of new investors and entrepreneurs, or establishing new enterprises themselves. Often the new investors and entrepreneurs were family members, part of the same religious group, or already connected to iron and engineering in some way. In other words, they were drawn in through an existing network.

Examination of the backgrounds of the investors and entrepreneurs suggests that an important common link was with the Quaker business (coal, railway, and Middlesbrough’s port) and banking interests of the Darlington-based Pease and Backhouse families (Kirby 1984; Orde, 2000; Cookson, 2004). Quaker-related firms occurred with considerable regularity. Tables 3 and 4 provide details of the links at the level of the individual investor-entrepreneur and the firm. In the 1850s around half of investors and firms entering Cleveland’s new iron industry had known Quaker links, and even though this effect declined over the following two decades, there was still a significant number of new firms, over 30 per cent in the 1860s and 1870s, with Quaker connections.

Table 3: Investors’ characteristics in the Cleveland iron industry, 1850-79

<table>
<thead>
<tr>
<th></th>
<th>1850-59</th>
<th>1860-69</th>
<th>1870-79</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>32</td>
<td>49</td>
<td>45</td>
</tr>
<tr>
<td>Quaker link</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quaker family</td>
<td>4</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Railway</td>
<td>4</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Finance</td>
<td>2</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Multiple</td>
<td>6</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Total Quaker</td>
<td>16 (50%)</td>
<td>12 (24%)</td>
<td>9 (20%)</td>
</tr>
<tr>
<td>Non-Quaker</td>
<td>6</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Unknown</td>
<td>8</td>
<td>31</td>
<td>25</td>
</tr>
<tr>
<td>Memo item</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previously in iron/ engineering</td>
<td>17 (53%)</td>
<td>13 (27%)</td>
<td>18 (40%)</td>
</tr>
</tbody>
</table>
Table 4: Firms’ characteristics in the Cleveland iron industry, 1850-79

<table>
<thead>
<tr>
<th></th>
<th>1850-59</th>
<th>1860-69</th>
<th>1870-79</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>26</td>
<td>43</td>
<td>47</td>
<td>116</td>
</tr>
<tr>
<td><strong>Quaker link</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quaker family</td>
<td>9</td>
<td>14</td>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>Railway</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Quaker finance</td>
<td>9</td>
<td>11</td>
<td>11</td>
<td>31</td>
</tr>
<tr>
<td>Multiple</td>
<td>7</td>
<td>9</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total Quaker</strong></td>
<td>13</td>
<td>17</td>
<td>13</td>
<td>43</td>
</tr>
<tr>
<td><strong>Memo item</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previously in iron/engineering</td>
<td>21</td>
<td>23</td>
<td>33</td>
<td>77</td>
</tr>
</tbody>
</table>

The crucial point here is not that the development of Teesside or its industry was Quaker dominated; indeed, it was far from that. It is that, at least in the early period, the numbers and influence of Quaker-linked firms and entrepreneurs entering the industry were out of proportion to the size of the group, and were strategically important. The closely integrated and well coordinated local Quaker business interests, with extensive links to a wider network of potential entrants to the industry, were able to attract a significant number of entrepreneurs.

Apart from the Quaker connections, data on investors’ origins shows that there were three other relevant networks. First, there were the existing iron firms in the north-east, some of which were also linked to the coal industry (e.g. Bell Brothers and the Carlton Iron Company). Second, there was a national network of ironmasters, ironworks managers and engineers who were able to respond to opportunities and establish new businesses (e.g. Samuelson’s and Cochrane’s). Third, as the industry developed, there was a growing business community in Cleveland, the members of which encouraged the entry of new firms. Joseph Dodds, the Stockton solicitor and MP, appears to have played a leading role.

Networks and performance

In the absence of comparative data, it is not possible to measure directly how much the Quaker business network contributed to the cluster’s development. An alternative approach used in this study was to test this indirectly by comparing the business performance of individual firms; the underlying hypothesis is that firms connected to the network performed better than those that were not. Data limitations meant that the usual measures of performance – profits, turnover, output, employment – were not available. For this reason survival is used as a proxy. Table 5 shows the results of a logistical regression model in which the log odds of survival for 10 years are related to characteristics of iron and engineering firms established in the Cleveland district between 1840 and 1879. Apart from ‘Time’, all the variables are binary. The ‘Quaker’ variable indicates that at least one partner was a Quaker or from a Quaker family; the ‘Finance’ variable indicates that the firm was financed by Quaker investors. The model includes control variables for size (large), previous industry experience, interests in other Cleveland firms and sector dummies to distinguish specialist wrought iron, diversified and engineering firms from pig iron producers (base group).

All specifications show that being a member of the Quaker network had marked and statistically significant effects, increasing the odds of survival; this was also the case for Quaker financed and larger firms. Having interests in other firms reduced the odds. Taking equation 4 as an example, other things equal, the odds of survival were five times higher for Quaker firms, four times higher for Quaker-financed firms, five times higher for large businesses, and 70 per cent greater for firms whose investors did not have interests in other businesses (Table 6). The relatively poor statistical performance of the model means that the results should be seen as suggestive rather than as accurate measures of the effect of network membership on survival. Nevertheless, on the assumption that longer-lived firms make a
greater contribution growth, there is sufficient consistency to conclude that the results are indicative of the importance of the Quaker network.

Conclusions

This paper has suggested that business networks are important for understanding Cleveland’s development. It was through these networks that information about potential investments was transmitted and the resources made available. In the clustering process the networks acted as routes through which incentives to set up new firms and extend existing ones were channelled. There were powerful reasons for the infrastructure owners and early industry entrants to encourage new iron processing and using firms. And from the viewpoint of new investors, the incentive was not simply that there was a new source of an important input. The district offered opportunities to develop new activities out of the existing ones, and as the cluster of firms grew and the infrastructure expanded, then so too did the profitable opportunities. The availability of other inputs such as finance, technical expertise and marketing – the institutional infrastructure of the district – was also crucial (Allen, 1983). Institutions that developed alongside the industry augmented the networks, extending their scope, and intensifying the ties and interdependencies between the firms. Particularly relevant are the Cleveland Iron Masters Association (1866), the Cleveland Institution of Engineers (1864) and an iron market at the Middlesbrough Exchange (1868). This last is marked by the growth in the number of iron merchants in Middlesbrough, whose numbers reached 24 firms by 1871.

Finally, as Arthur (1989), David and Rosenbloom (1990) and Krugman (1991) have shown, because of the benefits of agglomeration economies, historical events can have lasting effects on clusters. Their development is not necessarily determined by ‘natural’ geographical factors. The choices of entrepreneurs involved in setting up the original businesses in the industry can be crucial, and these are influenced by the networks to which they belonged. Cleveland is, perhaps, an example of this process, though at first sight, not an obvious one.

Table 5: Coefficients for logistical regression models

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quaker</td>
<td>1.816***</td>
<td>1.551**</td>
<td>1.697**</td>
<td>1.619**</td>
<td>2.129***</td>
</tr>
<tr>
<td>Quaker Finance</td>
<td>1.839**</td>
<td>1.411*</td>
<td>1.401*</td>
<td>1.430*</td>
<td></td>
</tr>
<tr>
<td>Other interests</td>
<td>-1.313*</td>
<td>-1.157**</td>
<td>-1.287**</td>
<td>-1.25**</td>
<td>-1.011*</td>
</tr>
<tr>
<td>Size</td>
<td>2.388**</td>
<td>1.348</td>
<td>1.647*</td>
<td>1.630*</td>
<td>1.44*</td>
</tr>
<tr>
<td>Experience</td>
<td>-0.020</td>
<td></td>
<td>0.317</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time†</td>
<td>-0.004</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrought</td>
<td>0.092</td>
<td>-0.600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversified</td>
<td>-1.344</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>20.709</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 LL</td>
<td>84.905</td>
<td>99.316</td>
<td>100.394</td>
<td>100.683</td>
<td>104.743</td>
</tr>
<tr>
<td>R² Nagelkerke</td>
<td>0.407</td>
<td>0.249</td>
<td>0.360</td>
<td>0.232</td>
<td>0.183</td>
</tr>
<tr>
<td>H-L Chi²</td>
<td>8.366</td>
<td>3.032</td>
<td>5.197</td>
<td>1.214</td>
<td>2.236</td>
</tr>
<tr>
<td>(df/sig)</td>
<td>8/0.399</td>
<td>7/0.882</td>
<td>7/0.636</td>
<td>5/0.944</td>
<td>4/0.692</td>
</tr>
</tbody>
</table>

(p values: *** p<0.01; ** p<0.05; * p<0.10. † Time = Date firm established - 1840)
Table 6: Survival odds (Model 4)

<table>
<thead>
<tr>
<th></th>
<th>Odds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quaker</td>
<td>5.050</td>
</tr>
<tr>
<td>Quaker Finance</td>
<td>4.179</td>
</tr>
<tr>
<td>Other interests</td>
<td>0.286</td>
</tr>
<tr>
<td>Size (large firm)</td>
<td>5.105</td>
</tr>
</tbody>
</table>

(Note: odds = $e^b$, where $b$ is the coefficient from Table 5)

Bibliography


Coase, R.H. (1937), ‘The nature of the firm’, *Economica*, IV.


Primary sources

Teesside Archives: Engineering, Iron and Steel Records; British Steel Collection.
Christian Socialism, economic discourse, and the ‘conversion of the economists’ 1880-1914

Daniel Budden, Swansea University
(d.budden@swansea.ac.uk)
Supervisor: Professor Noel Thompson

Christian Socialism emerged in 1848 in order to Christianize the Chartist movement. Later it focused on challenging Christianity’s efforts to reconcile itself with the rationalizing, wealth-maximizing principles of economic man. Nineteenth-century moral orthodoxy had emphasized the invisible hand of the market whilst maintaining that ‘ye have the poor always with you’. Christian Socialism highlighted the concern expressed by Jesus and the Sacraments for mankind’s material condition and, by the turn of the century, the movement aimed to deliver material as well as spiritual salvation to the disadvantaged. To this end at least nine Anglican and non-denominational Christian Socialist organizations were founded between 1877 and 1918, each differing in scale, tone, and methods.

Though it has lucidly recounted the story of Christian Socialism, in terms of intellectual history the historiography has tended to concentrate on the movement’s theology rather than its economics. The Christian Socialists made little if any contribution to contemporary economic science. However, the importance of knowledge and of intellectual cultures within the history of economics has been emphasized by Daunton, Tabb, Kadish and Tribe, as well as an ongoing multidisciplinary research project at the London School of Economics. Meanwhile scholars such as Hilton, Bateman, Banzhaf, and Waterman have examined the relationship between religious thought and political economy in the long nineteenth century.

It is important, then, to consider the Christian Socialists’ role in promulgating certain strands of economic theory. This paper aims to show that Christian Socialism was more responsive to developments in secular economic theory than has been hitherto contended. Many wider histories have recognized the official constitutions upon which the Christian Socialist organizations were founded. But while these planks reflected the interests of the movement’s leading figures, they can be misrepresentative of the organizations’ membership bodies which were typically fluid, diverse, and overlapping. Therefore, this paper engages more closely with the wide range of pamphlets, treatises, tracts, and periodicals produced by the movement, including the Christian Social Union’s (CSU) Economic Review, the first British periodical dedicated solely to economic thought. Moreover, unlike much existing historiography, my research examines Christian Socialist thought not in terms of its leaders’ theories, but as it was espoused by its leading theorists.

http://www.lse.ac.uk/collections/economicHistory/Research/facts/Default.htm


279 The importance of these kinds of sources to historical enquiry has been highlighted by a recent JISC project which concluded that nineteenth-century pamphlets were ‘a valuable but underused primary resource’. JISC Website ‘19th Century Pamphlets Online’.
http://www.jisc.ac.uk/whatwedo/programmes/digitisation/pamphlets.aspx
The effectiveness of this methodology can be illustrated by the Christian Socialists’ attitudes as regards the study of economics. Percy Dearmer, the secretary of the CSU London branch (1891-1912), wrote in a Fabian tract that ‘if our Lord had taught economics, instead of religion ... He would never have led the world to brotherhood at all’. However, C.W. Stubbs, H.S. Holland, and W. Richmond, three widely-published CSU members, all believed it was the ‘duty’ of the clergy to know and study the laws of political economy. Many Christian Socialists agreed, and the result was the publication of a body of literature that considered ‘Economic Morals from the point of view of Christian teaching’. The intellectual sophistication of these works varied: from the CSU’s largely technical Economic Review (1891-1914), reliant on contributions from figures such as Cunningham, the Webbs, J.A. Hobson, W.J. Ashley, and Tawney; through more accessible texts like the CSU Handbooks; to the ‘plain words’ of J.C. Kenworthy’s The Anatomy of Misery.

Though Christian Socialist treatises were often lacking in clarity and consistency, their significance lies in the historical context of their publication. The Christian Socialists were not trained economists but radical clergymen attempting to understand, incorporate, and disseminate the teachings of a science that was itself in transition. In doing so, they went further than many of their secular socialist peers whose doctrines were, some argue, based upon ‘limited’ or ‘dogmatic’ interpretations of economics. Indeed, as A.J. Carlyle (one of only a few Christian Socialist economists) argued, there was a ‘good deal of confusion’ as regards popular understanding of economics; capitalist employers in particular saw only the ‘superficial facts’, not the underlying theory, and as such were ‘ignorant of their own interests’. Therefore an examination of Christian Socialist efforts to popularize economic theory can reveal much about the nature of political economy and popular discourse in the period.

Here, space permits only a brief consideration of Christian Socialist theories of value. While most Christian Socialists had strong convictions regarding the most valuable items to humanity’s welfare, few seriously believed that use-value had the most bearing upon market prices. They were less ready, however, to embrace a political economy which championed ‘supply and demand’ as the determining forces. While it was one thing to attribute temporary market prices to these forces, it was quite another to buy into a discourse which, in its disregard for the importance of human agency, carried connotations of the hated ‘Iron Laws’ of political economy. The language of ‘supply and demand’ echoed the maxims used to justify the exploitation and degradation of labour; it spoke in the reprehensible tone of the defenders of laissez-faire. Thus the Christian Socialist magazine The Commonwealth

285 Carlyle, Wages, pp.27, 32, 52-54.
frequently declared that ‘the doctrine of supply and demand’ should be rejected in favour of ‘a more humane doctrine’.  

For many Christian Socialists, including C.L. Marson, Kenworthy, and J. Bruce Wallace, labour cost theory represented a more attractive explanation. It had strong socialist advocates in Marx and Laurence Gronlund, it provided a scientific account of working-class exploitation and the methods required to prevent it, and most importantly, it was relatively simple to understand. However, that the Christian Socialist magazines The Optimist and the Church Socialist Quarterly felt obliged to defend the ‘controversial’ labour cost theory against ‘utility’ in 1908-9 reveals much about the eclecticism of Christian Socialist thought. Labour cost theory had already been denounced by Ruskin and the Christian Socialist M. Kaufmann, but although Richmond and others frequently referenced Jevons, and despite the replication in the Christian Socialist periodicals of Wicksteed’s defence of Jevonian theory, a marginal utility theory of value was not widely embraced by the Christian Socialists. Nonetheless, they were encouraged by the idea that ‘estimates’ could affect prices and this underpinned their attempts to moralize the market through schemes such as the ‘White Lists’ (a localized precursor to the Fair Trade movement). Though their understanding of Jevons was limited, the discourse of utility which gave the Christian Socialists faith that not only would their schemes succeed where the cooperative ventures of their predecessors had failed, but that by doing so, the laws of political economy would be rewritten.

Indeed, much Christian Socialist thought was focused upon the nature, scope, and method of political economy. Echoing Ruskin, Richmond argued that so-called economic man could ‘not help carrying with him into his economic life something of the unselfish profession which belongs to the other spheres of his existence’. And like Ruskin’s image of ‘a science of gymnastics which assumed that men had no skeletons’, Girdlestone argued that a political economy which ignored man’s myriad motivations was ‘as valueless ... [as a] Theory of Geometry which, when applied to the practice of Land Surveying led only to confusion and mistake’. But like many Christian Socialists, Girdlestone was aware of the classical tradition’s qualification that ‘it is only through the principle of Competition that Political Economy has any pretension to the character of a science’.  

It was here that the influence of Alfred Marshall was most strongly felt. The Christian Socialists believed that his work, but more importantly the intellectual authority he commanded from his position as Professor of Political Economy at Cambridge, had injected into their economics a much needed degree of legitimacy and credibility. According to the Christian Socialist James Adderley, it was Marshall who had ‘put the economic man in his right place’. Thus Girdlestone invited his opponents to look ‘to one of their own classics’, namely Economics of Industry, in which Marshall had warned economists against ‘the error of regarding the present experience of mankind as of universal validity ... [and] having no faith in the Wonderful pliability of the human mind’. And as Richmond maintained, Marshall had emphasized the need for economic science to ‘recognize moral forces at work in the material with which it deals’.  

290 Richmond, Economic Morals, 103.
293 Girdlestone, Christian Socialism versus Present-day Unsocialism, p.122.
The Christian Socialists argued that Marshall had vindicated their belief that normative principles should not be based upon positive economic laws. Quoting *Economics of Industry* directly, Adderley argued in 1896 that ‘normal action is not always morally right; very often it is action, which we should use our utmost efforts to stop’. And, Adderley continued, Marshall’s *Principles of Economics* said that exploitation of labour was only ‘normal in the same way that a contortion of the limbs is a normal result of taking strychnine. It is one result, a deplorable result, of those tendencies the laws of which we have to study’.\(^{295}\) For Adderley, the discredited normative principles of political economy had only survived due to the efforts of, in Marshall’s words, the ‘hangers on of the science, who … used it simply as an engine for keeping the working classes in their places’.\(^{296}\) Others agreed that political economy had been used as a means of exercising class control; the working classes for whom Kenworthy wrote his treatises had, he argued, been kept from the truth by ‘Class-politicians and class-teachers’.\(^{297}\)

However, the Christian Socialists believed that this moral and intellectual hegemony was at an end. As Stubbs wrote in 1890, ‘the age of Individualism, that is, the morals of Adam Smith are coming to an end … [and] the modern school of economists are beginning to suspect that egoism is not the safest foundation for the practical life of men’.\(^{298}\) Three years later he declared that the ‘old-fashioned Manchester School of competition and its devil-take-the-hindmost theory of industrial organization’ had lost its authority.\(^{299}\) In the same year John Carter, the editor of *Economic Review*, wrote that ‘it is now generally admitted that the “economic man” is a pure abstraction, and therefore that the motives and conduct ascribed to this phantom have no moral authority over men endowed with reason and conscience’.\(^{300}\)

In the late 1890s the Christian Socialists often claimed that the newer schools of political economy had verified the social teaching of John Ruskin and William Morris.\(^{301}\) But more importantly they began to echo Adderley, who argued that economic science had come to espouse Christian Socialism. He evinced the following passages:

1. Economic Laws are generalizations from the observation of the conduct of average men at particular times and places under a particular aspect. Such ‘Laws’ declare what actually is not what ought to be: they convey limited information, and not either moral judgements or commands: we must therefore take account of them, but not necessarily accept them as determining our action.

2. An Economic Law is a statement that a certain course of action may be expected under certain conditions from the members of an industrial group … It is not the function of any science to lay down practical precepts or to prescribe rules of life. Economic laws are merely statements of tendencies expressed in the Indicative mood and not ethical precepts in the Imperative.\(^{302}\)

That the words of the Christian Socialist Brooke Foss Westcott (paragraph one) had been echoed almost verbatim by Marshall (paragraph two) was proof, Adderley argued, that mainstream economics had realized the truth of Christian Socialism. Thus in 1905 could Carter proclaim that ‘professional economists have … not only recognized far more explicitly the strict limitations of the abstract science of political economy, but also … they are more or


\(^{296}\) Adderley, *Parson in Socialism*.


\(^{299}\) Stubbs, *For Christ and City!*, p.249.


less in accord with the principles of Christian socialism'. Three years later Holland claimed that ‘we are all learning, at least, that Political Economy emphasizes the bond of Brotherhood and looks to an end that is socially and morally desirable’. And in 1910 Adderley noted that it was ‘not only a hysterical clergymen, but the President of the Economic Section at the Annual Meeting of the British Association, who can say publicly (and expect general acquiescence) that “the orthodox economics of the middle of the nineteenth century has for some time been quite dead”’.

To conclude, the Christian Socialists were fond of echoing the words of Toynbee, who had claimed that ‘the bitter argument between economists and human beings has ended in the conversion of the economists’; however, from the turn of the century it was the Christian Socialists who believed that political economy did not necessarily support normative principles of exploitation, and who no longer regarded it to be outside their interests nor, like William Morris, to be ‘dreary rubbish’, but instead considered economics to be an important and necessary foundation to their socialism. Thus it can be argued that the Christian Socialists underwent a conversion of their own.

305 Adderley, Parson in Socialism, p.168.
Institutions, sovereign risk and taxation: international financial control in the Ottoman Empire, Greece and Egypt

Ali Coşkun Tunçer, London School of Economics
(a.c.tuncer@lse.ac.uk)
Supervisors: Professor Colin M Lewis & Dr Max-Stephan Schulze

Introduction
A fundamental characteristic of the classical gold standard era (1880-1914) was sustained capital flows from core countries to the peripheries in the form of sovereign debt. By the last quarter of the nineteenth century, due to heavy borrowing, several countries encountered difficulties servicing their debt. As a result, many heavily indebted borrowers declared moratoria, which provoked new kinds of sanctions by creditors. One of the sanctions imposed on debtor countries was the formation of international financial control (IFC) organizations. These were administered by representatives of the foreign bondholders. IFCs were assigned the task of administering and collecting specific taxes, often those assigned to service particular loans. In some cases, IFCs implemented monetary and fiscal reforms in debtor countries – in effect, implementing institutional change. Although, in general IFCs meant a partial loss of fiscal sovereignty, they undertook different roles in each country, depending on the local institutional framework.

This paper, by relying on the cases of the Ottoman Empire, Greece and Egypt, discusses the role of IFCs in determining sovereign risk of each country. Since the seminal text of North and Weingast, the discussion on the determinants of sovereign risk has gained pace in the literature. North and Weingast specifically emphasize the importance of political institutions that emerged endogenously. A parallel literature, with specific reference to peripheral countries, discusses the role of transplanted legal financial institutions. The main aim of this paper is to discuss the same question in the context of fiscal institutions – i.e. a set of rules that regulates state revenues and expenditure in a country. More specifically, it focuses on a unique example of ‘institutional transplant’ which occurred during the late nineteenth century in the three biggest debtor countries of Southeast Europe and Middle East. By relying on an econometric analysis of primary historical data, this study concludes that IFCs administered by creditor representatives had a positive impact on sovereign risk. The paper is organized as follows: Section 2 presents the process of accumulated debts which led to moratoria in the Ottoman Empire, Greece, and Egypt. Section 3 analyses bond spreads, showing how IFCs served as a commitment mechanism to reduce the cost of borrowing. Finally, the last section offers some concluding remarks.

From moratoria to international financial control
The Ottoman government began to sell long-term bonds in the European financial markets in 1854, contracted with such underwriters as the Imperial Ottoman Bank, Dent Palmer, Crédit Mobilier, and Comptoir d’Escompte. These loans had been secured on several direct and

indirect tax revenues, and custom duties. By the second half of the 1860s, due to continuous budget deficits, the government was in need of new loans in order to maintain debt repayments: from 1863, an increasing spiral of borrowing began. A moratorium was in sight but the financial markets kept the process going because of the high rates of return. However, following the 1873 European financial crisis, the Ottoman government declared a moratorium on all outstanding debt in 1876, which stood at around £200 million. After prolonged negotiations, in December 1881, the Decree of Muḥarram was signed between bondholder representatives and the government. According to the decree, the outstanding debt of the empire was reduced from about £191 million to £96 million, and unpaid interest payments, which amounted to £62 million, were reduced to approximately £10 million. In return, a council of administration (the Ottoman Public Debt Administration [OPDA]) was established to represent the bondholders and act in their interest. The government agreed to transfer to the OPDA revenues from the tobacco and salt monopolies, several custom duties and the silk tithe of several provinces. The OPDA had the legal right to adjust the level of these revenues and taxes, all the revenue from which was to be devoted to the payment of interest and sinking fund of the Ottoman debt. 311

<table>
<thead>
<tr>
<th></th>
<th>The Ottoman Empire</th>
<th>Greece</th>
<th>Egypt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1854-1876</td>
<td>1879-1914</td>
<td>1862-1876</td>
</tr>
<tr>
<td>Number of Contracted Loans</td>
<td>15</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Total Nominal Value (Millions of £)</td>
<td>216</td>
<td>146</td>
<td>68</td>
</tr>
<tr>
<td>Average Effective Interest Rate (%)</td>
<td>7.9</td>
<td>4.9</td>
<td>8.5</td>
</tr>
<tr>
<td>Debt per capita (£)</td>
<td>8.1</td>
<td>5.8</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Egypt, despite being a semi-autonomous province, was de jure part of the Ottoman Empire until 1914. By a decree issued by the Porte in 1841, it did not have the right to secure public loans without first getting permission from the Ottoman government. In 1858, under fiscal pressure, the Egyptian Khedive resorted to the issue of treasury bonds. The next two years saw a large increase in the number of bonds issued, but the government soon had to turn to other forms of borrowing. In 1860, to fulfill the obligations to the Suez Canal, the government borrowed 28 million francs, and after 1863 Egypt entered into a rapidly increasing foreign borrowing process, contracting loans with underwriters such as Goschen and Oppenheim. In 1873, in an attempt to consolidate the floating external debt, a loan of 32 million pounds was contracted. Thus, from 1862 to 1873, Egypt contracted external debts amounting almost £70 millions (See Table 1). The 1873 crisis and Ottoman moratorium had an immediate negative effect on Egyptian credit. In April 1876, all debt amortization and interest payments were suspended. This failure led to the decree of May 1876, by which another IFC was

313 Crouchley (1938: pp.119-121).
established, *The Caisse de la Dette Publique*. Taxes from specific Egyptian provinces and Cairo and Alexandria, the salt and tobacco taxes along with customs revenues were assigned to the *Caisse* in order to service various public loans. The Egyptian government committed itself neither to modify these revenues nor to contract any new loans without the consent of the commission. With the decree of November 1876, IFC was declared permanent until the complete redemption of the debt.

The history of Greek sovereign borrowing started with the independence loans of 1824 and 1825, amounting to £2.8 million in total. However, the Greek state did not have enough resources to service the debt and in a short time suspended interest payments. An agreement between the Greek government and representatives of bondholders was finally concluded in September 1878, which was followed by an era of rapid debt expansion. After the 1878 settlement, Greece contracted nine external loans totaling £26 million (See Table 1), most underwritten by the big French deposit banks, the Comptoir National d’Escompte, the Société Générale and the Crédit Lyonnais, and Hambros of London, who acted as intermediaries between potential lenders and the Greek government. Greece was a monocultural economy, mostly relying on currant exports. In 1893, currant prices started collapsing in European markets and because of the worsening conditions in the Greek economy, the government contracted a new loan with Hambros. However, this loan was not enough to stop a default: at the end of the year, the government declared a moratorium.

In 1898, Greece reached an agreement with representatives of foreign creditors, signing the *Law of Control*. According to the agreement, the government consented to the foundation of the Committee for Greek Debt Management (GDM), which would be responsible for the collection of revenues from monopolies (salt, petroleum, matches, playing cards, and cigarette paper) and dues of the Piraeus custom-house.

**International financial control ‘as a commitment mechanism’**

This section argues that IFCs restored the credibility of the Ottoman Empire, Greece and Egypt, thereby facilitating access to international financial markets in the long term. In order to assess the effect of IFCs on the sovereign risk of each country, following the convention in the literature, we focus on historical spread as the difference between yield-to-maturity of the Ottoman, Greek, and Egyptian bonds and 2.5 per cent UK consol yield. Figure 1 summarizes the results.

---

314 PP, 1876 [C.1484].
317 CFB (1913-14).
When the moratoria took place (1876 for the Ottoman Empire and Egypt, 1893 for Greece), spreads started fluctuating wildly: with the foundation of international financial control, spreads declined considerably. More important, for the rest of the period, spreads remained at low levels, suggesting that credibility was reinforced by IFCs. To make the analysis more formal, it is possible to identify structural breaks in the data by using modern econometric techniques. In this study, the approach of Bai and Perron (2003) is used to identify breaks in spread series. This is a data-driven method which allows for a multiple number of breaks, and does not include any prior assumption on the location of the breaks. The model determines the number and location of breaks by using a multiple linear regression with $m$ breaks:

$$y_t = x_t\beta + z_t\delta_j + u_t$$  \hspace{1cm} (1)

In the above equation (1), $y_t$ is the observed dependent variable at time $t$; $x_t$ ($p \times 1$) and $z_t$ ($q \times 1$) are vectors of covariates and $\beta$ and $\delta_j$ are the corresponding vectors of coefficients; $u_t$ is the disturbance at time $t$. The $m$ break points $T_1,...,T_m$ are treated as unknowns. The purpose is to estimate the unknown regression coefficients together with the break points when $T$ observations on $(y_t, x_t, z_t)$ are available. In analysis of the above-presented spread data, the maximum number of allowed breaks was limited to 5. Table 2 presents the locations of the breaks together with the confidence intervals and corresponding events for each case. The location of break dates strongly supports our argument regarding the important role of IFC in restoring credibility: sovereign risk reduced significantly. Although it is not possible to present OLS regression results in this paper, it can be argued that IFCs not only represented a break point in the sovereign risk, but also explain low levels of sovereign risk that prevailed until 1914.

---

319 Author’s calculations from Investors’ Monthly Manual (1869-1914). Yield-to-maturity of each bond for every month is weighted by the market capitalization rate. For the latter see fn. 312.

Conclusion

In traditional historiographies of each country, the foundation of the IFCs is assessed in the context of questions of imperialism. That is, the expansion of foreign capital into the Middle East and Southeast Europe and subsequent establishment of IFCs were part of a process, which reflected the penetration of European capitalism into the region. This idea was supported by the fact that financial actors were closely connected with the financial commissions administered by representatives of bondholders. For instance, Lord d’Abernon was Financial Adviser to the Government of Egypt from 1883 to 1889, and Governor of the Imperial Ottoman Bank from 1889 to 1897. Sir Vincent Caillard was British representative on the Ottoman Debt Council from 1883 to 1898, and in 1898 was appointed to the directorate of the National Bank of Egypt. These connections among issue banks, IFCs and local governments were seen as part of a ‘great plan of imperialism’.

On the other hand, as presented above, in each country the IFC administered certain tax revenues amounting to almost one fifth of total government revenue. By channelling these revenues to bondholders, the credibility of each country was reinforced throughout the period. Moreover, IFCs appear to have been efficiently managed, overseeing an increased yield in the taxes administered. For instance both the Ottoman and Greek Public Debt Administrations tripled the revenues, which they were responsible for managing.322

In some instances IFCs led to the establishment of sound fiscal and monetary institutions. For example, the Law of Control introduced sound monetary policy that would restrict the statutory loans in paper drachmas between Greek governments and the National Bank of Greece. In the post-IFC period, banknotes in circulation were steadily reduced, facilitating a transition to the gold-exchange standard. For Egypt, the passing of the Law of Liquidation (coupled with changes in the administration of the country) marked the end of a period of large-scale government borrowing.323 After 1880, large amounts of capital entered the country, this time in the form of private investments.324 Both in Egypt and the Ottoman Empire, the number of European banks increased considerably.

---

321 Significant at 5% level.
322 CFB (1898-1914).
323 PP, 1881 [C.2766].
324 A.M. El-Bey (1946) The Public Finances of Modern Egypt, 1876-1942, PhD thesis, University of London.
However, it is important to underline the fact the institutional change introduced by IFCs remained partial. Revenues assigned to IFCs were simply channelled to the bondholders to reinforce credibility, therefore each state benefited only indirectly and marginally from this situation. Adherence to the ‘gold standard’ occurred with its regional peculiarities. The Ottoman Empire and Egypt could never manage to redeem completely the silver coinage in circulation, and most of the domestic transactions kept relying on standard and sub-standard silver coins. Although formally being on gold standard, from 1885 to 1914, Greece was on gold only for six years. Therefore, throughout the period, all three countries remained at the periphery of international monetary order in terms of their monetary regime. Regarding the overall financial system, although during this period it is possible to see the proliferation of banks in each country, their role remained limited to earning commission and interest from loan contracts with the state, while banking for industrial investment was minor, with the exception of certain railway projects.

Overall, to conclude, as the institutional change introduced by the IFC was partial; the consequences on economic growth and financial development remained incomplete as well. It is plausible to assume that ‘for economic growth to occur the sovereign or government must not merely establish the relevant set of rights, but must make a credible commitment to them’. In the above-mentioned cases, a third party enforcement body monitored the ‘credible commitment’ and enforced the debt contracts. The major role of IFCs was to reduce uncertainty by establishing a stable structure for investors. This increased the available funds for the countries in question; hence they could borrow easily at low cost from international financial markets. However, in the end, there was not any institutional framework to channel these funds into productive economic activities, which could lead to growth and industrialization in the Ottoman Empire, Greece and Egypt.

A case-study of social inequality and consumption in the city of Alost, 1672-1750

Wouter Ryckbosch, University of Antwerp
(wouter.ryckbosch@ua.ac.be)
Supervisor: Dr Bruno Blondé

In the last couple of decades, the industrial revolution has been slowly discredited as the sudden and fundamental rupture between the immobile and poverty-stricken world of the pre-industrial economy and the modern age, characterized by continuous economic growth, that it was once believed to be.326 While pre-industrial economies were traditionally approached from a supply-side perspective, revisionist economic historians have increasingly stressed that it might actually have been the demand-side of the pre-industrial economy that was the locus of crucial change before the onset of industrialization. The subsequent evidence of a growing material culture and changing consumption patterns during (for instance) the ‘long eighteenth century’ has given rise to various theories on how this might have affected innovations in production, the division of labour and labour input per capita.327

According to the evidence provided by probate inventories, consumers in large parts of north-western Europe quickly embraced the introduction and wide distribution of new, exotic, goods such as coffee, tea, tobacco and sugar.328 At the same time many durable product types that for centuries had belonged to typical household inventories, such as pewter and copper tableware, were increasingly being replaced by less durable alternatives such as glass and earthenware or majolica. While the durability and intrinsic (resale) value of many household goods thus diminished, novelty and fashion became more and more important. The custom of buying durable consumer goods as a way of storing and saving household wealth or as an investment for subsequent generations, was gradually replaced by a growing concern for the new and fashionable.329 These changes in consumer behaviour and material culture were linked to different social practices and new forms of sociability, such as the semi-public activity of drinking coffee or tea at home. At the same time, this new ‘consumerism’ stimulated the growth of the urban retail sector, and might have led to crucial changes in the production side of the economy as well.

If this consumer transformation did indeed take place in large parts of western Europe during the ‘long eighteenth century’, and if it did indeed have important consequences for later economic development, then questions arise concerning how widespread this phenomenon was, and why it took place at all? In this debate, the precise nature of the relationship between changes in consumptive demand and the social structures of the time has remained remarkably elusive. The ‘long eighteenth century’ in western Europe has been variously described as the era of proletarianization and impoverishment by some, and as the time of rising middling groups by others. At least for the southern Low Countries, it is not quite clear whether any or both these characterizations of eighteenth century social structures would be close to historical reality, and how they would relate to changing consumer patterns and the growth of the retail sector.

The potential factors that determine consumptive dispositions and taste are, of course, many. By looking at the social and economic background of the newly emerging consumption patterns, the potential role of economic development and social inequalities in stimulating the introduction and diffusion of eighteenth century consumptive behaviour could probably be tested and explored. Can we discern patterns of social distinction that could have given rise to

new forms of taste and fashion, and to what extent were they related to habitus in the socio-economic field?\textsuperscript{330} Or did the eighteenth century witness the emergence of a mass market for consumption, blurring and obscuring social and economic relations and hierarchies?\textsuperscript{331} Was the eighteenth century the time in which 'common people' shifted their production patterns in order to fit their increasing desire for consumption, or was it a time of increasing hardship for the poor masses and rising conspicuous consumption by socio-economic elites? In other words: the central question that I ask is how the cultural changes in consumption patterns and taste were rooted in the social and economic life of pre-industrial society of the southern low countries.

In order to approach this research topic we have opted for a case-study of the middle-sized town of Alost, in inland Flanders in the period from 1670 to 1750. It was an era of stagnation and even decline for almost all cities in the southern Netherlands, and Alost did not escape this general trend. Although the city's population remained stable at approximately 8,000 inhabitants, the urban textile production (mostly linen) largely disappeared and was replaced by a growing concentration on the role of Alost as a distribution and market centre for the booming rural proto-industry in its surrounding countryside.\textsuperscript{332} Whether this economic reconversion went hand-in-hand with declining incomes \textit{per capita} is hard to say, but at the very least this was a period of economic stagnation rather than growth. By conducting a case-study into the interplay between socio-economic structures and changes in the consumption patterns of the citizens of Alost during a period of urban decline and subsequent revival, we hope to shed some light on the causes and social roots of social change during this period. As such, we hope to add a social framework to the existing theories on the various proclaimed industrious-, consumer- and retail revolutions of the long eighteenth century.

In this short paper I will consider only one aspect of material culture in seventeenth and eighteenth century Alost, namely the value of consumer durables. Information on the possession of such goods has been gathered from probate inventories. The inventories available for the \textit{intra muros} centre of Alost contain information on all real and moveable property and cover approximately 22 per cent of the deceased in the middle of the eighteenth century.\textsuperscript{333} The information concerning total probate wealth and the value of consumer goods for our two sample periods 1672-8 and 1745-9 have been summarized in table 1.

\textsuperscript{330} Bourdieu (1979).
\textsuperscript{331} Cf. the ‘Frankfurt school’.
\textsuperscript{332} Vermoesen (2008).
\textsuperscript{333} Municipal archives Alost, \textit{Oud Archief Aalst (OAA)}, nr. 112 and OAA, nrs. 1861-65.
Table 1: Total moveable wealth and consumer goods, Alost, 1672-8 and 1745-9

<table>
<thead>
<tr>
<th></th>
<th>Total moveable wealth (fl.)</th>
<th>Consumer goods (fl.)</th>
<th>Share of consumer goods in wealth (%)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>median</td>
<td>mean</td>
<td>median</td>
</tr>
<tr>
<td>1672-1678</td>
<td>3.758</td>
<td>1.170</td>
<td>558</td>
<td>268</td>
</tr>
<tr>
<td>all</td>
<td>2.428</td>
<td>684</td>
<td>510</td>
<td>225</td>
</tr>
<tr>
<td>representative sample (top 80%)</td>
<td>3.35</td>
<td>684</td>
<td>510</td>
<td>225</td>
</tr>
<tr>
<td>1745-1749</td>
<td>5.833</td>
<td>1.150</td>
<td>745</td>
<td>425</td>
</tr>
<tr>
<td>all</td>
<td>5.663</td>
<td>1.173</td>
<td>648</td>
<td>375</td>
</tr>
<tr>
<td>representative sample (top 80%)</td>
<td>5.663</td>
<td>1.173</td>
<td>648</td>
<td>375</td>
</tr>
</tbody>
</table>

Judging from the evolution of mean and median values, it seems that the value of consumer goods increased significantly between 1672 and 1745. This might not come as a surprise, given the simultaneous rise in the total value of moveable wealth in the inventories. Nevertheless, most research for large parts of England, North America and the Netherlands has come to quite a different conclusion, and has shown that the absolute value of probated consumer goods remained stable or even declined during this period. Even though the households of Alost do not seem to have followed this trend, the mean share of their total wealth taken up by consumer goods seems to have stabilized or declined, just as was the case elsewhere. These trends become even clearer when we take into account the fact that all inventory surveys suffer from a severe social bias. If we (partially) correct for the biases at play by linking the sampled probate inventories to tax records on the rental value of all houses within the city walls and taking the aggregate values per decile (from the third decile onwards), the representativeness of the results becomes more robust. The general conclusions however, remain the same: while the absolute value of consumer goods increased slightly between 1672-8 and 1745-9, their average share in total household wealth was reduced drastically (from 28 per cent to 11 per cent).

Several explanations have been offered to account for this apparent paradox between the supposed growth of consumerism on the one hand and the declining shares of consumer goods in total household wealth on the other. First of all, there is the obvious stock-flow problem when working with probate inventories. Since the early modern consumption changes were characterized by the speeding up of fashion cycles, diminishing durability of goods and a lower intrinsic or resale value, it might not be all that surprising to see the relative value of the stock of consumer goods decline, while the flow may well have increased.

In order to obtain a better understanding of how the early modern consumer culture was socially rooted, we have to go beyond the aggregate values presented in table 1 and stratify the sample of inventories. Since the social bias of inventory samples is rarely invariant over longer periods of time, it is recommendable for such an analysis to use external sources

---

334 The absolute values have not been deflated, as the possibility of error caused by deflating with the CPI’s available, such as that for Antwerp, seems much higher than the small margin of inflation that would be expected for this period. Sources in OAA, nrs. 1793-1798 and 1861-1865. If one were to use the Antwerp CPI to express the 1745 data in constant prices of 1672, the former numbers would have to be slightly elevated.

335 See text. The bottom two deciles have been excluded for the simple reason that not a single household from the lowest decile and only one from the second left a probate inventory.


of stratification. In this case, our stratification was provided by the fiscal records from the tax on the rental value of houses that were levied both in 1672 and 1745.

Table 2: Social breakdown of wealth and consumer goods over five equal shares of population, Alost, 1672-8, 1745-9

<table>
<thead>
<tr>
<th>Q</th>
<th>Total moveable wealth (in fl.)</th>
<th>Consumer goods (in fl.)</th>
<th>Share of C.G. in T.M.W. (%)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>median</td>
<td>mean</td>
<td>median</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>784</td>
<td>542</td>
<td>527</td>
<td>592</td>
</tr>
<tr>
<td>3</td>
<td>1.019</td>
<td>2.894</td>
<td>809</td>
<td>1.135</td>
</tr>
<tr>
<td>4</td>
<td>2.607</td>
<td>2.996</td>
<td>2.051</td>
<td>1.490</td>
</tr>
<tr>
<td>5</td>
<td>5.170</td>
<td>16.128</td>
<td>3.420</td>
<td>4.315</td>
</tr>
</tbody>
</table>

For the 80 per cent best-off households in Alost, table 2 shows the distribution of total moveable wealth and consumer goods over the different quintiles (20 per cent) of the city. The absolute increase of both the amount of total moveable wealth and of the value of consumer goods between 1672 and 1745 seems to have been distributed quite proportionately over the top four quintiles.338 Apart from quintile four, all quintiles experienced a proportionate absolute increase in wealth, which is consistent with the stability in income distributions suggested by the inequality of rental value of houses in both periods.339 The absolute value of consumer goods also went up in a remarkably proportionate way among the various social groups. This implies that if – despite the previously mentioned stock-flow problems – the absolute increase in the value of consumer goods signifies a change in consumption patterns, this change was not a matter of the upper strata only. Quite the contrary: it was especially the large urban masses between the poor and the rich (and especially the lower middling groups of quintiles 2 and 3) that expanded their possessions of consumer goods.

Despite this relatively equal increase in the absolute value of consumer goods, in relative terms clear Engel effects did not cease to be at play in both 1672-8 and 1745-9. In both periods the general rule remained that the richer a household was, the smaller the share of consumer goods in its total moveable wealth. This relationship between total moveable wealth and the total value of consumer goods possessed, can best be expressed using a double log regression (table 3). This implies that the value of consumer goods continued to rise with increasing wealth, but with a lower growth rate than that for wealth. Such a relationship has been coined the ‘putative modern consumer pattern’ by Carole Shammas and was found to be the best fit for similar studies of American and English inventories as well.340 Even though the strength of this relationship seems to have diminished somewhat during our second sample period, it nevertheless still provides the best fitting model for our data.

Table 3: Regression of wealth on the value of consumer goods, Alost, 1672-78, 1745-49

<table>
<thead>
<tr>
<th>N</th>
<th>Measure of fit (R²)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>linear semi-log double log</td>
</tr>
<tr>
<td>1672-1678</td>
<td>75</td>
</tr>
<tr>
<td>1745-1749</td>
<td>116</td>
</tr>
</tbody>
</table>

338 Given the small sample sizes that we are at this point restricted to and the danger of particular outliers at the top of the sample, it is advisable to look at the medians rather than in the means presented in table 2.

339 The inequality of the rental value of houses can be seen as a proxy standing somewhere in between income and wealth inequality. The Gini coefficient for 1672 is 0.493, while that for 1740 is 0.491.

Even though the pitfalls and dangers of carrying out a superficial analysis based on the total value of consumer goods recorded in probate inventories are many, it does provide at least some preliminary conclusions. First of all, it has been shown that the absolute value of consumer goods in Alost increased throughout a time of urban de-industrialization, rural proto-industrialization and general economic stagnation. At the same time, however, the relative share of consumer goods in the total volume of wealth accumulated by households remained the same or even declined. This should not automatically lead us to discredit any notion of a widespread change in consumptive behaviour, as this finding might be the result of the stock-flow problems typical for probate inventory studies. A social breakdown of the value of consumer goods at death, again stresses the continuity between the third quarter of the seventeenth century and the middle of the eighteenth century, as the absolute increase in consumer goods was distributed more or less equally among the top 80 per cent of society. The nature of the statistical relationship between the possession of consumption goods and the total amount of moveable wealth remained the same as well in both sample periods. If stock-flow problems can be overcome by more detailed analysis of specific types of goods, it remains to be seen whether the impression of seventeenth and eighteenth century consumption change as a very gradual and socially indistinctive phenomenon will hold.

References
In 1796, John Guy asked, ‘From the different quarters of the globe, we are supplied with innumerable productions and fruits: Can you partake of them without the least curiosity to enquire from whence they came, or how they are produced, prepared and preserved?’ As a range of objects began to enter and colonize the houses of the upper and middling portions of society, questions about their origin, and their making, began to arouse interest. Factory tours, manuals, and articles all emerged in response. Although originally conceived as aiding artisans and workers, it was through these representations that curious, genteel contemporaries could glimpse inside the manufacturing world that increasingly surrounded them. If, as Harris and Mokyr argue, texts and illustrations provided only a limited means of transmitting knowledge between trained individuals, how successful were they in providing wider contemporary audiences with an understanding of manufacturing techniques?

Through a close reading of the representations of ceramic production found in a series of eighteenth-century texts and in industrial tours, this paper explores the terms in which manufacturing techniques were presented to contemporaries. It concedes that, just as with trained individuals, manuals and industrial tours rarely provided the wider populace with a deep insight into the inherent complexities of production. As Berg has argued, these printed forms were as much about commercialization as codification. They were desirable possessions, forwarding the organization of knowledge as an aesthetic, rather than creating a genuine addition to the epistemic base. Moreover, the tacit nature of technique would always remain at one remove. Yet despite making allowances for these difficulties, this paper goes on to argue that the representations found in manuals and on factory visits did allow contemporaries to gain an understanding that, rather than alienating, was both useful and empowering.

**Reading manuals**

Although porcelain burial theories were ousted in 1588 by the translation of Gonzales de Mendoza’s tract on China, new knowledge about porcelain production was slow to disseminate. As Postlethwayt stated in the 1750s, ‘It is said in Europe, that porcelain must be long buried in the earth before it arrives at its perfection. This is a false opinion, at which the Chinese laugh’. In 1709, Johann Friedrich Böttger’s discovery of hard-paste porcelain ensured that the Europeans began to have their own claims on ceramic production knowledge. Yet, as the articles found in eighteenth-century manuals demonstrate, it was Chinese production processes that captured the public imagination and it was perhaps the letters written by the Jesuit missionary Père D’Entrecolle in 1712 and 1722 that did most to illuminate how the Chinese manufactured such a precocious number of desirable objects. By the second half of the eighteenth century the knowledge contained in these letters began to

---

341 John Guy, Miscellaneous Selections: Or the Rudiments of Useful Knowledge from the First Authorities (Bristol, 1796), p.v. <Eighteenth Century Collections Online> (8 February 2009).
disseminate more widely through various publications, where it was explicitly cited as a source.346

Writers employed D’Entrécolle’s letters to discuss various aspects of porcelain manufacture in the ceramics city of Jingdezhen. The similarity of the accounts suggests that the writers largely used the description verbatim. The letters provided a detailed description of the different processes involved, including the lengthy preparation of materials, and the techniques for forming vessels, firing, and decoration. Yet as Sennett argues, written accounts of techniques are largely meaningless if they contain no reference points for readers.347 The writers themselves appear aware of the distance between the Chinese case and their readers’ own experiences and include cultural references given by D’Entrécolle to ease the comprehension process. For instance, Thomas Mortimer described how ‘The mines whence the kaolin is dug are deep, and the matter is found in glebes, like the chalk in ours’.348 Similarly, in the New Complete Dictionary, Erasmus Middleton asserted that the porcelain painters ‘are all sorry workmen’ and ‘the greatest Masters are not to be compared to Apprentices among the Europeans’.349 These moments of insight are, however, rare and with few reference points to guide readers, the imagined workings of Jingdezhen must have remained hazy for contemporary readers.

With no experience of the processes D’Entrécolle described, writers were largely unable to guide their readers and by readily reproducing the letters, they took little responsibility for the understanding that readers could or could not gain. Moreover, as the writers acknowledged, with no experience the readers themselves were also severely restricted. As Richard Rolt argued in his A New Dictionary of Trade and Commerce, ‘it must be remembered, that manual operations are scarce to be conveyed by any words to him that has not seen them’.350 This ‘other’ world was depicted, but remained largely unknown.

The limitations apparent in these articles become clearer when compared to those discussing domestic production techniques such as ‘pottery’. Although these depictions are also rather loose and imaginary, writers do appear more willing to invoke reference points designed to guide the reader. They particularly include references to bodily action in order to allow readers to empathize with the process at hand. For instance, in a section entitled ‘Of the Potter’, Robert Campbell highlights the inherent physicality of the work undertaken by a potter. He points to the foot as it turns the wheel, and the finger and thumb by which the vessel is formed.351 Similarly, Mortimer also describes the role of the potter in particularly physical terms. To form the vessel, the potter uses his ‘knuckles’ or his ‘finger and thumb’ whilst ‘his foot’ works the wheel. The bodily interaction represented as inherent within pottery work provided the reader with a set of reference points – feet, hands, fingers – through which they could register certain movements and empathize with them. Yet, as with the Chinese examples, the extent of that empathy is always clearly demarcated. The reader is essentially encouraged more as spectator than actor.

In Campbell’s account the reader follows the actions of an unnamed potter. Similarly in Mortimer’s text the potter remains viewed at a distance. For instance, he describes how ‘The artist sits before the bench’.352 Although the reader is encouraged to understand the

348 Mortimer, A New and Complete Dictionary, IN. 909.
352 Mortimer, A New and Complete Dictionary, IN. 921.
movements that the potter goes through, it is made clear that another is undertaking those movements. By providing details and cultural reference points the texts allow the reader to empathize with the processes they are trying to understand. Simultaneously, however, they keep the reader at a distance – viewing rather than experiencing. The restrictions inherent in the depictions offered by dictionaries were apparent to more than just their writers and thus other forms of representation supplied different means by which contemporaries could sate their curiosity about production.

Industrial tours
By the second half of the eighteenth century increasing numbers of British travellers sought out first-hand experience of industrial sites. The growth in domestic tourism was in large part due to advances in road and communication infrastructure, allowing travellers to cover greater distances in less time. Some of the destinations housing these tours were more curious and dangerous than others. Entering mines, for example, often involved strapping oneself to a bucket and slowly descending. In contrast, visits to earthenware and porcelain manufactories appear tame. Yet long lines of travellers and tourists included them on their lists of curiosities to be visited.

One such visitor was Mrs Philip Lybbe Powys of Hardwick House, Oxfordshire, who arrived at the Worcester Porcelain factory on 28 August 1771. Although it appears that Powys had not toured a ceramic factory prior to her visit to Worcester, she was a keen connoisseur of earthenware and porcelain objects. Going from room to room of the factory, it is the process of forming objects that particularly catches Powys’ attention. She observes how in the third room ‘the cakes work’d up like a paste, and form’s by the eye only into cups, mugs, basons [sic], tea-pots’. She is amazed at the freeness with which the potters work, using ‘the eye only’. For Powys, ‘their ingenuity and quickness’ is a cause for genuine surprise and marvel. She seems almost at a loss in describing what she sees and states that their skill in forming vessels ‘appears like magic’. Similarly, following his visit to the Swansea Pottery in the summer of 1791, Daniel Clarke recounted the different stages of the ceramic production process. Despite the intricate composition of the clay, the brutal heat of the kilns and the dexterity of the painters, Clarke, like Powys, chiefly took notice of the skills of the potter in forming vessels. More specifically, what catches Clarke’s eye is the ‘surprising quickness’ with which the potters form ‘the different articles of their manufactory’. As the potters move from producing one shape to another, Clarke is left to look on in wonder.

When viewing the potters in action, using their hands to create various shapes, contemporaries seem unable to clearly articulate what they saw and instead relied on expressing surprise and wonder. The anthropologist Alfred Gell has argued that if a person is unable to mentally encompass the ‘coming-into-being’ of an object because the technical process ‘transcends’ their understanding, then they will be forced to construe it as ‘magical’. Gell explores this as a facet of the process through which art objects are perceived as awe-worthy. Yet his reading of how people understand making also speaks to the

356 Ibid., *Passages from the Diaries of Mrs Philip Lybbe Powys*, p.125.
357 Ibid. p.125.
358 Ibid. p.125.
experiences of Powys and Clarke. When faced directly with the ‘how’ of making they falter. Seeing an action performed before them they appear incapable of articulating what it is they are seeing. In these instances, tacit knowledge remains hidden and thus the ‘coming-into-being’ is construed as ‘magical’ – the process has transcended their understanding.

In light of Gell’s claim, the reaction expressed by Powys and Clarke perhaps suggests alienation from the process. But although these expressions of awe might imply little understanding of the intricacies of ceramic production, what is more interesting is the point at which awe is expressed – when the potter’s hands are in motion. Although at this moment they declare wonder, they have clearly managed to pinpoint an important action. What is more, they have been able to articulate that moment in some way. They have been left with a mental image of the process. Thus although they have not achieved understanding they have managed to acquire a visual image, or guide to the processes involved – they have achieved comprehension.

The extent of this comprehension can be fully realized if we consider their full response. In a similar fashion to other travel guides and the dictionaries previously discussed, Powys and Clarke listed the different stages of the production process. In the first room, Powys notices ‘a mill for grinding’ and recognizes its importance in creating the correct ‘composition’ in order ‘to make the clay’. The next room sees ‘the flat cakes of clay drying in ovens’ whilst in the third room she encounters the potters forming vessels. After viewing the wonders of the throwing room, Powys has the opportunity of comparing this technique with press-moulding and is amazed by the accuracy with which these potters work, again summing up their skill, in terms of ‘their eye’. By the time she has reached the fifth room, her description of the process becomes more explicitly populated. The workmen pare and chip the forms, altering and perfecting them whilst a boy turns their wheel. In the next room, watching the making of ‘little roses, handles, twists and flowers’, Powys begins to view production in terms of consumption. She recognizes the pieces she sees being made as the decorations ‘one sees on the china fruit-baskets’. Similarly, in the next room, Powys again views processes of decoration, whilst in the eighth room her visceral reaction to the heat is palpable. She exclaims how ‘the heat of this eighth room was hardly bearable’. Yet despite the horrific temperature, Powys still manages to observe technical features of the ‘immense ovens’, such as a ‘sort of high sieve about six feet long’. In the ninth room, Powys views the wares being dipped, before they are sorted and smoothed, ready for painting in the eleventh, and final, room. Similarly, after his visit to the Swansea Pottery, where Clarke felt he ‘became acquainted with an outline of the process, by which this beautiful ware is made’, he was also able to recount that process in detail. For instance, when viewing the preparation of the clay he recalls how they ‘pulverized’ the clay and mixed it with water before passing it ‘through a sieve, finer than any cambric in the world’. The amount of detail observed, remembered, and articulated by Powys and Clarke demonstrates the importance of these visits in providing them with a vivid comprehension of the different aspects of the ceramic production process. Although at points they are left in awe, for the majority of the visit they are aware, keen to observe, and ready to learn.

Reading manuals and visiting factories provided contemporaries with an insight into how production worked. In articles on porcelain and pottery they read narratives depicting the various parts of the process of making. Writers invoked empathy in the reader by highlighting the physical nature of the processes. Yet writers’ failure to link all the techniques to accessible

---

361 Climenson, Passages from the Diaries of Mrs Philip Lybbe Powys, p.125.
362 Ibid. p.125.
363 Ibid. p.126.
364 Ibid. p.126.
365 Ibid. p.126.
366 Ibid. p.126.
reference points limited readers’ understanding. Making, and the tacit knowledge inherent within the production process, appeared continually distant, with readers never leaving the role of spectator. Similarly, on industrial tours, visitors were inherently aware of their role as spectator. Yet the experiences encountered by Powys and Clarke, provide evidence of how contemporaries formulated a detailed comprehension of the processes involved. Within this they recognized the centrality of tacit knowledge, and responded in terms of awe and wonder. Yet their ability to pinpoint these skills and recount them at length demonstrates the comprehension they claimed. Rather than alienated, contemporaries were engaged with and aware of the production processes that increasingly surrounded them.
Cultures of commerce compared: attitudes to wealth and profit in the business advice literature of the East and West, c.1600-1800

Michael Andrews, London School of Economics
(m.andrews@lse.ac.uk)
Supervisors: Drs Patrick Wallis & Debin Ma

Traditional work on the business community of the East and West during the period 1600-1800 has argued that the Chinese failed where the English succeeded in many areas including innovation, integration of factors of production and entrepreneurship. This is seen as one of the explanations of the ‘Great Divergence’ between the East and the West.

One method to explain this divergence has been to examine culture, that is the preferences and attitudes of businessmen. One strand of this debate has focused on what business advice literature, the handbooks and guides for businessmen on how to trade and conduct themselves, can tell us about business culture in the East and West. However, the handbooks of the East and West have not been looked at comparatively. Doing so and finding differences in culture would give insight into the reasons for the great divergence, whereas similarity would help dispel many myths and rule out certain arguments. This paper concentrates on what the handbooks can tell us about the attitudes of the business community to wealth and profit.

The historiography, which has been based on non-comparative studies, presents a straightforward opposing story. Grassby, examining the English seventeenth century business community argued that part of the uniqueness of the English businessman was the lack of constraining moral values in trade. It was not that actions that broke ethical values were promoted, just that there did not exist the constraints that existed elsewhere, such as in China which Grassby argued was hostile to wealth. Chinese merchants are argued to have had ethical constraints in their use of wealth. Lufrano noted that the merchant handbooks of the late imperial period corresponded well to Chinese morality books in looking at attitudes to wealth and risk, pointing to this constraint through morality. This Confucian bias was seen as a line of continuity for the long period 1550-1930. Brook also argued that Confucianism imposed constraints upon those engaged in commerce. Examining in detail a single Chinese merchant manual he noted the main theme was that morality was more important than profit and that risk aversion was a particular feature of the Chinese merchant.

However, my study challenges these stereotypes. Contrary to the traditional historiography the ideal of the businessman in the East and West shared many features. Wealth and profit were seen as dangerous by both sides, not just the Chinese. There was also the shared belief that businessmen had to use their wealth ethically in certain socially acceptable ways. Finally, the traditional idea that Chinese merchants were against focusing on wealth can be seen to have had parallels in the Western business advice handbooks, far

---

371 Lufrano., Honorable Merchants, pp.143-4, 178-80.
divorced from Weber’s artificial dualism of a West that focused on the ‘material-world’ and an East that focused on the ‘inner-world’.

**Sources**

The lens used to look at this issue of attitudes to consumption is business advice literature. This is a rich source for examining business culture and details the ideal of conduct or ethical behaviour expected of businessmen in every aspect of their lives from everyday trading to the topic of marriage. The books used in this study focus on business ethics, that is, what was regarded as right and wrong behaviour. It does not look in detail at the more technical works, such as those detailing accountancy or trading routes and goods. The books range in size from a few pages to large tomes, such as Defoe’s *The Complete English Tradesman* (1732) which runs to nearly 1,000 pages.

The sample used here is exhaustive of business advice literature of the period for both the East and West. Wilkinson’s guide to Chinese sources of history note around 20 to 30 handbooks extant for the period (although this includes a number which are solely route books), and here 19 are used. Detailed studies into Chinese merchant and business thought have used far fewer. Lufrano used seven handbooks in his study of late imperial Chinese business, all of which are used here, and Chen examined six. On the English side, the *English Short Title Catalogue* lists 18 business handbooks for the period, with seven dealing mainly with business ethics. While we must be cautious about inferring actual behaviour from advice literature, these manuals did reflect and influence business practice. The evidence points to them having been widely read. They are found in many private libraries and the number of editions that some books went through attests to their popularity.

**Attitudes to wealth and profit**

*Risk aversion*

Risk aversion can be seen in both cases. The business advice literature of China argued that the way to succeed in business was not through quick overnight profits, but through long slow steady profits. In the *Shanggu xingmi* (*Solutions for Merchants*, 1635), we find the proclamation that ‘large profits do not make a person profit, light profits are the way to wealth’. Here the author argued one should only aim for profits of 20 to 30 per cent, whereas 70 to 80 per cent could not be maintained. We find the warning that desire for some small gain might lead to large losses and gives examples of how preposterous such an action noting it as akin to a man stealing and losing his life or an official who neglects his duty for a small booty. In the *Dianye xuzhi* (*Essential Knowledge for the Pawn Trade*) of the late Qing period there are warnings against going for petty gain. This was seen as not protecting one’s name and reputation. More broadly, greed is argued against, and a tradesman had to act calmly when making decisions. *Solutions for Merchants* gives the example of a *li ren*, that is one obsessed with profit. Rather one should choose stability or they would meet with misfortune.

Similarly in the West, Defoe in *The Complete English Tradesman* advocated that one should seek to make moderate profits over a long period of time rather than be tempted by the

---

380 Li, *Shanggu*, p.280.
possibility of large fortunes in a short space of time ‘Let the wise and wary Tradesman take the Hint, keep within the Bounds where Providence has placed him, be content to rise gradually and gently, as he has done; and as he is sufficiently rich, if he will make it more, let it be in the old Road; go softly on, least he comes not softly down’. However, Steele in The Religious Tradesman (1776) took this one step further, beyond mere pragmatic business advice and infused a religious element. Risking all for small profit was a possible danger, and could incite divine scorn ‘it is more than possible the prospect of gain may blind the minds of men, and make them insensible of their guilt and danger. Whatever the apprehensions these persons may have of their sagacity and prudence, the world cannot produce a greater fool, than he that will affront God, injure his neighbour, and destroy his own soul, for the sake of a little monetary gain’.

Ethical use of wealth

There was the need for the ethical use of wealth in the East. Solutions for Merchants gives advice on this. It advocated helping and sharing the happiness and achievement from trade. A trader should share their wealth around and not keep it all to himself. In the merchant biographies we find examples of virtuous behaviour being lauded. These were written by officials and brought out what they saw as exemplary moral behaviour by the merchants. We find a biography written in the late Ming period of a gentleman Wang who made his fortune as a merchant. There were accounts of him giving to the poor:

Mr. Wang liked to help people and to give assistance to the poor. If anyone among his kinsmen could not afford a funeral for his parents, Mr. Wang would always buy some land and build a tomb for him. As soon as he heard someone could not make ends meet, land to rent to him. Whenever he was out travelling and met some unburied spirit, he would bid his servants bury it and present some offerings

This extends to many further examples. We find Mr. Wang being lauded for helping with food crises and using his wealth to repair damaged village bridges.

There was the same call in the West for the use of one’s wealth for the public benefit, that is wealth and profit brought their own responsibilities. This can be seen in the work of Sir Josiah Child and his A New Discourse of Trade (1745). This shows one merchant’s views, including the view that the poor should be looked after. Child devotes a whole chapter ‘Concerning the Relief and Employment of the Poor’. He suggested that the poor had to receive help and aid. His remedy was to have a council of the ‘Fathers of the Poor’ which would be elected from the local great and good. This would be a council to ensure the employment of the poor and provide aid. Interestingly, the operation of the committee would be based upon that of the East India Company according to Child. This would perhaps be a case of using business knowledge to help organize poor relief. There were many other schemes proposed including hospitals and working schools in Sir Francis Brewster’s Essays on Trade and Navigation (1654) and almshouses in John Cary’s An Essay Towards Regulating the Trade and Employing the Poor of this Kingdom (1717).

---

383 Li, Shanggu, p.322.
385 Ibid., pp.159-60.
387 Ibid., pp.86-110.
Contentment

A central concept in the Confucian doctrine is that of contentment, that is that one should not strive after mere material possessions leading to a never-ending path of wants. This can be seen in Confucius’ *The Analects*. One part stands out on this point ‘The Master said, “In the eating of coarse rice and the drinking of water, the using of one’s elbow for a pillow, joy is to be found. Wealth and rank attained through immoral means have as much to do with me as passing clouds”’. This argues for the principle of morals above profit and that a person should be satisfied with what they have. This is a Confucian doctrine that can be found in the Chinese merchant handbooks. In the *Shishang leiyao (Essentials for Gentlemen and Scholars, 1626)*, the exact same doctrine is espoused arguing for the satisfaction that could be derived from even having coarse rice and bad clothes. These ideas would go against the idea of wealth as a suitable life goal. This can be found in *Solutions for Merchants*. This refers to the insatiability of ever increasing wants. The author talks of the fact that those who are of a greedy disposition will never be satisfied with what they have, and will always complain about not having enough. In *Essential Knowledge for the Pawn Trade* it is argued that people should be happy with what they have, and not think of the times when they are not so fortunate. Indeed, ‘the fortune of the present, one must cherish’.

However, in the West we also have this argument for contentment and against the pursuit of wealth. Defoe outlined his ideal plans for the career of a tradesman. This did not extend to carrying on indefinitely in trade amassing greater and greater wealth. Defoe imposed a limit on the wealth that a tradesman should amass and then retire. This limit was £20,000, a large sum, but a limit nonetheless. Defoe argued for this so other tradesman could have a shot at making it, and because trade was filled with inherent danger, which could only be escaped through leaving it altogether. And when withdrawing, it should be total where ‘From the first Hour that he withdraws out of Trade, he should resolve to withdraw wholly out of it, and then he may write Secure upon his Door’. He also condemned the ‘purse-proud’, those who were proud or arrogant because of their wealth ‘to be vain of the mere Wealth as such, is a Token of the greatest Meanness of Spirit that Mankind is or can be capable of … Of all the Mistakes of a Tradesman’s Life … this of being Purse-proud is the Worst’. Steele explicitly deals with the topic of contentment calling for businessmen to ‘restrain your fancies, and moderate your desires … Mens real wants are few … if our fancies and desires are made the measure of our necessities, we shall find no end to our imaginary wants…if our circumstances are moderate, we may as well sit down easy and cheerful now as then’.

Conclusion

The stereotypes of difference between the East and West have been examined in this paper, through a comparative analysis of business advice literature. However, this analysis shows that the reality was more nuanced and that the business communities in the East and West might not have been so different in their attitudes to wealth and profit. This can be seen in three ways. Firstly, wealth and profit could be seen as dangerous. The *Shanggu xingmi* argues one should not be a *li ren* that is one obsessed with profit, since this will lead to instability, and so promotes risk aversion. However, Defoe, in *The Complete English Tradesman* argued for the importance of such stability. Secondly, businessmen had to display a high moral

---

391 Li, *Shanggu*, p.310.
392 *Dianye*, p.237.
quality in using their wealth. Chinese merchant biographies kept by officials to display ideal merchant behaviour show that those lauded are those who made profit with virtue and used it benevolently. This view that businessmen should help the poor is also apparent in Child’s *A New Discourse of Trade*. He advocated the setting up of organizations to help them. Thirdly, there are arguments that the Chinese business community were against focusing on material wealth. However, this can also be found in the West. Defoe argued that tradesmen should reach a certain level of riches, then leave trade altogether and be content. He also condemned the ‘purse-proud’ who bragged of their wealth. Overall, I suggest the attitudes to wealth and profit of businessmen in the East and West was not so clean cut as the common stereotype of Eastern hostility versus Western acceptance would suggest. The East and West were not so different.
Does neoclassical theory accurately describe historical labour markets? The case of women in textiles, 1780-1850

Paul Minoletti, University of Oxford  
(paul.minoletti@mansfield.ox.ac.uk)  
Supervisor: Professor Jane Humphries

Visiting Huddersfield in 1849, Angus Reach found that for women employed in the mills there, ‘The average [weekly earnings] may be about 8s.6d.’ Whereas for men they, ‘may be placed at from 14s. to 15s. per week’. The woman:man wage ratio found here contrasts favourably with the carding, drawing, and spinning departments he viewed at the Houldsworth mill in Halifax where, ‘the mechanism was almost exclusively looked after by women and girls at the low wages of 5s. and 5s.6d. The men employed were overlookers, and earned from 15s. to 22s’.396 As can be seen in Figures 1-2, the typical wage ratio between men and women in the Lancashire cotton and the Yorkshire wool textile industries was somewhere between the two preceding examples. This wage gap was seen as beneficial by many commentators, since it discouraged women’s work. A pervasive ideology hostile to women’s work outside of the home, particularly labour performed in factories and mines, had emerged by the 1820s and 30s, attracting support from polemicians as diverse as Andrew Ure and Friedrich Engels.397

Many historians of women’s work argue that this ideology was highly significant in determining labouring women’s relatively low wages. Sonya O. Rose claims that employers paid women a customarily low wage which was influenced by the separate spheres ideology, and they believed that it was natural for men to have better paying jobs than women.398 Deborah Valenze believes that, ‘Employers did not offer a “living wage” to the female or child since they assumed that she was dependent upon a household headed by a male and therefore did not depend only on her wages for subsistence’.399 Joyce Burnette challenges this interpretation, arguing instead that in the absence of distributional coalitions and government interference, occupational segregation and the gender wage gap is determined by strength differences and women’s unique ability to give birth and breastfeed.400 For Burnette, ideology was created to explain existing patterns of work and pay rather than determining these patterns, and, ‘Employers were not constrained by gender roles.’401 This paper represents a portion of my D.Phil, which attempts to chart the evolution of female and male wages and employment opportunities in the English textile industries during the Industrial Revolution, and how these were influenced by factors such as strength differences, ideology, childbirth, trade union behaviour, and age.

396 Reach, Angus (ed. Chris Aspin), Fabrics, Filth and Fairy Tents; the Yorkshire Textile Districts in 1849 (Hebden Bridge, 2007), pp.6, 35.
401 Ibid., pp.5-7, 13.
Figures 1-2 show a female:male wage ratio of around, or slightly above, 1.0 up until the age of 15, after which it plunges dramatically due to rapidly rising male wages and relatively slowly rising female wages. The relationship between male and female wages then stabilizes from the mid-20s. This stabilization is caused by male and female wages rising at approximately the same rate from their mid-20s to mid-30s (after which they level off or decline). The 1834 Supplementary Report on the Employment of Children in Factories reveals a similar trend for the wool textile industry in Somerset, Wiltshire, and Gloucestershire; the silk industry in Derby, East Anglia, and Somerset; the flax industry in Leeds; and the lace industry in Derby, and Tiverton. Unfortunately the Report suffers from big-firm bias, but this is far less pronounced than among surviving records for individual firms. Moreover, this source is unrivalled for this period in terms of geographical spread, and the number of workers and employers covered. It is also highly unusual in providing wage data for individual ages (e.g. 17, 18 etc). Male strength advantage partially explains the relative decline of female wages from the mid-teens, since some of the factory occupations at this time were physically demanding. Trade unions also reduced women’s earning capability: in the cotton industry the mule-spinning and dressing unions acted to exclude women from

\[ R^2 = 0.9374 \] for Figure 1

\[ R^2 = 0.8994 \] for Figure 2

Source: Extracted from British Parliamentary Papers (B.P.P.) 1834, XIX, p.279.

Source: Extracted from B.P.P. 1834, XIX, p.281.

\[ \text{1833: Lancashire Cotton} \]

Figure 1

\[ \text{1833: Yorkshire Wool Textiles} \]

Figure 2
these well-paid occupations. Lower levels of investment in the human capital of females, by both themselves and by parents, provides a further reason for the gender wage gap. However, these factors cannot fully account for the gender distribution of workers shown below:

Table 1: 1833 Lancashire Cotton

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Sector</th>
<th>Age and gender</th>
<th>N</th>
<th>Avg. Earnings</th>
<th>Avg. Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overlookers</td>
<td>Mule-Spinning</td>
<td>M</td>
<td>145</td>
<td>29.25</td>
<td>27.9</td>
</tr>
<tr>
<td>Dressers</td>
<td>Powerloom/Weaving</td>
<td>M</td>
<td>836</td>
<td>27.81</td>
<td>27.6</td>
</tr>
<tr>
<td>Overlookers</td>
<td>Powerloom/Weaving</td>
<td>M</td>
<td>400</td>
<td>26.30</td>
<td>27.3</td>
</tr>
<tr>
<td>Spinners</td>
<td>Mule-Spinning</td>
<td>M &amp; W (principally M)</td>
<td>3797</td>
<td>25.66</td>
<td>27.5</td>
</tr>
<tr>
<td>Carders or Overseers</td>
<td>Carding</td>
<td>M</td>
<td>376</td>
<td>23.51</td>
<td>27.5</td>
</tr>
<tr>
<td>Overlookers</td>
<td>Throstle-Spinning</td>
<td>M</td>
<td>82</td>
<td>22.38</td>
<td>27.2</td>
</tr>
<tr>
<td>Warpers</td>
<td>Powerloom/Weaving</td>
<td>M &amp; W</td>
<td>332</td>
<td>12.26</td>
<td>27.0</td>
</tr>
<tr>
<td>Weavers</td>
<td>Powerloom/Weaving</td>
<td>M, W, B, G (Principally F)</td>
<td>10171</td>
<td>10.82</td>
<td>27.3</td>
</tr>
<tr>
<td>Jack-frame tenters</td>
<td>Carding</td>
<td>Principally W</td>
<td>696</td>
<td>8.00</td>
<td>27.5</td>
</tr>
<tr>
<td>Spinners</td>
<td>Throstle-Spinning</td>
<td>W &amp; G</td>
<td>1123</td>
<td>7.75</td>
<td>27.2</td>
</tr>
<tr>
<td>Drawing tenters</td>
<td>Carding</td>
<td>Principally W</td>
<td>1931</td>
<td>7.48</td>
<td>27.5</td>
</tr>
<tr>
<td>Bobbin-frame tenters</td>
<td>Carding</td>
<td>Principally W</td>
<td>945</td>
<td>7.46</td>
<td>27.6</td>
</tr>
<tr>
<td>Piecers</td>
<td>Mule-Spinning</td>
<td>M, W, B, G (Principally C)</td>
<td>7157</td>
<td>5.39</td>
<td>27.4</td>
</tr>
<tr>
<td>Scavengers</td>
<td>Mule-Spinning</td>
<td>B &amp; G</td>
<td>1247</td>
<td>2.89</td>
<td>27.2</td>
</tr>
</tbody>
</table>

Source: Extracted from B.P.P. 1834, XIX, p.427. N.B. Average earnings are expressed in shillings and are calculated for a standardized 69 hour week, thus any differences in hours worked do not affect earnings figures.
Key: ‘M’ = male aged 18 and above; ‘W’ = female 18 and above; ‘B’ = male 17 and below; ‘G’ = female 17 and below.

The exclusion of women from overlooking/overseeing in Table 1 is striking, and highly significant in restricting their earning capability, as they accounted for four of the six most highly paid occupations. Further, dressing and mule-spinning also typically involved a supervisory aspect. It is not possible to be certain that no women at all were recorded as overseers in the original returns, since only the aggregated tables remain, and if a gender/age category accounted for only a small proportion of the workers, the tables in the Report do not necessarily mention them. For example, only ‘women’ and ‘girls’ are listed in the aggregate table for Lancashire as performing throstle-spinning, but when this data is broken down into eight sub-regions, in two of these regions ‘men’ and ‘boys’ are also reported in this occupation. However, there is no mention of females working as overlookers/overseers in any of the eight sub-regional tables, so if any women were so employed they would have been very rare. Further, the 1834 Report reveals that only adult males were employed in the highly paid overseeing occupations at the Lancashire silk and flax mills that were surveyed, despite these industries having a very low proportion of adult male workers. Finally, the Reports derived from the 1833 investigation, which cover cotton, woollen, worsted, silk, flax, lace, and carpet manufacture in rural and urban locations across Great Britain, feature interviews with 199 overseers in the textile industries, all of whom are male. This is despite interviews with many women in a variety of occupations within textile factories appearing in the Reports.

Unfortunately, the only region for which the 1834 Report provides a breakdown of average earnings by occupation and gender is Lancashire. However, I have examined the

---

403 N.B. although trade unions did not become legal until 1824, proto-trade unions, officially designated as “trade societies” or “sick clubs”, had operated well before this date. In this paper “trade union” is used to refer to both legal trade unions and any prior organizations which shared their key characteristics.

404 B.P.P. 1834, XIX, pp.448-50,454-56.

405 B.P.P. 1833, XX-XXI; B.P.P. 1834, XIX-XX.
wage books of three cotton mills (in Derbyshire and Lancashire), two silk mills (Yorkshire and Essex), one woollen mill (Yorkshire), and three worsted mills (Yorkshire), encompassing the period 1786-1862, and the only evidence of female overseers is to be found at Courtaulds silk mill in Essex. Even here, women were only employed as ‘female assistant overseers’, and not as ‘second-class overseers’ or ‘principal overseers’, with their job titles indicating a relative lack of authority, seniority and control over workers at the mill. Their earning capacity was commensurate with their lower status: ‘female assistant overseers’ earned a maximum of 8s 6d per week, whereas ‘second-class overseers’ and ‘principal overseers’ could earn up to 25s and 40s respectively.

The near-total exclusion of women from overseeing roles cannot be attributed to the behaviour of trade unions, since no trade unions for overseers emerged until the second half of the nineteenth century. Neither can it be attributed to strength requirements; although overseers at many firms were responsible for physically disciplining child workers, recent research on child labour has shown that physical coercion of young factory workers has frequently been overstated. Moreover, it is implausible that a degree of physical coercion that may have increased the productivity of assistants, rather than injuring them and making them less productive, would have required the full strength of an adult male in his physical prime. Indeed, the 1833 Report interviews many overseers aged over 50, including a 60-year-old who had lost an arm in an industrial accident.

Since women, on average, withdrew from the factory workforce at a younger age than men, this would have reduced their availability for overseeing roles as these tended to be given to older workers. Also, awareness of women’s earlier retreat from the workforce, as well as their lower earning capability, would have reduced investment in any human capital which may have been beneficial for overseeing. However, the only apparent necessary skill for overseeing was basic numeracy (for recording worker output and/or hours worked), and the 1833 Report reveals an overseer who cheerfully, ‘Depones that he cannot write, owing to indisposition’. Thus, human capital requirements do not seem to have been high for many overseeing jobs, and female overseers could have been paid less than their male counterparts, due to their lower earning capability within textiles and relative lack of alternative employment. We know that employers in the cotton industry faced considerable difficulty in finding overseers, particularly those who understood the production process they were supervising. Therefore, especially in female dominated subsectors such as carding and

---

406 Samuel Oldknow Papers, John Rylands Library, Manchester (dates examined: 1790, 1792); Greg Papers, Manchester Central Library, Manchester (1790, 1834); Arkwright Papers, Manchester Central Library, Manchester (1786, 1794, 1810); Bentley Silk Mills Records, West Yorkshire Archive Service, Kirklees (1848-52); Courtauld Papers, Essex Record Office, Chelmsford (1825-60); Benjamin Gott & Son Papers, Brotherton Library, Leeds (1830); Business Records of William Ackroyd Ltd, Brotherton Library, Leeds (1846, 1850, 1854, 1858, 1861); Business Records of Robert Clough Ltd, Brotherton Library, Leeds (1829-33, 1844-48); Business Records of John Foster & Son, Brotherton Library, Leeds (1838, 1840, 1842, 1844, 1846, 1850, 1854, 1858, 1862).


409 Humphries, Jane, Childhood and Child Labour in the British Industrial Revolution (Forthcoming, Cambridge University Press, 2010).

410 B.P.P. 1833, XX, especially p.129.

411 B.P.P. 1834, XIX, pp.279-89.

412 B.P.P. 1833, XX, p.120, see also p.228.


throstle-spinning, there should have been strong economic incentives for factory owners to employ female overseers. Ideology, in the form of androcentric blindness on the part of employers and/or worker resistance to female supervision, appears to have been crucial in preventing this from happening.415

Ideology regarding female supervision also seems to have been important for limiting female participation in mule-spinning. Whilst the behaviour of the mule-spinners’ union was important for this, excluding all women (as well as males unrelated to existing union members and the Irish) from 1829 onwards, a practice which many of the local branches had already been enforcing, it is necessary to explain how the male spinners were powerful enough to enforce this exclusion, particularly since spinning had traditionally been a female occupation. Burnette and Mary Freifeld have pointed to the strength necessary to operate the hand-powered mules of the 1790s, and the increasingly large steam-powered mules of the 1820s and 1830s. This natural male strength advantage is then held decisive in enabling the male union to successfully act in an exclusionary manner, with union power persisting after the spread of the self-actor in the 1830s and 1840s removed any strength requirement.416 Although the largest mules were too heavy to have been used by all but a few exceptional women, it is not demonstrated that the largest mules available at any given time were used by the majority of employers. In 1830 Benjamin Gott & Sons, one of the most heavily capitalized and technologically innovative firms in the woollen industry, employed 13 jenny-spinners alongside 15 mule-spinners.417 Spinning jennies were also in use in Stockport as late as the early 1830s,418 despite the more efficient mule being introduced to the cotton industry in 1779. Thus, it is clear that the newest technology was not being used by all firms. Technological adoption by firms would also have been influenced by relative labour costs. Given the much lower earning capacity of women than men in factory textiles, as well as their relative lack of alternative employment, strength advantage alone is insufficient to explain male dominance.

There is very little surviving evidence on whether female mule-spinners were responsible for recruiting and supervising their own assistants (‘piecers’ and ‘scavengers’), as was the norm for male mule-spinners. However, we know that when M’Connel and Kennedy replaced male mule-spinners with females from 1810, these women, unlike their male predecessors, did not recruit or supervise their assistants. This was unusual for mule-spinning and must reflect the employers’ belief that women lacked the ability to supervise effectively. It resulted in increased overseeing costs, search costs and wastage costs, resulting in the firm soon reverting to hiring men, who were again deemed capable of supervising and recruiting their assistants.419 William Lazonick has argued that men’s greater strength was significant for their supervisory advantage in mule-spinning, but, as I have argued in the case of overseers, this is not plausible.420 Women mule-spinners were, however, widely perceived to be less effective at supervising their assistants.421 Given the strong economic incentives to replace expensive and unionized men with women, this perception must have been significant in strongly and increasingly limiting women’s employment here.

---

415 ‘Androcentric blindness’, whereby employers unconsciously underestimate women’s work capabilities due to an ideological climate hostile or denigrating towards women’s work.
It is significant that the female assistant overseers at Courtauld’s mill worked only in the winding department, which employed the youngest workers (boys aged up to 15, and girls up to 17).422 It was apparently ideologically unacceptable for labouring women to have authority over adult males, and preference was given for male supervision even when the subordinate workers were children or women. This affected economic relationships even where there were highly competitive product markets and no government or trade union interference. Whilst the impact of this ideology on the labour market may have been driven through employers, it seems probable that they were responding to worker preferences. These may have taken the form of an objection by workers, particularly adult males, to working under female supervision and/or female unwillingness to take a job that compromised her feminine identity. The occupational segregation that resulted, along with biological differences, lowered women’s earning capacity; I have found no evidence for females being paid less for performing the same work as males. The adult female:male wage ratio in the 1833 data contrasts unfavourably with the figure of 0.865 for the payments to the highly skilled and relatively well-paid adult spinners at Samuel Oldknow’s firm 1788-92, especially given the strength component of this work.423 The total absence of female spinners at Oldknow’s firm by 1793, three years after production shifted to the factory, was an early indication of women’s declining access to the best-paid occupations in textiles as the work environment became increasingly formalized and hierarchical.424

423 Extracted from Samuel Oldknow Papers, SO/4/2.
424 Samuel Oldknow Papers, SO/4/3.
Consent and compulsion: the binding of chimney sweep apprentices, c.1780-1840

Niels van Manen, University of York
(nvm500@york.ac.uk)
Supervisor: Dr Mark SR Jenner

In the past decades, historians have gone a long way to rectify the received wisdom of industrialization as a driver for relentless worker exploitation. For the British case, work by Innes, Honeyman, Kirby, Levene, and others has shown that the industrial experiment indeed gave rise to exploitative practices that maximized productivity, but also stimulated protective measures designed to root-out the worst excesses. These same scholars have also started to explore how workers themselves responded to and shaped such experiences – following similar work on agency of the marginalized by scholars of slavery, poverty and medicine. This paper draws attention to chimney sweep apprentices, or ‘climbing boys’, and argues, firstly, that such exploitation and protection was not unique to the new manufacturing trades and, secondly, that child workers are a particularly insightful case for exploring agency in the workplace.

At first sight, measures to protect climbing boys from exploitation only reduced their agency. Legislation introduced between 1788 and 1840 restricted work opportunities in the trade by introducing a minimum age (8, 10, and eventually 16), limiting working hours, and reinforcing traditional apprenticeships that subjected boys to the whims of their master for a significant time. Moreover, legislators took these steps without consulting the children themselves. Indeed, the debates that underpinned these measures redefined the child as a helpless being, exempted from free-trade principles precisely because, as children, they were incapable to defend their own interests. In this light, the measures can be seen as important steps towards limiting legal and financial independence of youngsters, in general, and obstructing their economic opportunities, in particular.

Yet, a closer look reveals a more complex image. The initial age restrictions for chimney sweeping were introduced to ensure that children who entered indentures could make an informed choice – more mature and somewhat educated, they were better judges of the risks involved and opportunities at hand. Many parishes indeed started to offer youngsters trials with their prospective master and consulted them before confirming the indenture in front of magistrates. Historians of industrialization have dismissed such moves as false pretends for coercing children into the factory, for those who declined, or whose parents refused to approve, were pressurized to give in – being threatened that their families would be denied the provision of further relief. Such a conclusion, however, tells us little about the origins and dynamics of such policies. What drove parishes to introduce a system of consent and under what circumstances, if at all, were children given a say? I will approach these questions through the policies of a single London parish, St Clement Danes, Westminster, drawing comparisons with other parishes and considering the lessons we might draw about attitudes to consent, children’s experiences of the law, and the character of parish apprenticeships in the final decades of the old poor law.

St Clement Danes, Westminster
On 8 December 1829, Hugh Thorpe Kernot, master sweep, and Mrs. Bryan, master sweep’s wife applied to the governors of St Clement Danes for apprentices, presenting a list with the names and ages of six boys in the workhouse who had volunteered to join the trade. When the

425 Innes (Forthcoming), Honeyman (2007), Kirby (2003), Levene (Forthcoming).
New Researchers - Session II / D

Board reconvened the following week, it informed the applicants that their requests could not be met, as ‘the Officers of this Parish had determined not to bind children to that Business’. Two things stand out: first, the applicants’ belief that the boys’ consent increased their chances of success; second, the governors’ refusal on principle grounds.

The former is surprising because the governors of St Clement Danes had so far expressed little interest in the issue of consent. During the heyday of factory apprenticeships (1785-1815), the parish had taken several measures to protect its paupers from the worst excesses, but shown little remorse in forcing children (and their parents) to accept placements in distant mills. There is little to suggest that a drastic change occurred with the return to traditional placements.

Yes, the Board ordered the master of a run-away boy to return him ‘home’ upon retrieval – accepting the boy’s unwillingness to work in the trade – and its Minutes occasionally refer to children being asked for their consent. But these were modest gestures compared with the policies of other parishes. On 28 November 1809, the Directors of St George Hanover Square, Middlesex met to consider whether chimney sweeping was an appropriate destination for their pauper children, resolving that, ‘they may be so apprenticed to Masters of good Character provided it be with the Approbation of their Parents if any and with their own free Will and Consent & after they have been on Trial for six Weeks’.

It was only in the 1830s that St Clement Danes introduced similar policies and even then, as we will see, with mixed commitment. Hence, it seems that the applicants’ emphasis on consent reflected a general mood in society, rather than signals sent out by this particular parish.

That the parish refused the sweeps’ request on principle grounds is surprising, as the Board had bound boys to the trade for many years. Between 1816 and 1822, no fewer than 24 pauper children were placed with sweeps, as part of a shift away from heavy reliance on factory placements towards more bindings in traditional employs. There was nothing usual about the way these indentures were administered. The officers developed long-standing relationships with sweeps who they regularly supplied with new apprentices; and, they showed a preference for masters residing elsewhere – holding the prospect of the boy gaining settlement there, which would transfer relief duties to the receiving parish. Yet, these regular placements had come to a temporary halt once before.

On 30 December 1817, the governors declined a request from chimney sweep Watson, ‘on Account of the nature of the business’. No deals were struck for the next 15 months. But in March 1819, the Board resumed binding to sweeps, resulting in five more placements before the end of the year. The Minutes give no clues as to the reasons for this turn-around. But it seems likely that pressure on poor rates, from rising food prices and increasing unemployment, played a part. Levene has argued that, through the final decades of the Old Poor Laws, long-standing objectives of training with the prospect of full employment and settlement (preferably in another parish) continued to dominate the apprenticeship policies of London parishes. It seems that such goals were indeed on the governors’ minds. When they resumed binding to sweeps after the second spell of draught, in January 1831, it was to a master belonging to ‘the Society for Apprenticing Climbing Boys after their apprenticeships to that business has expired’. Perhaps encouraged by the master’s long-term objectives,

428 Westminster City Archives, St Clement Danes Minutes of Churchwardens, Overseers and Assistants, 8 Dec. 1829, Acc. B1153, Film 397.
429 Honeyman (2007).
430 The Director’s response to the runaway boy: WCA, St Clement Danes Minutes, 1 Aug. 1820, Acc. 1150, Film 395. One example where a prospective climbing boy is asked for his consent: WCA, St Clement Danes Minutes, 22 June 1822, Acc. 1151, Film 395.
431 WCA, St George Hanover Square Minutes of Directors and Governors of the Poor, 28 Nov. 1809, Acc. C931, Film 581.
432 WCA, St Clement Danes Minutes, 30 Dec. 1817, Acc. B1150, Film 395.
433 Levene (Forthcoming).
Inquiries were ordered to be made [into the sweep’s character] preparatory to the boy going on liking’.\textsuperscript{434}

Here, then, was the beginning of the convention of careful consultation. For the next five years, the Board received another 15 requests from sweeps, resulting in routine investigations of the master’s credentials and, if found of suitable character, a period of ‘liking’ for the boy. Moreover, the trials and the boys’ consent were meticulously recorded in the \textit{Minutes}. When William Heffry (sic) applied for a boy in January 1833, ‘he was promised one if any boy was willing to be apprenticed to the business, and the applicant’s Character prove good’.\textsuperscript{435} And, when Luke Field requested the binding of workhouse boy Daniel Dewney, it was resolved that, as ‘he having had several Boys from the Parish ( ... ) the Boy should go a month on liking and the master took the boy’.\textsuperscript{436} With its insistence on character checks, trials, and consent the parish anticipated new legislation, passed in 1834, that made such policies obligatory to parishes across the country. Yet, even when St Clement Danes followed these guidelines carefully, deals did not always go through.

At least on two occasions, boys had been on liking and consented to be apprenticed, but their relatives blocked the binding. In the case of Nicholas Burke (February 1834), his stepmother and sister prevented a deal at the last moment, ‘objecting to the business and stating that they had a prospect of providing the boy with a Master of another Business’. They took the boy and the master was forced to return his clothes to the parish. Yet, their hope of finding an alternative placement fell through, and within 6 months the boy appeared again before the Board, set to be bound to another sweep.\textsuperscript{437} The pressure on relatives to deliver an alternative quickly or accept whatever placement the governors could find is also clear from the second example. On 19 January 1836, Mrs. Heziah Pearce attended the governors on behalf of her nephew, who had been sent on liking with a sweep the previous day. She reminded them of their promise the preceding August, that her nephew would not be bound to this trade. The governors conceded but warned her that this promise only applied to the present Board and ‘she was advised to find a Master in another business for him in Order to prevent his being sent again to the same business should it be his desire’.\textsuperscript{438} The case of Nicholas Burke shows that this was no empty threat.

Notice, in the Pearce case, the emphasis placed on the boy’s wish: he would be bound to a sweep next time, ‘should it be his desire’, irrespective of his aunt’s objections. We should be careful in concluding from this that the governors held children’s opinions more highly than those of their elders. More likely, they would have colluded with the aunt in forcing the boy to consent, had he objected and she approved. As the examples in this paper illustrate, the parish officers juggled with several balls, which they raised and dropped according to circumstances. The governors twice suspended bindings to sweeps, on principle grounds. But they put their objections aside, when alternatives dried up. Similarly, they went to increasing lengths to establish masters’ credentials and boys’ consent. Yet, their lax treatment of relatives’ objections leaves us to doubt their commitment to children’s approval, if placements got sparse.

Other parishes faced similar dilemmas, though not always under the same conditions, or with the same outcome. Like in St Clement Danes, the Boards of St Pancras, Middlesex and St George Hanover Square, Westminster questioned the desirability of placements with sweeps. But each took a different approach to dealing with the matter. The St Pancras governors had long used bindings to sweeps to complement placements in mills. But in 1806 they stopped supplying to both sectors. They upheld their boycott of chimney sweeping, even when lack of alternatives forced them to resume factory apprenticeships temporarily (1814-6).

\textsuperscript{434} WCA, St Clement Danes Minutes, 18 Jan. 1831, Acc. B1153, Film 397.
\textsuperscript{435} Ibid., 29 Jan. 1833, Acc. B1155, Film 397-8.
\textsuperscript{436} WCA, St Clement Danes Minutes, 30 April 1833, Acc. B1155, Film 397-8.
\textsuperscript{437} Ibid., 11 Feb., 18 Feb., 4 Aug. 1834, Acc. B1156, Film 398.
And in 1818, they campaigned to impose this policy upon other parishes, petitioning parliament to ban the use of child sweeps.\(^{439}\)

As pointed out before, their counterparts in St George Hanover Square resolved to pay greater attention to sweeps’ credentials and ensuring that parents and children agreed with the binding. But they never considered shunning the trade. Indeed, they regarded it vital to parishioners’ welfare to continue such placements, as fires would rage were masters forced to work without boys. Hence, they strongly opposed climbing boy abolition, and petitioned parliament to make their views known.\(^{440}\)

Such variations should stop us from making sweeping generalizations. Each parish had its own unique set of circumstances and its own preoccupations. As the case of St Clement Danes highlights, the dynamic interplay between the two led to complex, at times contradictory policies.

**Implications**

These reservations in mind, what lessons can we draw about broader historical issues?

Firstly, the paper suggests that consent was more important to pauper policies in this period than previously assumed. Instead of parishes bullying paupers towards accepting their preconceived policies, we find increasing concern for paupers’ views. Crucially, this concern was also directed at children. Whereas previous studies indicated that adult paupers gained a voice at the expense of the young,\(^{441}\) here we find evidence that parish authorities cared for children to have a say. Many arranged for children to try their prospective trade and, to various degrees, acted upon their views. Moreover, this policy of trial and consent was included in new legislation (1834), aimed at protecting sweep’s apprentices but giving them agency too.

This brings us to a second theme: children’s experiences of the law. Brewer (2007) has claimed that the decline of status and the rise of contractual relations during the eighteenth century undermined the position of children in the Anglo-American world.\(^{442}\) A fixation on ‘informed consent’ disqualified children, redefined by their immature, irrational minds, from acting as masters over their own lives. Brewer convincingly shows how political and theological discussions about consent infiltrated legal discourses, including William Blackstone’s important reflections on contractual law. Yet, her study lacks in empirical evidence on how this transition affected children’s lives. This paper suggests that neither in principle, nor in practice age became a bar for consent. Protective legislation also promised children a voice and parish officers respected children’s opinions as long as they could be reconciled with their own views.

The analysis presented here is a starting point for a more thorough investigation of children’s agency in the early decades of the nineteenth century. Such investigation will consider children’s involvement in the formulation of labour legislation, the management of existing contracts, and coroners’ inquests in work-related deaths. How far was age a bar for participation in these cases? Which factors determined adults’ willingness to grant children a say? And what does this reveal about the nature of socio-economic relations in early industrial Britain?

**References**


\(^{439}\) *Lords Journals*, 51, p.592.

\(^{440}\) Ibid., 51, p.508-10; Ibid., 52, p.107-108.

\(^{441}\) Hitchcock (2004).

\(^{442}\) Brewer (2007).
Innes, J. (Forthcoming), ‘Parliament and the regulation of child factory-labour in Britain, 1783-1819’.
Kirby, P. (2003), *Child labour in Britain, 1750-1870*.
Levene, A. (Forthcoming), ‘Parish apprenticeship and the Old Poor Law in London’.
Introduction

The view that formal education did not play a prominent role in the emergence of new industries in the British Industrial Revolution is well established (Mitch 1999). As Mokyr (1990, p.240) famously sums up, ‘If England led the rest of the world in the Industrial Revolution, it was despite, not because of, her formal education system’. Surprisingly little attention, however, has been paid to the role of education in the industrial catch-up of the technological follower nations – the whole world except Britain. For the rest of the world, the developments in Britain established an outside event that created new technologies and work organizations.

Models of technological diffusion in the spirit of Nelson and Phelps (1966) suggest that education is the key ingredient to absorb new technologies and adapt to change (cf. Benhabib and Spiegel 2005; Vandenbussche, Aghion, and Meghir 2006). Similarly, most unified growth models stress the role of human capital for the transition to modern growth, at least during the second phase of industrialization (e.g., Galor 2005; Galor, Moav, and Vollrath 2009). It is also sometimes argued that education was important for the transfer of technological leadership from Britain to Germany in leading sectors at the end of the nineteenth century (e.g., Landes 1969). But the role of education for catch-up during the first phase of the Industrial Revolution is less clear, and thorough empirical evidence is missing for both phases.

This paper provides evidence whether initially better-educated regions within Prussia responded more successfully to the opportunities created by the outside technological changes from Britain.

The data

Based on several full Population, Factory, Occupation, and School Censuses conducted by the Prussian Statistical Office, we compile a historically unique micro-regional panel dataset of 334 Prussian counties that spans nearly the whole nineteenth century. Despite some changes in the administrative boundaries of counties between 1816, 1849, and 1882, we were able to link the data consistently over time. In particular, we cover education and pre-industrial development indicators in 1816, before the start of the Industrial Revolution in Prussia (which is generally placed around the mid-1830s; e.g., Hoffmann 1963; Tilly 1996), as well as education and industrial employment shares towards the end of the first phase of industrialization in 1849 and during the second phase in 1882.

We measure industrialization in 1849 by factory employment as a share of total county population. The corresponding factory census reports employment in 119 specific types of factories. We combine these into three industrial sectors: metalworking factories; textile factories; and other factories (outside metals and textiles), such as those producing rubber, paper, food, wood, and wax.

Our measure of industrialization in 1882 is manufacturing employment as a share of total county population. A downside of this classification relative to the factory count of 1849 is that the 1882 measure includes craftsmen and artisans who may not necessarily perform industrial work. Again, we subdivide the manufacturing sector into metals textiles and all manufacturing except metals and textiles.
Our education measures before and in the first phase of the Industrial Revolution refer to 1816 and 1849. They indicate the enrolment rate in elementary and middle schools, measured as the enrolment count in elementary and middle schooling as a share of the population aged 6 to 14 years, which is the relevant school age in Prussian elementary and middle schools. The education measure in the second phase is the adult literacy rate, available in the 1871 Population Census only.

The 1816 census also contains a wealth of additional information, including data on population demographics, religion, livestock, and occupations. We compile an extensive set of indicators of pre-industrial development from this and other sources, including indicators for pre-industrial production and endowment, natural resources, transportation infrastructure, urbanization and population density, and other historical patterns of development.

**Identification**

Aforementioned models of technological diffusion and growth models require a specification where the level of, rather than the change in, education affects industrialization. Therefore, our basic model expresses industrialization $IND$ towards the end of the first phase of the Industrial Revolution in 1849 as a function of the level of education $EDU$ and other explanatory factors $X$:

$$IND_{1849} = \alpha + \beta EDU_{1849} + X' \gamma + \epsilon$$  

(1)

where $\epsilon$ is a random error term and $\beta$ is the coefficient of interest. We will estimate this model using the cross-section of Prussian counties. In addition to using indicators for industry as a whole as the dependent variable, we can also perform the analyses for three separate industries: textiles, metals, and the group of all industries outside textiles and metals. In addition to 1849, we also measure the level of industrialization at a later stage, during the second phase of the Industrial Revolution in 1882.

To address the worry that education may be endogenous to industrialization itself, we suggest an instrumental-variable strategy. We identify the effect of education on industrialization in the face of simultaneity among the two by using education in 1816, *before* industrialization in Prussia, as an instrument for education at the two later periods. This instrument is not affected by changes in the demand for education that emerged *during* industrialization and thus isolates a part of the variation in education that is not determined simultaneously with industrialization. Thus, in equation (1) we instrument education $EDU$ in 1849 by education $EDU$ before the Industrial Revolution in 1816:

$$EDU_{1849} = \alpha_1 + \beta_1 EDU_{1816} + X'_{1849} \gamma_1 + \epsilon_1$$  

(2)

This first stage allows us to isolate that part of the variation in education in 1849 which can be traced back to pre-industrial variations in education. A fundamental point is that the Industrial Revolution is about new industrial technologies, both technical and organizational, which simply did not exist previously. Exogeneity comes from the fact that mechanized industrial production developed outside Prussia, in Britain. Such an approach is enabled by our unique panel dataset which includes education data *before* the Industrial Revolution. We can then follow the same Prussian counties during the two phases of the Industrial Revolution.

A potential remaining threat to this IV identification would be a setting where pre-existing education was correlated with other important omitted factors that drive the subsequent adoption of industrial technologies. To rule out such remaining biases, we include a set of indicators of pre-industrial development measured at the county level at the same time before the Industrial Revolution as pre-industrial education. Here, our pre-industrial development measures, covering the spread of pre- and proto-industrial technologies such as looms, brick-making plants, and watermills, urbanization, availability of resources for mining and weaving, measures of agricultural development including livestock counts and
agricultural employment, measures of public infrastructure like buildings and paved streets, and access to navigable water measured transport ships.

**Results**

Table 1 reports instrumental variable regressions across the 334 Prussian counties in 1849, towards the end of the first phase of industrialization. School enrolment in 1849 is instrumented by school enrolment in 1816, before the onset of the Industrial Revolution. These IV estimates depict the causal effect of education on industrialization in Prussia. As the first stage (column [1]) shows, 1816 enrolment provides a powerful instrument for 1849 enrolment. The dependent variable measures industrialization in 1849 and is further subdivided into three sectors: all factories outside metals and textiles, metal factories, and textile factories.

The results reveal that towards the end of the first phase of the Industrial Revolution, the share of factory workers is significantly positively associated with the enrolment rate in elementary and middle schools. When looking into the three sectors, this is particularly true for industries outside metals and textiles, and also for the metal industry, whereas there is no such significant association of education with industrialization in the textile industry.

**Table 1: Education and industrialization in the first phase of the Industrial Revolution**

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>School enrolment rate 1849</th>
<th>Share of factory workers in total popul. 1849</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>School enrolment rate 1849</td>
<td>0.052** (0.023)</td>
<td>0.035** (0.014)</td>
</tr>
<tr>
<td>School enrolment rate 1816</td>
<td>0.209*** (0.033)</td>
<td></td>
</tr>
<tr>
<td>Share of population living in cities 1816</td>
<td>-0.024 (0.044)</td>
<td>0.021*** (0.008)</td>
</tr>
<tr>
<td>Looms per capita 1819</td>
<td>0.264** (0.133)</td>
<td>0.141*** (0.047)</td>
</tr>
<tr>
<td>Steam engines in mining per capita 1849</td>
<td>0.062 (0.050)</td>
<td>0.040*** (0.006)</td>
</tr>
<tr>
<td>Sheep per capita 1816</td>
<td>0.015 (0.014)</td>
<td>-0.001 (0.002)</td>
</tr>
<tr>
<td>Share of farm labourers in total population 1819</td>
<td>-0.337** (0.144)</td>
<td>-0.041** (0.018)</td>
</tr>
<tr>
<td>Public buildings per capita 1821</td>
<td>5.462** (1.471)</td>
<td>-0.550 (0.359)</td>
</tr>
<tr>
<td>Paved streets 1815 (dummy)</td>
<td>0.018 (0.011)</td>
<td>0.002 (0.003)</td>
</tr>
<tr>
<td>Tonnage of ships per capita 1819</td>
<td>-0.005 (0.249)</td>
<td>-0.031** (0.013)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.169 (0.149)</td>
<td>-0.018 (0.023)</td>
</tr>
<tr>
<td>Observations</td>
<td>334</td>
<td>334</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.465</td>
<td>0.253</td>
</tr>
<tr>
<td>1st-stage $F$ statistic</td>
<td>41.29</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**: Instrumental-variable estimates, with school enrolment rate 1849 instrumented by school enrolment rate 1816. Additional controls: share of population < 15 years, share of population > 60 years, county area (in 1000 km²). Standard errors (adjusted for clustering by 280 original counties) in parentheses: significance at *** 1, ** 5, * 10 per cent. a First stage for columns (2) to (5). Source: Data for Prussian counties from different censuses.

Table 2 reports instrumental variable regressions for the second phase of industrialization. The literacy rate in 1871 is instrumented by school enrolment in 1816, before the onset of the Industrial Revolution. The IV estimates show a significant positive effect of literacy on total...
manufacturing employment in 1882. Again, 1816 school enrolment is a strong instrument for 1871 literacy in the first stage of the IV specification. The significant positive impact of education on industrialization is evident both in the industries outside metals and textiles and in the metal industry, but again not in textiles. It seems that by focusing on the textile industry, a lot of the existing literature may have missed the important role of education in the Industrial Revolution.

Table 2: Education and industrialization in the second phase of the Industrial Revolution

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Literacy rate 1871</th>
<th>Share of manuf. workers in total popul. 1882</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)***</td>
<td>(2)***</td>
</tr>
<tr>
<td></td>
<td>(0.043)</td>
<td>(0.014)</td>
</tr>
<tr>
<td>School enrolment rate 1816</td>
<td>0.280***</td>
<td>0.067***</td>
</tr>
<tr>
<td></td>
<td>(0.035)</td>
<td>(0.032)</td>
</tr>
<tr>
<td>Share of population living in cities 1816</td>
<td>0.078**</td>
<td>0.025***</td>
</tr>
<tr>
<td></td>
<td>(0.038)</td>
<td>(0.004)</td>
</tr>
<tr>
<td>Looms per capita 1819</td>
<td>0.424***</td>
<td>0.122*</td>
</tr>
<tr>
<td></td>
<td>(0.171)</td>
<td>(0.070)</td>
</tr>
<tr>
<td>Steam engines in mining per capita 1849</td>
<td>0.022</td>
<td>0.193***</td>
</tr>
<tr>
<td></td>
<td>(0.032)</td>
<td>(0.026)</td>
</tr>
<tr>
<td>Sheep per capita 1816</td>
<td>0.042***</td>
<td>-0.010***</td>
</tr>
<tr>
<td></td>
<td>(0.012)</td>
<td>(0.003)</td>
</tr>
<tr>
<td>Share of farm labourers in total population 1819</td>
<td>-0.369***</td>
<td>-0.052</td>
</tr>
<tr>
<td></td>
<td>(0.117)</td>
<td>(0.038)</td>
</tr>
<tr>
<td>Public buildings per capita 1821</td>
<td>2.122</td>
<td>-0.541</td>
</tr>
<tr>
<td></td>
<td>(1.607)</td>
<td>(0.465)</td>
</tr>
<tr>
<td>Paved streets 1815 (dummy)</td>
<td>0.057***</td>
<td>-0.022</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.022)</td>
</tr>
<tr>
<td>Tonnage of ships per capita 1819</td>
<td>0.005</td>
<td>-0.032</td>
</tr>
<tr>
<td></td>
<td>(0.136)</td>
<td>(0.022)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.332**</td>
<td>-0.074**</td>
</tr>
<tr>
<td></td>
<td>(0.139)</td>
<td>(0.037)</td>
</tr>
</tbody>
</table>

Notes: Instrumental-variable estimates, with literacy rate 1871 instrumented by school enrolment rate 1816. Additional controls: share of population < 15 years, share of population > 60 years, county area (in 1000 km²). Standard errors (adjusted for clustering by 280 original counties) in parentheses: significance at *** 1, ** 5, * 10 per cent. a First stage for columns (2) to (5). Source: Data for Prussian counties from different censuses.

Conclusion

The reported results constitute a substantial change in the empirical assessment of the historical role of education in the transition to modern industrial growth. We find that education had a significant effect on aggregate industrialization in both phases of the Industrial Revolution in Prussia. The aggregate result conceals important sectoral differences, though. In fact, there was no such effect in the textile industry in either phase of industrialization, possibly due to substantial path dependence that made change in this sector slow and incremental rather than disruptive, in particular in Prussia. But the effect of education is substantial during both phases of industrialization in the bulk of industry, outside
textiles. Industrial development in the non-textile sectors, which experienced more radical change or even evolved all new, depended on the availability of an educated population that was earlier aware of the productive potential of new technologies and more capable of adjusting to changed situations. Some regions lacked these skills necessary to adopt the new industrial technologies from and catch up to Britain. Quantitatively, the variation in education levels that existed across Prussian counties can account for a substantial part of Prussian industrialization. A simple linear simulation suggests that if all Prussian counties had only the education level of the 1st-percentile county, there would not have been any noteworthy industrialization in Prussia by 1849 and only about one third of the actual industrialization in 1882. The results suggest that Prussian educational leadership indeed translated into technological catch-up throughout the nineteenth century.

References
**Picking winners?**

**Renewable energy policy in the UK, 1974-88**

Campbell Wilson, University of Glasgow
(j.wilson.2@research.gla.ac.uk)
Supervisor: Professor Raymond G Stokes

**Introduction**

Following the oil shock in October 1973, when the price of oil quadrupled in the space of a few weeks, the UK government was forced to reconsider its energy policy. A key element in the response of many industrialized nations to the crisis was to consider the possibilities offered by ‘alternative sources of energy’ and the UK government reacted similarly by establishing and funding a programme for renewable energy R&D in 1974. To date there has been no academic research undertaken on the evolution of this programme and therefore no historiography has yet emerged. Portrayals of renewables development in the period that do exist provide some useful evidence but these tend to be written by participants active in the policy or technology of the time which lack the historical perspective gained through detailed archival research. However, the theme that has clearly emerged from these accounts – confirmed later by some stinging government assessments – is that the programme was unsuccessful in encouraging the development of renewable energy sources in the UK. Recent statistics for the penetration of renewable energy sources into the UK energy mix appear to confirm this.443

My thesis sets out the evolution of the UK’s renewable energy programme after 1974, thereby also addressing the historiographical lacuna that exists in our understanding of the reasons for Britain’s continued failure to exploit its vast natural energy resources.446 I suggest that the renewable programme was conceived within an entrenched *techno-institutional complex* (TIC), such as that first suggested by Thomas P. Hughes, which acted as a barrier to the development of alternatives.447 In this case the fundamental *technical* barrier in the UK was the National Grid electricity distribution system, created in the 1930s and constructed around a model of large thermal generating stations.448 The *institutional* barrier resided in the UK energy community that included the Department of Energy, the nationalized energy industries, the UK Atomic Energy Authority, and the various bodies that advised the government on renewable energy policy. This energy TIC represented the ascendant framing of energy policy in postwar Britain, fixated on the dominant fuel narrative of

---


445 BERR (Department for Business, Enterprise and Regulatory Reform), *Energy in Brief July 2008*, National Statistics Publication. In the UK in 2007, nearly 35 years after the need to develop renewable energy had been officially recognized, renewable sources accounted for just over 3% of total final energy consumption, and less than 5% of total electricity generated. These figures for renewables include hydropower.


industrialization’s historic ‘energy transitions’ and narrow economic calculation; and still largely convinced by nuclear power as the next great transition. My thesis shows that this left the renewable programme open to political tokenism and fatally vulnerable to interference from the energy TIC in the UK.

For my research I have accessed the vast amount of archive material on the renewable energy programme that resides at the National Archives at Kew. I have also been fortunate to have unrestricted access to the substantial personal archive of Professor Stephen Salter, one of the first and most prominent developers of wave energy devices during the 1970s. In addition to this, selected parliamentary debates on renewable energy and the output of key Select Committees have also been closely examined. This substantial archival research has been complemented with a selection of interviews with some of the key figures in UK renewables development, and a survey of the surprisingly wide contemporary coverage by the media of renewable energy. My research period is inconveniently bisected by the thirty-year rule on access to public documents and this has resulted in the need to also make extensive use of Freedom of Information requests. Building on the seminal work of Brian Arthur and Paul David on competing technologies and lock-in, my thesis develops an analysis of the fate of technological development when confronted with a locked-in system. This will show how multiple barriers to adoption emerged within what Laird termed the dominant ‘problem frame’ of the UK energy TIC. This interpretation challenges the view that fear of success in renewables led to a crude conspiracy among the traditional energy industries (in particular the nuclear lobby) to sabotage the programme during this time. Instead, close analysis of the UK renewable energy programme shows that this was more effectively achieved through a combination of many disparate factors predicating on the central theme of judging ‘success’ in renewables technology in the context of the prevailing energy paradigm.

### The UK renewables programme, 1974-88

Table 1: Department of Energy R&DD expenditure on Renewable Energy, 1975-87 (£ mil.)

<table>
<thead>
<tr>
<th></th>
<th>1975</th>
<th>76-77</th>
<th>77-78</th>
<th>78-79</th>
<th>79-80</th>
<th>80-81</th>
<th>81-82</th>
<th>82-83</th>
<th>83-84</th>
<th>84-85</th>
<th>85-86</th>
<th>86-87</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.3</td>
<td>0.6</td>
<td>0.8</td>
<td>0.9</td>
<td>2.5</td>
<td>2.5</td>
<td>4.8</td>
<td>5.4</td>
</tr>
<tr>
<td>Wave</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.8</td>
<td>3.0</td>
<td>3.3</td>
<td>4.4</td>
<td>3.1</td>
<td>1.0</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Others</td>
<td>0.5</td>
<td>0.3</td>
<td>1.3</td>
<td>0.4</td>
<td>3.2</td>
<td>5.0</td>
<td>9.7</td>
<td>7.1</td>
<td>6.3</td>
<td>7.6</td>
<td>5.4</td>
<td>5.9</td>
</tr>
<tr>
<td>ETSU*</td>
<td>-</td>
<td>0.7</td>
<td>1.2</td>
<td>1.1</td>
<td>1.4</td>
<td>2.2</td>
<td>2.1</td>
<td>2.0</td>
<td>1.9</td>
<td>2.1</td>
<td>2.0</td>
<td>2.3</td>
</tr>
<tr>
<td>Total</td>
<td>0.5</td>
<td>1.0</td>
<td>2.5</td>
<td>3.6</td>
<td>8.2</td>
<td>11.3</td>
<td>17.3</td>
<td>14.7</td>
<td>11.7</td>
<td>14.9</td>
<td>13.2</td>
<td>12.0</td>
</tr>
</tbody>
</table>

* The Energy Technology Support Unit – established in 1974 to manage the UK renewables programme.


In the fourteen years between 1974 and 1988 the UK government funded a wide-range of renewable energy R&D programmes. Table 1 shows that this funding rose sharply to a peak


in 1981-2 before falling away in the 1980s amid a combination of falling oil prices and a shift in the government’s attitude towards public expenditure. In contrast, at the outset of the programme the Labour government was clear that it did not consider it ‘practicable ... to fix a target date by which the renewable sources should be making a contribution’ and went on to suggest that ‘further sums’ would be made available ‘for the more promising lines of development’. Following a strong recommendation from Lord Rothschild’s Central Policy Review Staff in 1974 and a favourable government report, wave energy became the ‘favourite horse’ of the DoEn during the 1970s and a Wave Energy Programme was established in 1976, complete with its own elaborate infrastructure of committees and advisory groups.

**Case study: The Wave Energy Programme (WEP)**

Wave energy R&D provides a useful example of the evolution of the UK renewable energy programme in the UK. The 1978 White Paper concluded that it ‘constitutes a major potential’ and several device teams were funded to work towards overcoming the technical barriers and establishing costs based on the ‘reference design’ of a 2GW generating station. One of the most prominent developers in the WEP was Stephen Salter and his ‘Duck’ wave energy device. The measure of success in the wave programme was to be expressed in the price of electricity generation in pence per kWh, and the device teams were given an initial target of 20p per KWh. As Elliot pointed out, cost estimates for conceptual devices are ‘fraught with difficulties’ and despite rapid developments in wave technology these ‘seesawed dramatically’. Despite early promise the programme quickly hit a ‘watershed in wave energy development’ in November 1978 when estimated costs were found to be much higher than anticipated. The annual funding for wave energy R&D limped on, and despite drastic improvements in generation costs, the scope of the programme was scaled back by ACORD in 1980 before being closed down amid some controversy in 1982. During this time the target of 20p per KWh had been reduced first to 10p per KWh and then to 5p per KWh as the initial objectives of the programme were revised by the new Conservative government. A clear shift took place towards determining the ‘likely costs’ and ‘potential contribution to future UK energy supplies’ and after 1980 participating technologies were assessed regularly and classified as either *economically attractive, promising but uncertain*, or *long shot*. In every case the key measure was now almost solely the anticipated cost of electricity in pence per KWh. By 1985, in stark contrast to the view that prevailed throughout the 1970s, the

---


455 TNA, EG 16/80, WESC(76) P81, *The Organisation of the Wave Power Programme*, C. O. J. Grove-Palmer.

456 DoEn, Cmnd. 7236.


458 The cheapest form of electricity generation in the period was believed to be nuclear energy at around 3.3p per KWh. This figure was later disputed.

459 Elliot, *Renewables*. p.16.

460 Department of Energy (DoEn), ETSU R9, Wave Energy Steering Committee, Proceedings of a workshop on wave energy, Maidenhead, 16-18 December 1979.


government stated firmly ‘there are no circumstances in which we foresee wave power making a significant contribution to future energy requirements’.\(^{464}\)

‘The way forward’

In 1985 the Under-Secretary of State for Energy, David Hunt, announced a ‘historic day’ for the House as it devoted a full day to debating ‘alternative sources of energy’.\(^{465}\) He stated that ‘Our policy is to get the best possible value for money from our research and development funds and back winners’. Despite protests from the Opposition benches and caution from his own side over this approach to R&D, Hunt was setting out the new attitude of the government. By the end of 1987, as the House of Commons held its second major debate on the renewable energy, the Thatcher government’s growing impatience with government-funded R&D was becoming plain.\(^ {466}\) Michael Spicer, then Under-Secretary of State for Energy, explained to the House that the government’s position was ‘easily stated’; it was to ‘ensure the maximum commercial take-up of the results of the government’s research efforts’.\(^ {467}\)

By the early 1980s wind energy, initially felt to be of marginal importance, was grabbing the attention of the DoEn as a new system of government incentives in the United States prompted the Californian ‘wind rush’. Several DoEn visits had been arranged and officials returned glowing with enthusiasm for the potential of wind energy. Accordingly, amid falling oil prices the UK government focused its dwindling renewable energy budget on erecting a single massive 3MW experimental turbine on Orkney at a cost of £17m: but the new Conservative government had little interest in continuing to fund renewable energy programmes. In 1988 as Cecil Parkinson inaugurated the Orkney turbine he stated carefully ‘The government is committed to encouraging the development of all economic and environmentally-acceptable sources of energy’.\(^ {468}\) This was to prove the last effort of the UK’s government-sponsored R&D into renewable energy as later the same year the government published a report, *Renewable Energy in the UK: The Way Forward*, in which that ‘way forward’ was to quickly shift the R&D burden of renewables to private industry.\(^ {469}\) The paper confirmed the new approach by setting out plans for ‘initiating appropriate technology transfer mechanisms and establishing an institutional framework to facilitate commercial exploitation of the technologies’.\(^ {470}\)

**Conclusions**

This brief paper has attempted to explain the evolution of the UK renewable energy programme after 1974. Rather than choosing to explain failure by focusing on isolated, though well-documented, incidents such as the closure of the Wave Energy Programme in 1982, this paper has argued that these events were a manifestation of the programme being conceived and operated through the dominant energy TIC. This presents a view of the energy TIC in the UK systematically *smothering* renewable energy development through a close manipulation of budgets and economic targets. It argues, therefore, that the fundamental weakness of the programme did not reside in its techno-economic potential, but rather that it did not correspond with the dominant energy problem frame. Clearly, as the nuclear programme of the 1950s and after illustrates, governments were not daunted by huge capital

---

\(^{464}\) DoEn, ETSU 30, p.11. My italics.


\(^{467}\) HC Deb, 121:34, Col. 564, 30 October 1987


\(^{470}\) DoEn, *The Way Forward*, p.VII.
investment in speculative energy sources. However, the urgency of post-oil crisis energy solutions and the continued dominance of coal and nuclear presented renewables with impossible challenges. Despite significant technological advances and increasing economic viability through the period, renewable energy sources made little impact on the UK energy mix then, or since.
From civil liberties to human rights: British civil liberties activism and the New World Order
Christopher Moores, University of Birmingham
(cim305@bham.ac.uk)
Supervisors: Dr Nick Crowson & Professor Matthew Hilton

By the end of the twentieth century a marked shift had taken place in the rhetorical framing of the British Civil Liberties lobby. The National Council for Civil Liberties (NCCL) had become Liberty, operating under the tagline ‘Protecting Civil Liberties: Promoting Human Rights’, the Scottish Council for Civil Liberties had become the Scottish Human Rights Centre. This appeared to mark a new Zeitgeist, in which a broader, inclusive language of human rights replaced more individualistic conceptualizations of civil liberties.471

Great emphasis has been placed on the Second World War as a vital period for the emergence of a transnational human rights politics.472 Positivist and legal interpretations identified this in the United Nations Charter of 1945, the Universal Declaration of Human Rights (UDHR) in 1948 and the European Convention of Human Rights in 1950. Additionally, a number of American NGOs promoted a vision of rights during the war.473 It was hoped by Eleanor Roosevelt that these groups would provide the ‘curious grapevine’ to carry the words and significance of the UDHR to all peoples in all regimes.474

Despite this framework for a new rights based activism, the transition from a national civil liberties politics to an international human rights agenda failed to develop within Britain in the immediate postwar period.475 Reflecting specifically on the NCCL’s failure to mobilize a transnational politics between 1945 and 1948, an Executive Committee member speculated that this had been approached 10 years too early.476 Whilst a demonstrable and newfound interest in human rights emerged from within the British left in the 1940s this failed to find an effective organizational expression. Such a failure was demonstrative of wider divisions in left-liberal opinion and had important implications for human rights politics in the immediate postwar world.

A British notion of rights

Informed by a longstanding national debate proposing the organization of society under a system of government accommodating economic and social rights alongside political and civil rights, a distinct line of human rights emerged in leftist thought during the 1940s. This was the thrust of TH Marshall’s conceptualization of a 250 year evolution of British citizenship.477 Indeed, a discussion over the creation of a system gaining maximum social and economic expansion whilst simultaneously ensuring protection of individual liberty was central to the 1930s planning debates.478

Such concerns emerged clearly in a month long debate during February 1940 on the Rights of Man instigated by HG Wells and the journalist Peter Ritchie-Calder in the Daily

---

476 Cox interview with Lawson, University of Hull, Scaffardi Papers, DSF 4/3.
Herald. This aimed to provide a ‘world definition’ of rights to help ‘reconstruct the ruins’ of social and international relations. Calder and Wells hoped to build ‘a liberal socialist’ construction somewhere between the French Declaration of the Rights of Man’s civil and political rights and the Soviet Declaration on the Rights of Toiling People’s social and economic rights. As such this was the politics of planning gone global.

Such conceptualization of rights found a place within the national construction of the welfare state. John Boyd Orr, a member of the Herald’s drafting committee, considered the British Medical Council’s Charter for Health (1943) to be a ‘concrete companion’ and linked the debate’s ideas to the popularity of the Beveridge Report. Yet, this had shifted from a global politics aspiring to move from a capitalist society to global socialist world order into a version of rights framed within the nation state.

There was significant interest in this debate within the British left. Various left-liberal intellectuals, scientists, church leaders, the Labour Party leadership and spokespersons for unions, women’s organizations, and peace movements contributed. Along with a number of individuals who had been involved in the NCCL during the 1930s, its President and General Secretary contributed. However, despite an overcrowded meeting in Westminster to rally support, Calder was unsure that this could be channelled into an organization, suggesting that the audience would have applauded anything and was ‘escapist rather than constructive’.

Three further attempts were made to establish human rights organizations at the end of the war. Firstly, the NCCL attempted to expand its work internationally. In December 1947 it commented that the subject was ‘of the greatest importance’ and would be given a large amount of attention. Subsequently, it offered itself as a coordinating body for organizations interested in any aspects of human rights.

Secondly, George Orwell, Victor Gollancz, Arthur Koestler, and Richard Crossman started to create an international civil liberties and human rights group in 1946. This was tentatively named the League for the Freedom and Dignity of Man. Like Wells, Orwell wrote that the project sought a synthesis between political freedom and economic planning. According to Koestler this would have an international echo through establishing a transnational network of organizations.

Thirdly, a collection of left-liberal figures led by Gollancz met in 1950 and 1951 to form a new organization. He arranged a meeting with Roger Baldwin, former Director of the American Civil Liberties Union (ACLU) and Director of the International League for the Rights of Man who, at the request of the US State Department, was visiting 32 countries establishing branches of his League.

---

479 Calder to Kaempffert, 27 January 1940, National Library of Scotland, Calder Papers, Acc. 12533/3.
481 Calder to Sankey, 4 April 1940, Bodleian Library, Sankey Papers, 518/4, Wells (1940), p.80.
482 Boyd Orr to Calder, 2 January 1945, Acc. 12533/9.
483 Daily Herald, 1 January 1940, 11.
484 See Daily Herald, February 1940.
485 Kidd to Daily Herald, 7 February 1940, University of Hull, Liberty Archive, DCL 12/4.
486 Calder to Kaempffert, 25 March 1940.
487 Civil Liberty, 7, 14, December 1947.
489 Koestler to Orwell, 9 January 1946, Centre for Research Collections, University of Edinburgh, Koestler Papers, MS 2345/2.
490 Koestler to Orwell, 9 January 1946, MS 2345/2.
491 Koestler to Gollancz, 20 June 1946, MS 2345/1.
492 Gollancz to Grimond, 19 July 1950, Modern Records Centre, University of Warwick, Gollancz Papers, Ms.
Yet all these projects failed. The NCCL’s attempt to organize national and international conferences were unsuccessful. Plans for hundreds of delegates proved optimistic when only 69, representing just 15 countries and 4 colonies, attended. Indicative of the increasingly left-ward lean of the postwar NCCL the countries attending included Yugoslavia, China, Poland, and Czechoslovakia. The American delegates were members of the Chicago Council for Civil Liberties; a group the ACLU considered to be communist dominated. In fact, this was a difficult period for the NCCL generally as it faced consistent accusations of communist influence from the non-communist left. Indeed, the alternative groups under discussion justified their existence through claiming the NCCL to have been captured by communists. Attempts to follow up these conferences with further international meetings failed. Roger Baldwin, rejected involvement with a gathering in Czechoslovakia in 1948, questioning the viability of a human rights conference in a country which, following a coup, was a single party state. Apparently, this did not deter the NCCL, who sent LC White, its chairman and editor of the *Daily Worker*, to discuss the project.

Orwell and Koestler’s project also collapsed. Bertrand Russell pulled out, citing that intellectuals were more likely to rally against the atomic bomb. In the end funding dried up and Koestler realized that both himself and Orwell, living in North Wales and the Orkneys, were ill suited to running an organization. Furthermore, Gollancz’s efforts ended up highlighting ideological differences between liberals and socialists, as liberals such as Violet Bonham Carter pointed out differences in attitudes towards the closed shop and unions, property rights, and direction of labour. Gollancz blamed too much ‘stupid militancy’, especially on the part of Bonham Carter, and abandoned the project by April 1951 complaining that it was ‘no good trying to get an organization together if no one cared’.

Organizational interest in human rights thus stagnated in the late 1940s and early 1950s. The transition towards the age of rights, in which human rights supposedly emerged as a political-moral idea gaining universal acceptance, was slow. Even the United Nations Association, with 80,000 members in the postwar period, did not turn its support of the UN Charter into any notable activity. Annual General Meetings only briefly mentioned the subject whilst little enthusiasm was mustered for Human Rights Day celebrations during the 1950s.

**Explanations**

Ultimately, the NCCL’s difficulties in this period were ideological, political and tactical. It pursued a ‘Popular Front’ politics when this no longer seemed relevant or viable. This placed it within a Pro-Soviet tradition which appeared particularly problematic in reference to

---

494 *CL*, 7, 9, July 1947, 1.
495 G. Orwell to A. Koestler, 13 April 1946, MS 2345/2.
496 Baldwin to Allen, 16 November 1948, DCL/53/1.
497 Transcript of an Interview with Elizabeth Allen, 20 June 1947, DCL/77/4, White to NCCL Members, 30 July 1948, DCL/78/2 (1).
498 Koestler to Russell, 6 May 1946, MS 2345/2.
499 Phillips to Koestler, 19 March 1946, MS 2345/2.
501 Gollancz to Bentwich, 31 July 1950.
civil liberties. A number of policies, such as the support for the internment of Mosley, and a general unwillingness to criticize Soviet Union policy collapsed its remaining credibility to the non-communist left. By 1948 the Foreign Office’s Information Research Department even thought these divisions meant it was at breaking point.

All of which demonstrated the collapse of the Council’s Popular Front style left-liberal alliance. This was not a unique experience at this time as organizations like the Haldane Society for Socialist Lawyers and the Socialist Medical Association were also placed under great scrutiny. In fact, this was not unique to a British politics of rights and liberties. Similar organizations in France and German became dogged by political infighting and split along similar lines in this time period.

In the midst of these divisions, the intention of the UDHR to provide ‘a common understanding’ of rights had not materialized. The Foreign Office’s Legal advisor noted this suggesting that the government feared the Declaration would become a battleground for different views of its terms. Indeed, Harold Laski, who was involved in some of the organizations discussed, warned that a human rights document might separate rather than unite. Such fears seemed legitimate as ideological differences over conceptualizations of rights became part of the cultural Cold War. Because human rights are international, with transnational implications and located in global institutions, the subject was caught up in international divisions. This meant that NCCL criticisms of British civil liberties appeared to imply a defence of Soviet methods, whilst the International League for the Rights of Man, were viewed as having ‘different idea of democracy’ to the British and European left.

With this, the commitment to liberalism of individuals like Koestler and Crossman trumped their socialist concerns as Third Force trappings were abandoned and they became involved in organizations like the Congress for Cultural Freedom. The anti-totalitarianism of leftist advocates of a liberal socialism moved them into a liberal camp, whereas groups with historic connections to the Soviet Union sided with the Communists. In this polarization, thinking about global rights had to be accommodated within two sides, neither of these was the perfect location for the British left.

Although a liberal vision of rights does not imply an abandonment of economic and social rights, this was different to the optimism of the Herald debate. Whilst liberal socialist impulses did not disappear; Vernon, has demonstrated activists extending liberal and socialist democratic values abroad through forms of governing hunger, these were not couched in the language of universal human rights.

All of which has had implications for the politics of human rights. This loss of a liberal socialist ethos meant a supposed division between economic and social rights and

---

505 Lilleker, Against the Cold War (London, 2004).
506 Forster to Allen, 30 April 1948, DCL 32/12.
507 Gee to Joy, 30 September 1948, FO 1110/145.
513 Allen to Kahn, 28 September 1945, DCL/59/6.
political and civil rights emerged. This helped create the appearance of human rights as a liberal project with the USA as its ‘global hegemon’ which has contributed to more cynical recent studies of the subject.\textsuperscript{517} Indeed, Mazower’s account of the rise of human rights reminds us that this history must be seen as a triumph imbued with a fair share of cynicism for state interests.\textsuperscript{518} He is correct, but we should also be aware that governments and the UN were not the sole locations of this.

As Mazower points out, it does no good to disguise political struggles and conflicts that led to the emergence of human rights on the international arena.\textsuperscript{519} These had a profound role in defining the subject. They also demonstrate the difficulties organizations and individuals had in constructing versions of human rights outside of the interests of those producing more authoritative meanings.\textsuperscript{520}

The suggestion that the NCCL tackled this politics 10 years early hints at the significance of the 1960s, when a range of British organizations, including the NCCL, began successful application of the language of human rights to numerous issues, as a more important period for human rights activism.\textsuperscript{521} This can perhaps be explained then as a form of post-material ‘new’ politics, switching emphases to values, identity politics, and third world solidarity. Thus the cultural changes of the 1960s appear as significant as legal political frameworks in creating an activist human rights movement.\textsuperscript{522}


\textsuperscript{519} Ibid., p.397.

\textsuperscript{520} Nash, \textit{Cultural Politics}, p.31.


\textsuperscript{522} Keck & Sikkink, \textit{Activists Beyond Borders} (London, 1998), 200.
Explaining British voluntarism: unions, wage differentials, and the introduction of the statutory national minimum wage

Dennie Oude-Nijhuis, Leiden University
d.m.oude-nijhuis@hum.leidenuniv.nl

Over the years, few themes have received as much attention in scholarly accounts of British labour market and welfare state development as the enduring commitment of the British trade union movement to ‘voluntarism’, or free collective bargaining. It is widely established that the British trade union movement has throughout the twentieth century been far more reluctant to accept government intervention in the labour market than in particular its continental European counterparts. The British commitment to voluntarism has been particularly visible in the area of wage bargaining. Whereas most continental European union movements, for instance, lobbied for a statutory extension of collective bargaining outcomes in the decades before the Second World War and later pressed for the introduction of a statutory national minimum wage, British trade unions never demanded the former and for a long time strongly opposed the latter.523 British unions have also played a far less active role in the development of social insurance – even flat-out rejecting many of the welfare initiatives put forward by consecutive Labour governments during the first decades of the postwar period.524 Finally, the British trade union movement has always strongly resisted attempts to set up a long-term incomes policy.525

Existing explanations for the strong voluntarist inclinations of the British trade union movement are firmly embedded in notions of class and the conflict of interests between labour and the owners of capital. Most of them revolve around union fears over allowing a potentially hostile government to undermine key union functions.526 In this paper I present a different explanation for the strength of voluntarism in the United Kingdom by focusing on the resistance of unions representing privileged workers there against attempts to reduce wage differentials between their members and lower paid workers. As a result of its preoccupation with class divisions, the existing scholarship on labour market and welfare state development – whether comparative or exclusively focused on the United Kingdom – has paid scant attention to this.

This paper has two main theoretical aims. The first is to show that many instances of government intervention in the labour market involve distributive conflicts that are organized not around class but around occupational group, and that trade union support for redistributive government intervention in the labour market can therefore not be assumed. In much of the literature on wage bargaining and labour market development, trade union support for redistribution is taken for granted.527 The other major purpose of this paper is to show that conflict amongst workers over the redistributive consequences of government intervention in the labour market has been particularly severe in the United Kingdom because of the strong tradition of ‘craft’ or ‘occupational’ unionism there.

Synopsis

The resistance of British unions to many instances of government interference with the wage bargaining process can better be explained by their opposition against attempts to redistribute

---

523 See Fraser 1999; Minkin 1999.
525 See Dorey 2002; Lehmbruch and Schmitter 1982; Whiteside 1996.
between workers than by their anxiety over the consequences of allowing a potentially hostile government to undermine union functions. This notion is seldom put forward in the literature, because it conflicts with the tendency of scholars to focus on the division between labour and capital. In both the literature on labour market and welfare state development, most existing writings display a strong tendency to define the interests of workers in terms of their divergence from the interests of the owners of capital. This is the case with writings that focus specifically on the United Kingdom as with the broader comparative literature.\footnote{See Bain 1966; Cameron 1984; Corneo 1995; Dundon 2002; Korpi 2006; McLennan 2007: p.563.}

This class-based view of society has guided most attempts to explain the strong aversion of British unions against government attempts to interfere with wage bargaining outcomes. Ever since the eminent British law expert Otto Kahn-Freud popularized the term ‘voluntarism’, it has become orthodoxy to believe that any instance of trade union opposition to government interference with the labour market reflected the belief of unions that ‘what the state has given the state cannot take away’.\footnote{Kahn-Freud 1959: p.244.} In another classic work on the ‘tradition of voluntarism’ in the United Kingdom, Allan Flanders noted the popularity of attributing the voluntarist tendencies of the trade union movement to ‘the notion that unions have, as it were, lifted themselves into their present position of power and influence by their own unaided efforts in overcoming employer resistance and hostile social forces’.\footnote{Flanders 1974: p.355.} More recently, Geoffrey Finalyson explained the aversion of British unions to government intervention in the bargaining sphere by arguing that ‘In working class memory, the state could well be equated with sinister rather than friendly forces … There remained a suspicion that the ulterior motive was to hold the working classes in a subordinate position of tutelage’.\footnote{Finalyson 1994: p.123.} Completely in line with this thinking, Chris Howell recently argued that unions come to rely more on the state when they become weaker in terms of organizational strength.\footnote{Howell 2005: p.17.}

This interpretation of the voluntarist inclinations of the British trade union movement rests on the assumption that the resistance of unions against government interference with the wage bargaining process is based on the conflict of interests between workers and the owners of capital. Instead of turning to a state that has so often proven to side with the owners of capital, the argument goes, union leaders’ belief that the interests of their members are better served by relying on their own strength. This emphasis on the conflict of interests between labour and capital also explains the preoccupation of scholars with working-class strength. It is only when unions are sufficiently strong, scholars often argue, that workers can achieve their goals on their own. And conversely, it is only when unions continue to pursue their goals on their own that they preserve their appeal amongst workers – which makes voluntarism a core survival strategy of unions.\footnote{See Derthick 1979: 119; Rogin 1962: pp.521-2.}

Against these writings, I argue that union anxiety over the consequences of allowing a potentially hostile government to undermine union functions may explain some instances of the British union aversion to government intervention in the labour market, but they can certainly not explain their strong aversion to nearly any form of government interference with the wage bargaining process. In this regard, a crucial distinction has to be made. When scholars first used the notion of voluntarism to describe the peculiar features of the British industrial relations system, they referred mainly to the area of trade union recognition and union distrust of courts of law.\footnote{See Flanders 1974; Kahn-Freud 1959.} Over the years, however, the notion has come to be used to explain almost any instance of union opposition to government intervention in the labour market. Most significantly, the notion is now commonly used to explain their opposition to direct government interference with the wage bargaining process. Traditional voluntarist
explanations are now commonly invoked to explain the longstanding opposition of the TUC to the introduction of a statutory national minimum wage, its strong resistance to attempts to set up long-term incomes policies, its continual refusal to accept wage moderation in exchange for social security development, and even its lack of enthusiasm for many of Labour’s social security initiatives during the first half of the postwar period.

Yet when traditional voluntarist arguments alone are used to explain instances of trade union opposition to government interference with the wage bargaining process, several problems arise. One obvious problem is that these arguments are difficult to reconcile with the much greater willingness of most continental European trade union movements to accept government intervention in the field of wage bargaining. This greater willingness can hardly be explained by arguing, as is often done, that unions become more willing to accept government intervention in the bargaining sphere when they become weaker in terms of organizational strength. Nor can it be explained by arguing that the continental European union movements simply became less suspicious of their governments because the existence of so-called ‘neo-corporatist’ policy-making institutions resulted in a more ‘harmonious’ state of affairs there. After all, one could argue equally well, and arguably much more forcefully, that the occupational nature of union organization in the United Kingdom and the resulting fragmentation of the trade union movement there stood in the way of a successful development of such institutions in the first place.

Another problem is that the British trade union movement has not categorically rejected all forms of compulsion or legislation over the years. Despite their suspicion of government motives, Britain’s unions have for example supported many instances of legislation in the area of trade union recognition; despite their fears that government intervention could undermine their function, they have supported legislation for regulation of work hours and physical conditions of work. According to Allan Flanders, therefore, the trade union movement has ‘at times or in areas of industrial weakness [displayed] the greatest readiness to resort to the method of legal enactment, either because collective bargaining was unavailable or because its results were unacceptable’. Yet for some reason, there has for an exceedingly long time been no such readiness to accept legal intervention to deal with an area in which the results of the voluntary system have been most unacceptable, namely that of bargaining for the low paid. It is hard to see how voluntarist arguments alone can explain the opposition of unions against legislation to deal with a problem as severe as that of poverty in employment, while these unions did support other instances of statutory intervention.

Finally, and perhaps most importantly, it should be noted that not all of Britain’s unions have always been evenly strongly committed to the voluntary bargaining system. Over the years, many scholars have noted that unions representing skilled workers have been far more resistant to government intervention in the bargaining sphere than unions who also or mainly represented semi- and unskilled workers. Not coincidentally, skilled workers have a much stronger position on the labour market than semi- and unskilled workers. Whereas the former are typically quite able to achieve adequate wages and insurance against labour market risks through voluntary bargaining, the latter can often cannot. This gives these different

---

537 See Rhodes 2000: p.22.
538 See Baldwin 1990.
539 This is argued by Kahn-Freud 1959; Howell 2005. Yet in many countries with much higher organizational rates, unions have been far more willing to accept government interference. See Oude Nijhuis 2009 on this.
540 On this see for example Dorey 2001: 5; Scase 1976: p.28.
groups of workers a decisively different interest in government intervention in the wage bargaining process – as the purpose of such intervention is often to improve matters for lower paid workers.

This variation in the appreciation of government involvement in the wage bargaining process between the British trade union movement and its (largely industrially) organized continental European counterparts, between different types of British unions, and with regard to different instances of government involvement, all point to an explanation for the voluntarist tendencies of the British trade union movement that goes beyond union anxiety over the consequences of allowing a potentially hostile government to undermine key union functions. This explanation starts with the recognition that government intervention in the labour market often results in a redistribution of income amongst different categories of workers. Most of the time, these consequences benefit lower paid workers at the expense of higher paid workers. This is naturally the case with the introduction of a minimum wage, which can only improve matters for the lower paid when higher paid workers are willing to accept a lower share of the wage distribution. It is also the case with social security, which redistributes income and risk between more and less privileged workers through risk redistribution and, often, a system of contributions and benefits that works to the advantage of lower paid workers. Finally, even incomes policies aimed at achieving wage moderation often affect the distribution of wages amongst workers – if only because these policies are generally accompanied by relatively higher wage increases for lower paid workers.\(^{543}\)

These redistributive consequences have not figured prominently in scholarly attempts to explain the opposition of British unions against these instances of government intervention in the labour market. As a result of their tendency to focus on class divisions, scholars often overlook that workers do not only have an interest in competing with the owners of capital over their share of the national income, but that different categories of workers also have an interest in competing with each other over labours’ share of the national income.\(^{544}\) And when they do, trade union organization is often assumed to temper the potential for intra-class conflict through its emphasis on broad worker solidarity.\(^{545}\) Yet broad worker solidarity cannot be assumed – least of all in nations where the union movement is largely organized along occupational lines.

In the literature on labour market and welfare state development, trade unions are generally seen as key allies of left parties that aim to improve matters for poorer workers.\(^{546}\) The political efficacy of such parties is often viewed as depending on the degree to which they can count on strong trade unions, and trade union organization is frequently related to more equal levels of income distribution, a more generous level of welfare state expenditure, and a higher distributive impact of public spending.\(^{547}\) Trade unions, regardless of type of denomination, are commonly assumed to bring an egalitarian agenda to the bargaining table that includes wage compression between higher and lower paid workers.\(^{548}\) As a result, trade unions are commonly assumed to support the redistributive consequences of government intervention in the labour market.\(^{549}\) Instances in which they do not support redistributive government intervention in the labour market are subsequently often explained through considerations that focus on union suspicions of state motives or their fear that this will undermine their organizational appeal.

---

543 See Oude Nijhuis 2009 on this.
544 For the tendency to focus on class divisions, see for example See Esping-Andersen 1990: pp.22-6; Korpi 2006: p.172; Shalev 1983: p.320.
545 See for example Korpi 2006.
546 See Esping-Andersen and Van Kersbergen; Hicks 1999; Swank 2001; Pontusson 2005.
547 See Rueda and Pontusson 2000; Card, Lemieux, and Riddel 2003; Scheve and Stasavage 2009.
548 See Booth 1995; Pontusson, Rueda and Way 2002; Card 2001; Bowles 2006.
Yet union support for wage compression between higher and lower paid workers cannot be taken for granted. This is least of all the case in the United Kingdom, where craft unionism divides higher skilled workers from their lower skilled counterparts. Under such circumstances, there is no clear theoretical basis for the assumption that unions compress wages and much empirical evidence that they do not necessarily do so. For instance, there is much historical evidence that British craft unions have strongly resisted attempts to reduce wage differentials between their members and lower skilled manual workers during the postwar period. Table 1 demonstrates how successful they have been in this by showing the dispersion of weekly earnings of full-time manual men from 1886, when it was first measured, to 1982. The table shows the remarkable steadiness in the total variance of manual wages throughout this period. The lowest paid 10 per cent of manual workers only saw a relative increase in their wages compared to their higher paid manual counterparts during the period 1938 to 1960, which was mostly due to the tendency to resort to flat-rate as opposed to percentage increases during the war and the immediate postwar period. This custom was strongly resented by unions representing skilled manual workers, who managed to return to the custom to grant percentage increases in later years. The years between 1960 and 1980, which in many countries were the heydays of ‘the great compression’, consequently witnessed a restoration of previously existent wage differentials in the United Kingdom.

<table>
<thead>
<tr>
<th>Year</th>
<th>% median lowest decile</th>
<th>% median lowest quartile</th>
<th>% median upper quartile</th>
<th>% median highest decile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>68.6</td>
<td>82.8</td>
<td>121.7</td>
<td>143.1</td>
</tr>
<tr>
<td>1906</td>
<td>66.5</td>
<td>79.5</td>
<td>126.7</td>
<td>156.8</td>
</tr>
<tr>
<td>1938</td>
<td>67.7</td>
<td>82.1</td>
<td>121.7</td>
<td>145.2</td>
</tr>
<tr>
<td>1960</td>
<td>70.6</td>
<td>82.6</td>
<td>121.7</td>
<td>145.2</td>
</tr>
<tr>
<td>1970</td>
<td>67.3</td>
<td>81.1</td>
<td>122.3</td>
<td>147.5</td>
</tr>
<tr>
<td>1982</td>
<td>68.3</td>
<td>81.8</td>
<td>123.5</td>
<td>152.6</td>
</tr>
</tbody>
</table>


To understand the strong voluntarist tendencies of the British trade union movement, the resistance of unions representing skilled workers against any form of redistribution that benefits lower skilled workers has to be taken into account. The following section of this paper – which is not included here – does so by looking at the reasons for the long-lasting opposition of the TUC against the introduction of a statutory national minimum wage in the United Kingdom. Against existing writings, and through the use of archive sources, it argues that this resistance was primarily motivated by the opposition of craft unions against its effect on wage differentials.

---

550 See for example Pelling 1971; Scase 1976; Lowe 1993; Dorey 2002.  
551 See Pelling 1971.
Resource-led development across space and time

Lars C Bruno, Norwegian School of Economics & Business Administration
(lars.bruno@nhh.no)
Supervisor: Dr Stig Tenold

Introduction
Natural resources have since Sachs and Warner (1995) increasingly been associated with low economic growth, dubbed the resource curse, the existence of which is still debated. Most of the studies on the resource curse have looked at the second half of the twentieth century, however many resource-abundant countries in the nineteenth century did grow rapidly, see for instance David and Wright (1997).

The aim of this paper is to look at the characteristics of resource-led growth in both centuries to investigate if there are common mechanisms. A two-by-two comparison, with high growth Sweden will be compared with the more moderate growth in Finland in the nineteenth century; while high growth Malaysia will be compared with the more moderate growth in Indonesia. The paper will focus on the main resource sectors and compare the main hypothesis coming from the research on the resource-abundant nineteenth century growth countries with the main hypothesis coming from the research on the resource-abundant low growth countries of the twentieth century.

Resources and economic mechanisms
The recent resource curse literature has two robust findings of how resource abundance can be a curse through institutions and/or political stability. However, historical studies of resource-abundant countries have often rejected the resource curse hypothesis.

The gap between the recent resource curse literature and the economic history literature is summarized in terms of their view on natural resource sectors. The recent literature has a rent-based view that sees rents from natural resource production as gifts from nature and that the resource curse is caused by the economic and political consequences from managing these rents. The economic history literature has a technology-based view on natural resources in which natural resource sectors need a high technological development to fuel economic growth and that natural resources themselves are partly endogenous to the level of technology.

This paper will look at both these views and consider how they played a role in resource-led development in both centuries. There are two main mechanisms looked at in the rent-based view, the political institutions and market institutions. The political institutions are the functioning of politics, political stability and prevalence of corruption, all that can be difficult with an abundance of resources. The market institutions are how the government supported the development of markets to provision of property rights, a financial system and infrastructure. The technology-based view is looked at by considering three main mechanisms. The first is the development of human capital, both in general terms and in relation to the sector in question. The second is the development of technological supporting institutions to support the sector. The third is by looking at the technological development in the resource sector itself.

The choice has been to look at Finland and Sweden in the nineteenth century and Malaysia and Indonesia in the twentieth century. The first reason is that I wanted to compare the economic growth mechanisms for resource abundant countries are the same in the

552 Stijns (2005).
553 Mehlum, Moene and Torvik (2006).
554 Ross (2004).
555 David and Wright (1997).
nineteenth and the twentieth century. The second reason for looking at these countries is the pecking order of the countries, Sweden developed faster than Finland despite the latter having a per capita larger resource base; and Malaysia developed faster than Indonesia despite the latter again having a per capita larger resource base. The resource base itself was therefore not the explanation for the higher level of development in Sweden and Malaysia. Both Finland and Indonesia did develop and eventually caught-up, but the interesting period is how Sweden and Malaysia created the initial divergence.

The main hypothesis of the paper is that Sweden and Malaysia had more effective policies to promote the technological development in their main natural resource sectors. Looking at the economies in general would not give specific results; instead I have chosen to look at the main drivers in terms of exports in the four countries. For Sweden and Finland I have looked at the forestry sector and the spill-over to the wood-based and the paper industry. For Malaysia and Indonesia I have looked at the palm oil sector. There are several limitations to this study. First, the study does not look at causal mechanism as such, but identifies characteristics or stylized facts of successful resource-led growth economies. Second, the sectors focused on are for the most part sustainable resources, meaning that they do not have a ‘fixed’ endowment. Problems do seem to be more severe for non-renewable resources, but are not limited to these. A third limitation is that these are case studies and not large cross-country studies which limit the generality of the conclusion.

Forestry in Sweden and Finland, 1850-1914

Development

In the period 1850-1914, Sweden did have a higher economic growth measured in GDP per capita than Finland, despite the latter having a larger resource base measured as forests per capita. Also Sweden industrialized faster than Finland in the same period. Finnish exports did not increase as rapidly as Swedish exports until 1890. In the 1890s Finnish exports of wood increased dramatically, while Swedish exports of wood started to level out and eventually decline. The international demand conditions were partly similar for Sweden and Finland. Facing relatively similar international market conditions, the Finnish sector faced more supply constraints and/or higher transaction costs than Sweden at the beginning of the period. In figure 1 forestry production in the two countries is shown.

![Figure 1 - Forestry Production 1860-1914 in 1990 International Geary-Khamis USD](image-url)

Source: Calculations based on Edvinsson (2005); GGDC (2009) and Maddison (2009)
Rent-based view

Looking at the political institutions, both countries were politically stable during the period of study. Sweden has had no major war since 1814 and is one of the most politically stable countries in Europe. Finland was also politically stable during the period of study, but they were not formally independent. From 1809 to 1917 Finland was under the rule of the Russian Grand Duchy. But, Finland was allowed to have relatively autonomous policies with both countries having forms of constitutional democracies. Differences in political stability, public administration and politics were small and these therefore probably do not explain the differences in performance.

There were larger differences in the market institutions in the two countries. In Sweden, private property rights over forestry were strengthened in the first half of the nineteenth century and, by 1850, all forests in Sweden were privately owned. In Finland, half of the forests in the 1850s were public. These forests suffered from illegal logging and property rights were weakly enforced. In Finland property rights became more enforced during the end of the nineteenth century. This indicates that the institution of property rights were stronger in Sweden than in Finland. Other supporting institutions also seemed to have been more developed in Sweden.

Technology-based view

The wood resource-led growth in Sweden comprised of two stages; the first was when wood exports as a primary commodity dominated and the second stage was when wood-intensive manufacturing became the main export commodities. While raw materials exports became less important, Sweden used a lot its wood as inputs for the manufacturing sector, see figure 2. There were two main categories of wood-intensive manufacturing production. The one with the lowest technological sophistication and value-added was the wood product industries. The second was the paper and pulp industries which was more capital-intensive, had higher technological sophistication and had a higher value-added. The linkages from forestry were high with the manufacturing sector, see figure 3.
Sweden had a better utilization of the forests area as the yield improved over time. In 1870 the average yield measured as gross output was 4.8 million SEK per hectare; in 1890 this had increased to 8.2 million; and in 1910 the gross output was 10.9 million SEK per hectare.\textsuperscript{556}

Human capital increased during the nineteenth century in both countries. In Sweden the mandatory school system of 1842 increased literacy rates among the general population to almost 100 per cent in one generation.\textsuperscript{557} The increases in basic skills such as reading, writing and arithmetic were crucial for increasing technological learning, as it gave the ability to use written instructions in the form of blue-prints and handbooks. Another important development was the establishment of technical colleges which supplied the forestry sector with specialized human capital. Among the state-financed schools were nautical training schools (from 1842), forestry secondary schools (from 1860) and agricultural colleges (from 1887).

From the 1850s onwards there existed a network of institutions, industry and the government which was important for the technological upgrading of industries for products such as pulp, paper and engineering products.\textsuperscript{558}

![Figure 3: Sweden: Wood-based exports as % of total exports 1871-1906](image)

**Figure 3: Sweden: Wood-based exports as % of total exports 1871-1906**

---

**Palm oil in Malaysia and Indonesia, 1970-2006**

*Development*

Malaysia did have a higher growth rate measured in GDP per capita than Indonesia for the period 1970-2006, despite the latter having the largest resource base. As another parallel to the Sweden-Finland case, Malaysia industrialized faster than Indonesia in the same period. Malaysian exports grew faster than Indonesian exports, and especially within the palm oil sector, the Malaysian exports showed a faster technological development as Malaysia went from exporting crude palm oil to processed palm oil.

International demand conditions were similar for Malaysia and Indonesia. For palm oil, Indonesian exports did start to catch-up with Malaysia from end of the 1980s and Indonesia in 2006 became the main exporter of palm oil in the world, see figure 4. However, most of the Indonesian exports are still in crude palm oil. This is another parallel to the Swedish-Finnish case in which Finland caught up with Sweden especially following Finnish independence in the interwar and the post-1945 period.

---

\textsuperscript{556} Calculations using data from Statistics Sweden (1972b).

\textsuperscript{557} Blomström and Kokko (2003 p.5).

\textsuperscript{558} Ahlström (1992).
Rent-based view

The political institutions were relatively stable from the beginning of the 1970s. Malaysia launched the New Economic Policy (NEP) aiming to improve the wealth of the indigenous Bumiputera population which were poorer than the Chinese and Indian ethnic groups. The NEP targeted rural areas where Bumiputera were most numerous and palm oil was an effective sector to reduce poverty and increase income among Bumiputera. In similar fashion, Indonesia prioritized rural areas to keep political stability despite having a heavily centralized regime. Of the two economies, Malaysia did have a more liberal political regime despite not being fully democratic. Indonesia was an authoritarian state until 1998 when Soeharto was forced to resign. The public administration in both countries have been criticized for being corrupt, but most studies to find the indices of corruption lower than in other developing countries on a similar income level. The political institutions seemed to have been slightly stronger in Malaysia than in Indonesia.

Market institutions differed. In Malaysia property rights were better enforced than in Indonesia and were strengthened especially for the Bumiputera population. Malaysia also had a wide range of support institutions for the palm oil industry. The government launched the Federal Land Development Authority (FELDA) from 1957. These government schemes were designed to organize smallholder farmers into collectives to assist their production. The scheme was designed mainly to reduce poverty and decrease the amount of landless rural people. Given that there are economics of scale to palm oil production, smallholders were organized as a collective to take advantage of this. In Indonesia the growth in palm oil plantations was driven by the state owned plantations until 1988. Following 1988 the private sector was allowed to invest in palm oil.
Technology-based view

Malaysian economic growth in the 1970s and early 1980s was resource-led. Following the mid-1980s manufacturing exports became the main driver of the Malaysian economy. The resource sectors were important in financing the resource-led industrialization and in providing human capital to the new foreign direct investment led industrialization in the export free zones. However, the resource sectors, especially palm oil, continued to remain important on two levels. First, palm oil and rural development continued to be important for poverty elevation and the Bumiputera were more likely directly affected by the development in the palm oil sector than in the manufacturing sector which had a large degree of foreign ownership. Second, palm oil provided forward linkages to produce a range of manufactured goods with palm oil as input and more recently biofuel. As seen in figure 5 Malaysia went from exporting crude palm oil (CPO) to exporting mainly processed palm oil (PPO).

The Malaysian government heavily promoted education. The educational policy did increase literacy and general education levels, but the palm oil industry did have to compete with the growing manufacturing sector for the supply of labour. In many ways the rural development in Malaysia, spearheaded by the palm oil sector, did increase the stock of human capital which made the expansion in manufacturing possible. The government established schools which specialized in agricultural and palm oil technology such as the Universiti Pertanian Malaysia (UPM) which trained agricultural and agro-industrial engineers and agro-business graduates.

The Malaysian government also developed technical and market support institutions. The three most important were probably the Malaysian Palm Oil Promotion Council (MPOPC); Palm Oil Registration and Licensing Authority (PORLA); and the Palm Oil Research Institute of Malaysia (PORIM).

Conclusion

In all four countries crude exports of their natural resources occurred once political and market institutions were in place, supporting the rent-based view. However, the state’s role did go beyond the traditional market supporting role in Sweden and Malaysia; and previous studies indicate that these were vital for increasing the value-added and technological sophistication of both the natural resource sector and the forward linkages these natural sectors produced.
Evidence therefore seems to support the notion that a technology-focus when producing natural resource is appropriate if the goal is to promote a resource-led industrialization process, several mechanisms might be at work. First, increased productivity of the resource sectors allowing capital and labour to be invested elsewhere. Second, revenues coming from the resource sectors which can be re-invested in infrastructure and in the development of human capital. Third, increased forward linkages created by the resources into resource-intensive manufacturing allowing these economies a comparative advantage in these sectors as a result of their resource-base.

References


Groningen Growth and Development Centre (GGDC) (2009), 'Historical National Accounts Database’, http://www.ggdc.net/


Economic instability and economic growth in Singapore in the twentieth century

Ichiro Sugimoto, Soka University
(ichiro@soka.ac.jp)
Supervisor: Professor Dr Tan Eu Chye

Introduction
This study is devoted to examining the extent of economic instability and its impact on the economic growth of Singapore during the twentieth century. One of the salient features of Singapore’s economy is its high degree of openness to international trade. Basically, this nature remains essentially unchanged until today. Given this scenario, Singapore has been extraordinarily vulnerable to external shocks.

Nevertheless, Singapore has experienced two major changes in the twentieth century. The first involved the shifting of trade dependence from the re-export of primary commodities to the exports of domestic manufactured goods. Secondly, macroeconomic management which was dictated by the principle of laissez-faire under the British colonial administration shifted to government-interventionist fiscal and monetary policies during the era of self-government (Huff, 1994).

Against this historical backdrop, this study focuses on answering two basic questions relating to the issue of economic instability and its concomitant effect on economic growth. The first question seeks to examine the pattern of volatility of real GDP and its components over the century. The second question, on the other hand, examines the effect of economic instability on the economic growth of Singapore. The availability of long-term macroeconomic database stretching over the last hundred years (Sugimoto, 2009) enabled us to undertake long-term quantitative economic analysis of Singapore.

This study is organized as follows. Section 2 conducts a literature review. Section 3 outlines the definition of economic instability and examines the extent of economic instability of Singapore’s real GDP and its components. Section 4 conducts econometric tests pertaining to economic instability on economic growth. Finally, Section 5 provides concluding remarks.

Literature review
To date, many studies have been conducted touching on the issues of (i) the extent of volatility of GDP and its components and (ii) the effect of export instability on economic growth. Backus David K., Kehoe, Patrick J. (1992) and Bergman, U. Michael, Bordo, Michael D. and Jonung, Lars (1998) compared output volatility of developed countries during centuries and found that real GDP volatilities during the interwar era experienced much larger fluctuations than other periods although the extent of this higher volatility varies from country to country. In addition to real GDP volatilities, Backus and Patrick (1992) examined volatilities of each component of GDP. Some stylized facts were observed. Firstly, consumption expenditures have approximately the same standard deviation as output. Secondly, government spending exhibits little regularities with its volatility relative to output. Thirdly, volatilities of investment have generally varied, with the level of standard deviation being two to four times larger than output.

Relating to the effect of economic instability to economic growth, work has been initiated by Ramey, Garey and Ramey, Valerie A. (1994) who found that countries with large fluctuations in growth rates were inclined to have lower average growth rates. Many studies were conducted to identify the determinant variables relating to this issue; their focus being particularly with the effect of export instability on economic growth for both developed and developing nations. These studies found all three possible kinds of relationships between

559 This study does not include 1940-49 due to the absence of historical GDP estimates.
export instability and economic growth, namely, positive, negative and no relationship. Other than export instability, the following variables were investigated, namely, annual growth rate of exports as a proportion of GDP, terms-of-trade volatility, share of investment to GDP, annual growth rate of government final consumption expenditure as a proportion of GDP, population growth, gross domestic product per capita with time lag. In contrast to the above studies, no similar long-term empirical exercises were available for Singapore and other developing countries due to the dearth of long-term time-series data which stretch over the entire twentieth century. In this regard, this study attempts to narrow the existing research gap by providing a case study of a developing country like Singapore.

**Extent of economic instability**

In the case of economic instability, attention was given to examining the movements in the cyclical component of real GDP. Therefore, economic instability is defined as the short-run fluctuations of real GDP after adjusting for trend. It is measured by taking the absolute deviation of real GDP from its long-run trend. A working definition of economic fluctuation of time series was filtered by the Hodrick-Prescott method, which removes trend movements from the data.\(^{560}\) The choice of this method is mainly because many previous studies have applied it for empirical tests (Backus and Patrick, 1992).

Before turning to describe the observations of economic instability, to determine whether the GDP series of Singapore take on a trend stationary or difference stationary complexion, two types of conventional unit root tests were conducted, namely Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP). The results show that the time series of real GDP and its components are all integrated of order one, I (1), since only its first difference and second difference are stationary. This means that the null hypothesis of a unit root test cannot be rejected, indicating that Singapore’s time series of GDP and its components are difference stationary.

The periodical frame for pre-Second World War was determined based on the long-term international historical exercises led by Bergman, U. Michael, Bordo, Michael D. and Jonung, Lars (1998), namely Pre-First World War period (1900-13) and Interwar Period (1914-39). For the post-Second World War period (1950-2000), two sub-periods were set, namely 1950-74 and 1975-2000 based on the historical fact that Singapore’s economy had experienced a transformation from entrepôt trade involving the export of primary commodities to one that increasingly depended on the export of domestically manufactured goods.

Table 1(1) shows the instability indicators of each component of GDP which is derived from the standard deviation of the cyclical fluctuations from trend. The following observations can be made. The highest instability for all components of GDP was recorded during the interwar period, while petroleum swung the other way with the lowest degree of instability being observed during the last quarter of the twentieth century (1975-2000) for GDP, government final consumption expenditure (GFCE) and gross capital formation (GCF). On the other hand, the degree of instability for private final consumption expenditure (PFCE), exports and imports of goods and services (EXGS, IMGS) was recorded at its lowest in the pre-First World War period. Another important observation was that GDP and its components experienced an increase in economic instability during the interwar period (1914-39) compared to the pre-First World War period (1900-13). Subsequently, the degree of

\[^{560}\] The Hodrick-Prescott filter, described by Hodrick, Robert and Prescott (1980) and Kydland and Prescott (1982), defines a trend \(\{\tau_t\}\) for a series \(\{y_t\}\) as the solution to the problem

\[
\min_{\{\tau_t\}} \sum_{t=1}^{T} (y_t - \tau_t)^2 + \mu \sum_{t=2}^{T-1} [(y_{t+1} - \tau_{t+1}) - (y_t - \tau_t)]^2
\]

Fluctuations are defined as deviations from trend, \(y_t - \tau_t\). We use \(\mu=100\) in all tables concerning fluctuations of variables. A procedure for computing the trend was made based on Eview 4.1.
instability has constantly dampened in the third quarter (1950-74) and fourth quarter (1975-2000) of the twentieth century (See Table 1[2]).

Table 1(3) shows instability indicators of each component of GDP in relation to that of GDP. It was found that the relative instability indicator of PFCE was less volatile than GDP before the war, but surprisingly more volatile than GDP for the period 1975-2000. The other components of GDP experienced greater instability in the British colonial period. Among these, GCF showed the highest volatility. Throughout the period, the relative instability indicator of GCF to GDP was generally three times higher. There was a reduction in import and export instability as the century progressed.

Table 1: Results of instability of GDP and its components by selected period

<table>
<thead>
<tr>
<th>Period</th>
<th>GDP</th>
<th>Private Final Consumption Expenditure</th>
<th>Government Final Consumption Expenditure</th>
<th>Gross Capital Formation</th>
<th>Exports of Goods and Services</th>
<th>Imports of Goods and Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) The Standard Deviation of the GDP series using Hodrick-Prescott Methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1900-13</td>
<td>4.7</td>
<td>2.1</td>
<td>8.8</td>
<td>13.3</td>
<td>4.0</td>
<td>4.6</td>
</tr>
<tr>
<td>1914-39</td>
<td>12.4</td>
<td>7.5</td>
<td>11.5</td>
<td>30.5</td>
<td>11.0</td>
<td>10.1</td>
</tr>
<tr>
<td>1950-74</td>
<td>6.4</td>
<td>5.5</td>
<td>9.3</td>
<td>12.0</td>
<td>8.5</td>
<td>8.3</td>
</tr>
<tr>
<td>1975-2000</td>
<td>3.2</td>
<td>3.4</td>
<td>5.4</td>
<td>10.2</td>
<td>6.8</td>
<td>7.2</td>
</tr>
<tr>
<td>(2) Relative Instability Indicators of the Each Component of GDP (1914-39=100)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1900-13</td>
<td>37.7</td>
<td>28.0</td>
<td>76.5</td>
<td>43.7</td>
<td>36.8</td>
<td>45.5</td>
</tr>
<tr>
<td>1914-39</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>1950-74</td>
<td>52.1</td>
<td>73.4</td>
<td>80.3</td>
<td>39.2</td>
<td>77.4</td>
<td>82.3</td>
</tr>
<tr>
<td>1974-2000</td>
<td>25.7</td>
<td>45.1</td>
<td>46.3</td>
<td>33.5</td>
<td>61.6</td>
<td>71.3</td>
</tr>
<tr>
<td>(3) Relative Instability Indicators of the Aggregate Demand Components (GDP=100)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1900-13</td>
<td>100.0</td>
<td>44.9</td>
<td>189.1</td>
<td>285.5</td>
<td>86.4</td>
<td>98.5</td>
</tr>
<tr>
<td>1914-39</td>
<td>100.0</td>
<td>60.5</td>
<td>93.3</td>
<td>246.7</td>
<td>88.7</td>
<td>81.7</td>
</tr>
<tr>
<td>1950-74</td>
<td>100.0</td>
<td>85.3</td>
<td>143.8</td>
<td>185.9</td>
<td>131.8</td>
<td>129.1</td>
</tr>
<tr>
<td>1974-2000</td>
<td>100.0</td>
<td>106.2</td>
<td>168.4</td>
<td>321.8</td>
<td>212.7</td>
<td>226.9</td>
</tr>
<tr>
<td>(4) Cross-Correlations between Volatilities of Each Component of GDP (GDP=1.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1900-13</td>
<td>1.00</td>
<td>0.75</td>
<td>-0.08</td>
<td>0.36</td>
<td>-0.29</td>
<td>-0.59</td>
</tr>
<tr>
<td>1914-39</td>
<td>1.00</td>
<td>0.68</td>
<td>-0.11</td>
<td>0.78</td>
<td>0.56</td>
<td>0.47</td>
</tr>
<tr>
<td>1950-74</td>
<td>1.00</td>
<td>0.76</td>
<td>0.60</td>
<td>0.74</td>
<td>0.55</td>
<td>0.54</td>
</tr>
<tr>
<td>1974-2000</td>
<td>1.00</td>
<td>0.75</td>
<td>-0.37</td>
<td>0.77</td>
<td>0.74</td>
<td>0.79</td>
</tr>
</tbody>
</table>

In addition to the above two observations, Table 1(4) provides the results of cross correlations between volatilities of each component of GDP and GDP itself for selected time periods. PFCE and GDP showed relatively strong (0.70) and positive cross correlations for the whole period. A similar phenomenon was observed between GCF/EXGS/IMGS and GDP save for the period 1900-13. In the case of GFCE, cross-correlations of volatility have been weak and negative throughout the period, with the exception of the period 1950-74 which recorded a positive relationship (0.60).

Econometric tests on the effect of economic instability on economic growth

Regression tests were run with the growth rate of real GDP per capita as the dependent variable. The primary interest of this regression exercise was to study the effect of export instability on economic growth. In line with the works of Dawe (1993) and Nazrin (2000), other plausible explanatory variables were also included in the effect to improve the specification of the model and increase the explanatory power of the regression (see table 2). Data for the 1900-39 and 1950-59 periods represent my own estimates, whereas those for the more recent years were obtained from official publication releases entitled System of National Account 1995 Singapore and Asian Development Bank, Key-Indicators 2001.
As is described above, before turning to econometric regression analysis, unit root tests have been applied for both dependent and independent variables. ADF and PP unit root test results showed that the time-series appear to be stationary in their levels for (A, C, F, G, H) i.e., they are all integrated of order zero, I(0). On the other hand, unit root test on (B, D, E) were stationary in first differences rather than in levels. Therefore, (B, D, E) are difference stationary and integrated of order one. The time series regression should include only stationary variables. Therefore, alternatively, first difference is applied for the regression.

The estimating time span was from 1900 to 2000 covering three periods, namely 1900-39, 1950-2000 and 1975-2000. The first two periods were identified to see the overall picture of the pre-Second World War period vis-à-vis the post-Second World War era. Additionally, one specific period of 1975-2000 was studied to empirically test the effect of changes in the export structure shifting from the dominance of entrepôt based primary commodity export to the export of domestic manufactured goods since the middle of the 1970s. In this exercise, the export instability index measured by one-year time lags was applied.561

Table 2: *Explanatory variables for regression*

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(B) MACHIN</td>
<td>Change in share of Investment on Machinery and Equipment to GDP</td>
</tr>
<tr>
<td>(C) CONSTRUC</td>
<td>Change in share of Investment on Construction to GDP</td>
</tr>
<tr>
<td>(D) POP</td>
<td>Population Growth (%)</td>
</tr>
<tr>
<td>(E) GDPC</td>
<td>GDP Per-capita</td>
</tr>
<tr>
<td>(F) EXIN</td>
<td>Export Instability Indicator</td>
</tr>
<tr>
<td>(G) GREXSHAR</td>
<td>Growth rate of exports as a proportion of GDP</td>
</tr>
<tr>
<td>(H) GCShar</td>
<td>Growth rate of Government Final Consumption Expenditure as a proportion of GDP</td>
</tr>
</tbody>
</table>

The results of regression tests are presented in table 3. Importantly, the coefficient of export instability of first-year lag was negative and statistically significant at 5 per cent level for the period 1900-39 and 10 per cent level for the periods 1950-2000 and 1975-2000. The coefficient of export instability for the period 1900-39 was -37.81. This negative coefficient figure, however, reduced slightly to the level of -28.16 for the period 1950-2000. It is crucial to note here that negative coefficient on export instability for the period 1975-2000 has even scaled down to -10.07. The result of this econometric regression test has clearly found the phenomenon that the effect of export instability to real per-capita GDP growth became smaller once Singapore trade structure experienced diversification to the export of manufactured goods.

561 Several time lags were attempted for regression test. However, all regression results were insignificant.
Table 3: Regression results with the rate of growth of real GDP per capita as the dependent variable, 1900-39, 1950-2000, and 1975-2000

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTANT</td>
<td>7.92</td>
<td>4.50</td>
<td>5.92</td>
</tr>
<tr>
<td></td>
<td>(1.31)</td>
<td>(4.87)***</td>
<td>(14.12)***</td>
</tr>
<tr>
<td>CONSTRUC</td>
<td>-0.35</td>
<td>-0.08</td>
<td>-0.16</td>
</tr>
<tr>
<td></td>
<td>(-1.00)</td>
<td>(-1.00)</td>
<td>(-1.00)</td>
</tr>
<tr>
<td>EXIN (-1)</td>
<td>-37.81</td>
<td>-28.16</td>
<td>-10.07</td>
</tr>
<tr>
<td></td>
<td>(-1.89)*</td>
<td>(-2.30)**</td>
<td>(-2.03)**</td>
</tr>
<tr>
<td>GREXSHAR</td>
<td>0.001</td>
<td>0.001</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>(-0.57)</td>
<td>(1.56)</td>
<td>(4.65)***</td>
</tr>
<tr>
<td>GCSHAR</td>
<td>0.0001</td>
<td>0.001</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>(0.54)</td>
<td>(1.27)</td>
<td>(4.30)***</td>
</tr>
<tr>
<td>R²</td>
<td>0.1617</td>
<td>0.1670</td>
<td>0.6695</td>
</tr>
<tr>
<td>Standard Error of Regression</td>
<td>10.5555</td>
<td>6.4614</td>
<td>1.751</td>
</tr>
<tr>
<td>F-statistic</td>
<td>1.6391</td>
<td>3.0747</td>
<td>14.8536</td>
</tr>
<tr>
<td></td>
<td>F(5.38)=0.1871</td>
<td>F(4.49)=0.0368</td>
<td>F(4.26)=0.0000</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>2.3511#</td>
<td>2.1032#</td>
<td>1.8674#</td>
</tr>
</tbody>
</table>

Note: (1) (***, ** , *) Significant at (1%,5% and 10%) level respectively.
(2) Figures in ( ) refer to the t-statistics.
(3) Figures in [ ] refer to the marginal significance level.
(4) (#) Null hypothesis of existence of serial correlation is rejected at one per cent significant level.

Concluding remarks

This study examines the extent, causes and consequences of economic instability in Singapore during the twentieth century. Not unlike industrialized nations, the degree of economic instability experienced by Singapore has dampened in the post-Second World War period as compared with that of the pre-Second World War years. Most notably, highest real GDP instability was recorded during the interwar period though other periods also recorded a certain degree of real GDP volatility. Among GDP components, a relative instability indicator of PFCE was found to be less volatile than that of GDP. On the other hand, the relative instability indicator of GCF to GDP was almost three times. When we look at the relative instability indicator, PFCE, GFCE and GCF showed significant reduction of instability particularly during the last quarter of the twentieth century. Nevertheless, the degree of instability of EXGS and IMGS did not change overtime. In fact, instability of trade export earnings has the most significant impact on real GDP growth. The instability of the export sector has, in turn, been influenced by the extreme volatility of export commodities during the British colonial era. Nevertheless, diversification of trade in Singapore was initiated during the period of self-government since the mid-1970s.

This study attempts to conduct empirical tests relating to the effect of economic instability on economic growth. The result of regression analysis revealed that export instability was seen to reduce economic growth for both periods. The coefficient of export instability has reduced over time. Importantly, the negative coefficient on export instability for the period 1975-2000 has even scaled down significantly.
References

Special reports

Books and articles


Online sources
ABSTRACTS OF ACADEMIC PAPERS
I/A Integrated-Census Microdata

Chair: tba

Professor Kevin Schürer and Dr Edward Higgs, of the History Department at the University of Essex, have been awarded one of the ESRC’s largest personal grants to create an integrated dataset of the census returns of Great Britain for the period 1851 to 1911. This builds on existing work on census data carried out at Essex by the staff of the UK Data Archive. The £1,000,000 plus I-CeM (Integrated Census Microdata) Project will create one of the most important historical datasets in the world, and provide a key resource for British and international historians. The project team will bring together computerized versions of the censuses, and enhance these through standardization and harmonization. They will be working closely with commercial partners, who have created the digitized censuses for genealogical purposes, in a unique exercise in knowledge transfer. The three-year project started in April 2009 and aims to create a searchable dataset by 2012.

Kevin Schurer (Essex)

An overview of the I-CeM Project

Professor Schürer will explain the genesis of the project, its development, and the relationship established between the Essex History Department and its commercial partners. The structure and responsibilities of the I-CeM team, and the make-up of the Advisory Board, will be outlined. Issues of data access and data confidentiality will also be discussed. The possibility of linking the millions of individuals in I-CeM over time, to create a Victorian Panel Survey, will also be described. The use of the dataset by academics, policy-makers, schools and other groups, will be explored.

Edward Higgs (Essex)

The work of the I-CeM project team

Dr Higgs will describe the work that the I-CeM team will be performing on the raw census data to create the final dataset. The required tasks include: reformatting, checking and cleaning the existing census data; the development of a harmonized occupational coding schema; the coding of additional variables; the enhancement of the data by the inclusion of additional variables, such as social class; the production of a searchable GIS tool and on-line interface to the dataset; and the provision of documentation.

Kevin Schurer & Edward Higgs (Essex)

Possibilities for new research based on I-CeM

The I-CeM project will create a research resource unparalleled in its extent and geographical coverage. It will not only allow social scientists to undertake previous forms of research more readily within extended geographical and temporal contexts, it will open up entirely new avenues of research design and questioning. New subjects for analysis based on I-CeM might include (yet are not restricted to): changing regional occupational structures; the changing national social and economic profile of immigrants; changing regional and local differences in household structures; changing rates of under-enumeration; the experience of change over time for particular, widely dispersed, sub-groups of the population; and so on, and so on. The further possibilities for research presented by the proposed Victorian Panel Survey, and the ways in which it, and I-CeM, might be linked to modern longitudinal surveys will be discussed.
Francesca Carnevali (Birmingham) & Lucy Newton (Reading)
‘Made in Britain’: the manufacturing and marketing of British household goods, 1851-1914
This paper investigates the production of household goods made in Britain before the First World War. While the literature on the development of the staple goods industries (e.g. tobacco, clothing) and of the capital goods (e.g. iron and steel, coal, shipbuilding) is extensive, we know less about the manufacturing of the goods with which the Victorians and Edwardians filled their homes, such as furniture, carpets, glass, pottery, cutlery, papier-mâché goods, etc. Although studies on some individual industries exist, there is no overview of the role played by consumer goods made in Britain in the Second Industrial Revolution. Consumer goods were important not only in terms of their value to consumers themselves but also in terms of their contribution to Britain’s manufacturing output and employment and deserve more detailed analysis.

One of the reasons for this gap in the literature is that no data exist at a macro level to easily isolate the impact of these industries – output, employment, and export data are available only in aggregate form (e.g. glass with bricks) and in the case of the Census of Production only from 1907. This paper approaches the issue from a micro perspective: by assessing firstly the location of these industries (expanding Alfred Marshall’s list of industrial districts), then whether they were represented by trade associations and described in trade journals. This investigation is crucial as it will provide quantitative data for an initial assessment of output and employment. More qualitative information on the marketing of these goods will be provided by ‘lifestyle’ magazines, such as Hearth and Home, The Furnisher and Decorator, as well as from the catalogues of the Great Exhibitions and the archives of the department stores. The aim is to assess the impact of the production of such goods at a regional and national level but also the development of the marketing of goods for British households between 1851 and 1914. In particular, one of the questions addressed by this paper will be whether marketing relied on the notion of a ‘British’ style and how this was made fashionable.

Valerio Cerretano (Glasgow)
Cross-border corporate cooperation, technology transfer and industrial development: evidence from the global rayon industry, 1900-40
The soaring number of global alliances and similar arrangements in recent decades has fuelled a wide-ranging debate about cross-border corporate cooperation. There is general consensus that this cooperation entails substantial technology transfer and trading, with effects on innovative activity and industrial development. One wonders, however, whether this is a phenomenon of the last decades alone. Did cross-border cooperation affect technology transfer in the early days of western industrialization? Although generally uninterested in this debate and in these questions, economic historians have however granted attention to the cognate theme of European cartels, the most common form of cross-border cooperation from the 1870s until the 1940s. As many commentators (Fear, Jones, Schroeder, Wilkins) have recently emphasized, international cartels, while established in all capital-intensive and innovative industries, made an impact on the international diffusion of technology and industry.

This paper adds new material to this debate by examining cooperation in the global rayon industry, a fast growing, capital-intensive and innovative industry until the 1940s. There is evidence here confirming Mansfield and Baumol’s argument that voluntary cooperation resulted, first, from the inefficacy of the international patent system in securing a monopoly over proprietary technology and, second, from the leading firms’ attempts at
‘internalizing knowledge spillovers.’ The paper then corroborates the argument that international cartels were vehicles for technology transfer. Technology transfer was however characterized by two-way flows (from the proprietor to the recipient firm and back from the latter to other firms). This fact bore two consequences: first, innovations were, to a great extent, the incremental product of a network of firms and not necessarily of one specific national context; second, the cartel network offered rayon concerns a potential access to new technologies. This was a powerful stimulus to economic integration: the history of this trade confirms that policy-makers, in Europe and in the USA, were aware of the potential technological benefits deriving from cooperation and greater integration. It then comes as little surprise that Mussolini, for example, facilitated technological and other exchanges between Italian and British firms throughout the 1930s and even during the Second World War.

This paper, however, qualifies some of the points made more recently by Fear - who forcefully restated views which became popular in the 1940s – and Baumol with regard to ‘technology-sharing cartels’, suggesting new lines of research. One conclusion is that probably commentators have depicted too rosy a picture of the effects of the visible hand of cartels on the diffusion of technology. Not only did patent and other technological understandings lift entry barriers to would-be rayon-makers. In the rayon industry there also was a trade off between acquisition of foreign technology and output growth: old-established firms tended to surrender their know-how to low-cost and financially strong producers in exchange for rigid output limitations and uncompetitive prices in foreign outlets, charging in addition prohibitive prices for technological assistance. The history of this trade reveals that low wages contributed to raise the price of foreign technology.

The history of cooperation in the rayon industry then adds new dimensions to the study of technology transfer from a historical perspective. The literature on technology transfer is replete with case-studies of successful adoption of foreign technology. Although only implicitly, this literature (in particular Wilkins, 1974) seems however to assume the existence, first, of a free market for technology, and, second, of one-way flows of innovations (which then are by implication mature and not amenable to further development) from well-established firms to new entrants, paying therefore little attention to how market structure – and growing concentration in industry – influenced the international diffusion and adoption of technology. With regard to this point, the paper concludes that borrowed technology, even if successfully adopted by the recipient firms and countries, while being more expensive when the industry was highly concentrated, did not necessarily lead – as Gerschenkron seemed to maintain – to unrestrained growth.

After charting a history of the main actors into industry and their cooperative understandings, the paper examines the main technological exchanges between the leading actors into the industry, including the US firm Du Pont.
I/C Agriculture

Chair: Richard Hoyle (Reading)

Harry Kitsikopoulos (New York)
*Agrarian change and crisis in Europe, 1200-1500*

The proposed paper is the concluding chapter of a collection of essays which examine the agrarian changes that took place in Europe during the period 1200-1500, and the question of crisis ushered in the fourteenth century. Each one of the individual essays refers to a country/region, specifically England, France, Spain, (northern) Italy, Scandinavia, central Europe, Russia, and Byzantium. The project came together in an international symposium which took place at NYU’s site in Florence and is currently under review by Cambridge University Press (we were asked to revise and resubmit). If accepted, the collection of essays will be published under the author’s editorship.

The paper begins by synthesizing the empirical evidence presented in the eight essays. Despite the wide geographical spread, one remarkable characteristic of these economies were the commonalities they shared in terms of their technological ‘matrices’ and the normal levels of productivity they achieved; with some minor exceptions (e.g., Scandinavia), yields per seed were around 4:1 and yields per acre around 10 bushels (data are more scarce in terms of the latter). Exceptional levels of productivity were, however, recorded in isolated clusters (e.g., northern France, southeastern England). Commonalities aside, what strikes mostly the student of the period are the very different experiences these territories had, particularly in terms of population densities, urbanization rates, and the presence (or absence) of war activities.

There is little doubt that there was a crisis, the question is: what were its causes? The second part of the paper will discuss critically two main interpretations. According to one perspective, following a Smithian/Boserupian line of argument, pre-plague economies developed sophisticated market institutions to an extent determined by demographic growth and degrees of urbanization. The ongoing economic growth was disrupted, however, by certain exogenous factors such as livestock epidemics, a decline of temperatures and, of course the great pandemic (and in some cases by war campaigns). This mainstream view has certainly a lot going for it since the above circumstances triggered a domino effect which eventually led to a structural transformation of feudal institutions.

But one may argue, as did older views, that several European economies (those having gone further along a Ricardian path) were already in a state of crisis evident, for instance, in the case of England which lost 10 per cent of its population during the famines of 1315-7. A systemic collapse may not have been imminent but the type of economic growth taking place was not self-sustained. The author of the paper sides with this view and argues that regional variations regarding the type of seigneurial institutions played the crucial role (though not an exclusive one) in conditioning the rate of technological diffusion and levels of productivity. Liberal institutions, however, were exceptional and thus not sufficient in rescuing the continent out of its deep, structural crisis.

Jonathan Healey (Oxford)
*Agriculture and community in Elizabethan England: the Duchy of Lancaster survey books for the South and Midlands, 1591*

Late in the reign of Elizabeth, the crown-held Duchy of Lancaster undertook a survey of some 45 manors across seven counties in southern and midland England (Wiltshire, Berkshire, Hampshire, Oxfordshire, Northamptonshire, Dorset and Gloucestershire). Surveyors recorded perambulations of the manors, and collected data on manorial tenants, the size and tenure of their holdings, tenurial and inheritance customs, the management of common lands, and recent conflicts over common rights, as well as on other economic matters such as the state of woods and markets. They also gathered information on the quality of each manor’s land.

Jonathan Healey (Oxford)
Taken together, the surveys provide a fascinating snapshot of late Tudor rural society and its economy, particularly on the downlands of southern Berkshire and Wiltshire on which they focus.

This paper presents an initial analysis of the survey books. It uses them, firstly, to reconstruct the social structure of agriculture at the end of a century of population growth, commercialization, and growing inequality, paying particular attention to the development of a class of poor cottagers, and the relationship between social structure, landscape, and communal farming. Common rights more generally will form a second major theme: the surveys will be used to shed light on the difficult but crucial question of whether poor cottagers had been effectively excluded from communal agriculture by this point. Similarly, the paper will identify and assess some of the late-sixteenth-century threats to communal farming more generally in the 45 manors, notably enclosure and evidence of the so-called ‘tragedy of the commons’. Indeed, more generally, the surveys provide an opportunity to watch the post-medieval manorial courts in action at a time when – it has been suggested – they were on the cusp of decline. In addition, fresh data will be provided for women’s position as landholders in early-modern England, a poorly understood aspect of the early-modern rural economy, while the survey books also provide a useful opportunity to study the customary rights of widows. Overall, then, this provides a rare chance to peer into several crucial aspects of southern rural society at the end of the Tudor century.

Martin Dribe, Mats Olsson & Patrick Svensson (Lund)

Agricultural production and demography: the demographic response to local grain output in southern Sweden 1700-1860

Previous research has consistently found demographic responses to grain price fluctuations in preindustrial Europe, both at macro and micro level. In most of the research in this area, however, grain price variations have been interpreted as variations in grain production. This is perhaps to make a virtue of necessity, because reliable production output series are rare for pre-industrial agriculture. The problem, however, is that grain prices, in reality, entail much more information than the local harvest outcomes. Grain prices serve as a summary measure of the workings of the preindustrial economy, reflecting not only local harvest conditions but trade patterns and market integration. Accordingly, they were not locally determined, but highly correlated throughout Early Modern northwestern Europe, which makes it important to study not only demographic responses to prices but also to fluctuations in output.

In this paper we study the demographic response to short-term fluctuations in local grain output. Data on deaths, births and population at risk at the parish level comes from the Swedish Tabular commission, including all 400 rural parishes in the district Scania in southern Sweden 1749-1860. Additional information for a number of parishes is derived from the church records for the first half of the eighteenth century. Deaths are reported by age-specific, allowing us to discriminate between e.g. infant mortality, child mortality and adult mortality. For local grain production, unique sources are used, derived from individual farms’ tithe payments to the local clergy. The newly established Historical Database of Scanian Agriculture provides us with data on agricultural output for more than 2,000 farms in 34 parishes in Scania. On average, 450 farms are represented each year. Together they cover the period 1700 to 1864, making a total of more than 80,000 observations of farm production. The tithe accounts are very detailed, containing information on individual crops as well as the animals born each year on each farm. The sample reflects a broad selection of the province’s geographic and socio-economic conditions.

For comparison, the analysis will be carried out on two levels. The first level is a ‘traditional’ analysis of demographic response to price fluctuations. The second level is demographic response to local grain output. Birth rates and death rates on parish level are compared to local productions series. Both food production and food prices affected short-term economic conditions in preindustrial society; exactly how depended on whether prices
were exogenously determined or not. If prices merely reflected the local harvest, prices and output would measure the same thing. However, if prices did not completely follow harvests, because of price regulations, trade or other factors influencing prices, changes in output and prices would affect living conditions separately as well as jointly. By comparing production responses with price responses the significance of local harvests can be isolated from the impacts of other economic factors.
I/D Occupational Structure

Chair: tba

Leigh Shaw-Taylor (Cambridge)

The occupational structure of England and Wales c.1700-c.1850

This paper arises from two research projects funded by the ESRC and a new research project funded by the Leverhulme Trust. Results from the ESRC projects on male occupational structure 1750-1871 have already been presented at the EHS annual conference. The earlier work suggested that the increase in the secondary sector’s share of male employment between 1750 and 1850 was modest, rising from around 42 per cent to 46 per cent over the century. This suggested that most of the increase in the rise in the secondary sector’s share of employment took place somewhere between 1500 and 1750 but shed no light on the pace of developments within that period.

As part of the Leverhulme funded project we are collecting male occupational data from around 800 parish registers (there were around 11,000 in total) across England and Wales c.1700. This should allow us to provide more robust estimates of male occupational structure for the period c.1700 than we have hitherto been able to provide for the second half of the eighteenth century. This dataset should finally end our dependence on Gregory King’s problematic estimates of occupational structure and allow us to chart the change in male occupational structure across the whole of the eighteenth century. In turn this will allow us to see how far development had proceeded by 1700 and how much change took place during the eighteenth century.

The paper will also explore the possibility that a major decline in female labour market participation, as a consequence of the mechanization of spinning, at the turn of the eighteenth and nineteenth century, was large enough to counteract the modest rise in the secondary sector’s share of male employment. In other words it is possible that the secondary sector’s share of total employment actually fell between 1750 and 1850. If this were so, then it would have major implications for our understanding of productivity change in the classic industrial revolution period. Any overall fall in female labour market participation in the period would mean that overall productivity increases in the market-sector of the economy are currently under-estimated. A sharp fall in female employment in the secondary sector over this period would mean that secondary sector productivity rises have been significantly under-estimated.

Osamu Saito (Cambridge Group & Hitotsubashi)

By-employment and historical occupational structures in comparative perspective

By-employment was common in many economies at both ends of historic Eurasia. In Asian countries such as Tokugawa Japan, as Thomas Smith pointed out decades ago, much of rural manufacturing and commerce was carried out by peasant farm families, mostly on a seasonal basis, but at the same time oriented towards the market rather than home consumption. For early modern England, as Daniel Defoe’s well-known account of the West Riding suggested, the association of rural industry with pastoral farming has long been recognized; in continental European regions too, proto-industries are said to have offered non-farm job opportunities to women of peasant cultivators. Analytically, therefore, the concept of by-employment can be important in the studies of early industrialization as: 1) a phase of industrial development before the factory, as emphasized by proto-industrial theorists; 2) one of the ways in which labour was transferred from one sector to another, thereby determining the ‘true’ occupational structure of a country in that phase of development; and 3) a form of labour input, without paying attention to which we cannot properly measure labour productivity of an industry where the factory was not the dominant form of production. With these points in mind, the paper explores the available evidence for Europe and Asia.
Occupational structures in early phases of development are often inferred from early censuses. However, many census takers were concerned only with people’s main occupations. When by-employment was widespread but not covered by any survey of occupations, a picture we have from the existing censuses of occupations is distorted. Proto-industrial theorists brought such a situation to light by focusing on peasant families taking up a by-employment in non-agricultural activities such as textiles. They thus found that in many areas of early modern Europe women not only worked on the family farm but were also engaged in spinning, weaving or knitting. In other words, those farm women were by-employed, supplying part of their work time to the non-farm sector in the form of by-employment. In the same period of development, however, there must have been another type of by-employment: rural craftsmen and proto-industrial workers having a sideline in farming. In their case, the main occupation was in the secondary sector and the subsidiary in the primary sector. Although not much attention has been paid to the latter case in the thesis of proto-industrialization, this clearly suggests that the phenomena of by-employment went both ways. Whether or not the flow of by-employments from the farm to the non-farm sector outnumbered the reverse flow of by-employments depends on which area we are looking at. The balance may well have varied from district to district, from country to country and, probably from period to period too. This paper explores in which way this balance went, as well as to what extent by-employment was widespread, in Asian and European countries.

The agenda involves a cross-cultural comparison, for which we have to have a clear definition of by-employment. The phenomenon has often been described as a sideline activity, dual employment, or multiple occupation of the peasant family, but we should not assume that by-employment was unique to a peasant society. This is the first point to be made explicit. A poor English agricultural labourer too might have a sideline in, say, transport. The second consideration is that while it is not theoretically impossible to define by-employment at both household and individual levels, we should focus on the case of an individual’s multiple occupation. Otherwise, we would have to regard an agricultural labourer whose wife performed midwifery as an example of rural by-employment. The third point is concerned with a case in which two related occupational descriptors are given to an individual member of the family. In the Japanese records, agriculture and sericulture were regarded as separate occupations and it is the latter that was considered the subsidiary occupation. Yet, this combination is not dissimilar to that of arable farming and cattle or sheep grazing in English pastoral areas, where, however, this mixed farming was never regarded as a form of by-employment. For cross-cultural comparison, therefore, it is wise for us not to consider such combinations as by-employments but to focus on cross-sectoral combinations of occupation.

This paper examines England, France and Germany for Europe, and Indonesia, Japan and Taiwan for Asia, based on a survey of literature and also on papers presented at a conference organized by the International Network for the Comparative History of Occupational Structure (INCHOS), held in Cambridge, July 2009. It will be argued that in Asia the majority were the cases of peasant farmers having a subsidiary employment in industry, commerce or transport: secondary and tertiary sector occupations are more likely to have been hidden than the other way round. In continental European countries, on the contrary, it seems that those who were working in manufacturing and commerce but having a sideline in agriculture often outnumbered farm people having a non-agricultural by-employment. In England, while there were non-agricultural by-employments in areas of family farms, on the one hand, and cases where ‘cottage agriculture’ was undertaken by rural craftsmen, on the other, it is likely that the overall extent of by-employments had already become insignificant by the time when the first censuses were taken.

Finally, all this has implications for sectoral labour productivity estimates. While in countries like England where by-employment was no longer important at the end of the eighteenth century, previous calculations will be least affected, the average labour productivity ratio of the secondary to the primary sector has been somewhat understated in
countries, such as Germany, where by-employed peasant farmers were outnumbered by craftsmen and industrial workers having a sideline in farming. On the other hand, the ratio must have been overstated in countries like Japan where farm family non-agricultural by-employments were widespread. Any scenarios of sectoral labour productivity change derived from previous occupational statistics, therefore, have to be revised accordingly.

Tony Wrigley (Cambridge)
The value of geographical discrimination: the population of England 1801-51

The nature of organic economies implies that the bulk of the labour force will be employed in agriculture. This in turn means that the distribution of population is closely linked to the distribution and quality of land suitable for agriculture. When primary occupations dominate the scene, therefore, population densities tend to be relatively uniform across the country when allowance is made for land unsuitable for agriculture. But when secondary and tertiary activity provides employment for an increasing proportion of the workforce population becomes increasingly concentrated. Population increase is limited to a few areas instead of being widely spread. When the English population more than doubled in the later eighteenth and early nineteenth century in much of the country, where agriculture remained the chief employer, the rise was very modest, whereas in a few places, where industry, mining, and commerce flourished, population quintupled or even decupled. The nature of the changes taking place cannot be appreciated accurately if data are available only for large units such as the county but becomes increasingly clear if the same data are presented using smaller units. For example, information for the period 1801-51 is available for the country as a whole, for registration counties (41), for registration districts (576), for registration subdistricts (1,827), and for individual census places (c.15,000). This makes it possible to illustrate the way in which increasing geographical detail clarifies the nature of the changes taking place. This paper will explore and illustrate this point.
I/E Discrimination and Tobacco

Chair: tba

Joyce Burnette (Wabash)

*Testing for wage discrimination in nineteenth-century US manufacturing*

In spite of the large body of research on labour market discrimination, we are just beginning to map out where and how discrimination operated in the past. In this paper I test for wage discrimination in nineteenth-century US manufacturing. I find that, in contrast to the twentieth century, there is no evidence of wage discrimination in the nineteenth century.

This paper examines wage discrimination, which occurs if the relative wage paid to females is less than their relative productivity. Barbara Bergmann’s crowding model provides a model of discrimination that implies no wage discrimination, so even if there is no wage discrimination, discrimination in the form of crowding may exist. The method I use in this paper identifies only wage discrimination, and cannot detect the presence of occupational crowding.

Most studies that claim to measure wage discrimination do not measure the marginal product of male and female workers, but use an Oaxaca decomposition to divide the wage gap into a portion explained by observable characteristics and an unexplained portion. Though the unexplained portion of the wage gap is often used as a measure of wage discrimination, it is not well suited to this purpose. The unexplained portion of the wage gap contains, not only wage discrimination, but also the effects of any omitted variables. Fortunately, there is a more accurate way to measure wage discrimination. Cross-sectional firm data can be used to estimate production functions, and to directly estimate the productivity of female workers relative to male workers. This more accurate measure of productivity ratio can be compared to the wage ratio to test for wage discrimination. There is now a small but important body of literature that tests for wage discrimination using productivity estimates from production functions. Some of these studies are historical, and some use more recent data. Some studies conclude that there is wage discrimination, and some studies conclude that there is no wage discrimination.

I estimate a nested Cobb-Douglass production function:

\[
\ln VA = \ln C + a_1 \ln K + a_2 \ln (M + b_1 F),
\]

where VA is value added at a particular firm, K is capital, M is the number of male workers, and F is the number of female workers. The parameter \(b_1\) gives the productivity of a female worker relative to a male worker. This specification allows male and female workers to be perfect substitutes for each other, though not necessarily at a ratio of one-to-one. Most existing studies that estimate production functions from nineteenth-century manufacturing data aggregate total input by assuming that \(b_1\) is equal to the female-male wage ratio. Instead, I estimate \(b_1\), so that I can test whether it is equal to the wage ratio.

I apply this method to data from US manufacturing firms over the period 1833 to 1880. I use data from Massachusetts, and from the textile industry, from the 1833 McLane Report. I also use samples from the 1850 through 1880 censuses of manufacturing compiled by Atack, Bateman, and Weiss. I estimate productivity ratios in textiles for 1850 and 1860, and in all manufacturing for 1850 through 1880. The 1870 and 1880 censuses did not report wages by gender, so for those years I must estimate the wage ratio.

I estimate that, in 1833, females were 49 per cent as productive as males in Massachusetts, and 56 per cent as productive in textiles. By 1860 females were 54 per cent as productive as males in all manufacturing, and 76 per cent as productive in textiles. By 1880 women were 78 per cent as productive as men in manufacturing. In no case do I find a significant difference between the female-male productivity ratio and the female-male wage ratio, so I conclude that there is no evidence of wage discrimination. This result supports
Goldin’s claim that wage discrimination appears in the US around the beginning of the twentieth century.

**Maria Stanfors** (Lund) & **Tim Leunig** (LSE)

*Piece-rates and prosperity: evidence from the late nineteenth-century tobacco industry*

This paper returns to the question of what accounts for the difference in earnings between men and women, notably whether it is productivity differentials or discrimination that is the driving force behind the gender earnings gap? The best way to understand the causes of gender-differentiated wages is to look within firms, both at the gender assignment of individual roles, and at the wages for people doing (apparently) identical work. This paper does this for the Swedish tobacco industry in 1898 and 1908. We investigate this industry for three reasons.

First, the quality of the data is very good. We know individual wages, as well as a host of information about both the worker (age, experience, as well as union membership, marital status, etc) and about a firm (production quantities and values, for example). In a really unique way we are able to follow individual workers and firms after 10 years of economic and societal change, which meant rationalization in the tobacco industry. Second, the industry employed large numbers of both men and women. Third, this is an industry in which some workers were paid piece rates and some workers were paid time rates. This allows us to investigate the effect of the payment system on gender differentials. By using the two panels rich in information, we investigate two related discrimination issues. First, were piece rate cigar makers – the skilled aristocracy of this industry – paid differently by gender? We find that in both years they were, but that the differences can be more than explained by differences in characteristics such as age and experience. Second, we ask whether men were more likely than women to be promoted from the relatively lowly paid time rate section of the industry to become piece rate workers. Although, in line with work by Joyce Burnette and Claudia Goldin, we might expect firms to pay piece rate workers ‘fairly’ it is not at all obvious whether we would expect them to allocate workers to higher paid positions ‘fairly’. In fact we find that they do: women were much less likely to be on piece rates, but given their characteristics they were as likely to make it as men. There was no glass ceiling in this industry. The reason that women are (much) less well paid is that age and experience mattered, and for some combination of societal expectations and personal preferences, women are more likely to spend time away from the labour market raising children, to the detriment of their earning potential.

**Beatrice Moring** (Cambridge)

*Alcohol, tobacco and intra-familial power structures*

In the late nineteenth century, the temperance movement and social reformers highlighted the fact that a considerable part of working class income was spent on drink. A survey of the 1890s by Rowntree and Sherwell, revealed that in no less than 23 per cent of the families 5 shillings a week went directly to the pub and in another 30 per cent between 2 and 5 shillings was spent on alcohol (J. Rowntree and A. Sherwell, 1900, The Temperance Problem and Social Reform). While consumption statistics recorded high levels of drinking the working class budget studies did not always do so (A. Dingle, Drink and Working-Class Standards in Britain 1870-1914, 1972).

In the study of the late nineteenth century by the US Department of Labour into the cost of living of the working classes, efforts were being made to register spending accurately and comparatively. While it is likely that under-registration did take place the study allows comparison between specific occupational groups and different nationalities.

The aim of the presentation is to raise the question whether the level of consumption of alcohol and tobacco by the male bread winner appears to be linked to the level of economic power in the household, to the type of occupation or to geographic location. The question will
be approached through an analysis of consumption by different occupational groups and in
different countries in the late nineteenth and the early twentieth century. The level of power
will be measured as economic input of different family members.

In addition to data from the sixth and the seventh reports of the US Department of
Labour the study will make comparisons with other working class budgets from early
twentieth-century Britain and surveys from the Nordic countries and Germany.
I/F  Stock Markets

Chair: Carsten Burhop (Max Planck)

Patrick Walsh (University College Dublin)

The Bubble on the margins: The South Sea Bubble in Ireland and Scotland

It has been contended by several scholars most notably Julian Hoppit, in an influential survey article, that the economic and geographic impact of the South Sea bubble has been exaggerated. This paper challenges this prevailing orthodoxy that the phenomenon was limited to the environs of London, and more particularly to the City. Contemporaries across the British Isles did not see it this way. This paper is going to examine the effects of the Bubble on the peripheries of the British state looking particularly at the experience of the crash of 1720 on Ireland and Scotland, drawing on the results of a wider research project, I am currently undertaking. The results of this research show that not only were there greater levels of investment from these regions than has traditionally been allowed for but that the effects, of the collapse of the Company’s share price in autumn 1720, on the wider economy were also significant. This paper will argue that these findings are significant not just in terms of understanding the impact of the Bubble, but also in developing our understanding of the financial revolution within the wider British Atlantic world. This paper will begin by outlining the current debate on the extent of the financial revolution and the position of Ireland and Scotland within this debate.

This paper will look at the extent of Irish and Scottish investment in the South Sea Company drawing on extensive archival research as well as the burgeoning recent literature on investor behaviour during the bubble period. Individual investor profiles will be examined as well as larger networkers providing insights into the profile of the investing communities in both countries. These typologies will be compared across Ireland and Scotland but also with existing categories of investors identified for the London capital markets in this period. They will also be compared with other sources including subscription lists to other financial schemes including the Company of Scotland and the abortive scheme for a Bank of Ireland in 1720-21. The impact of these investments on the existing financial infrastructure in Dublin and Edinburgh will also be examined looking at the resulting contractions of credit and liquidity problems which affected both provincial capitals.

The second section of this paper will concentrate on the effects on the wider economy, looking particularly at Ireland, but also drawing comparisons with the Scottish experience. These effects included initial rises in the value of land, as successful speculators attempted to spend their profits, followed by a wider depression as the difficulties in obtaining credit and the severe depletion in Irish specie made the collection of Irish agricultural rentals almost impossible, helping to spark off a decade of economic crisis. The importance of the stock market crash as a catalyst for this period of crisis will be analysed, looking briefly at the differences between the contemporary perception as articulated by Jonathan Swift and his contemporaries and the reality. This section will draw on empirical data including banking and estate records as well as on literary evidence produced during what was becoming a veritable golden age for Irish political economy.

Finally the doomed project for an Irish national bank will be examined briefly. The fortunes of this project rose and fell with the South Sea Company share price. Its failure, it will be argued, was caused both by fears about the nature of paper credit, and the impossibility of attracting investors with sufficient funds at a time of economic crisis. It will be argued that the scheme’s failure, which was largely attributable to outside forces, contributed to the failure of an Irish financial revolution, while the presence of a more stable financial system in Scotland allowed its economy to better withstand the crash of 1720 leading to the founding of the Royal Bank of Scotland in 1727.
Sybille Lehmann (Humboldt)

Explaining the performance of Initial Public Offerings in Imperial Germany, 1897-1914: the role of reputation

This paper examines the structure and performance of Initial Public Offerings (IPOs) that were issued by top underwriters on German Stock Exchanges between 1897 and 1914.

By applying a new and unique dataset on all activities on German stock exchanges in this time period, the paper is able to provide the first complete overview on underwriter activities of German Banks not only in Berlin but also on the provincial stock markets. This includes information about market shares, frequency, volume and sectoral activity.

The analytical part of the paper concentrates on the performance of IPOs. There are a number of theories which try to explain why the underwriters systematically left money on the table by offering the issue at a lower price and thereby creating positive initial returns on average. The classical paper by Rock (1986) suggests that asymmetric information about the quality of an IPO among different groups of investors can induce underpricing. If the demand from the group of informed investors is insufficient to buy the whole issue, uninformed investors will have to be attracted. Informed investors buy high-quality issues only, whereas uninformed investors buy a mix of high- and low-quality issues. Realizing this, banks have to compensate uninformed investors by offering them all issues at a lower price. This implies that banks with a better reputation may not have needed to offer systematically below the actual value and thus IPOs issued by those bands should have lower initial returns than others. Moral (1914: 47-49) – on the other hand – speculates that asymmetric information between investors and underwriters and asymmetric information between different types of investors were relevant for underpricing. In particular, underwriters did not exactly know the market demand. Moreover, they wanted to keep their reputation and therefore offered shares at a price below the fair value.

I will test which of the theories is true for late nineteenth century Germany by comparing the initial returns by underwriter and sector. This way it is not only possible to get a clearer picture about bank activities on the German stock market in this period, but also to test modern theories about stock market performance in an empirical setting.

Since this unique new dataset also includes Sequential Equity Offerings (SEO) in this time period, it is possible to further investigate why firms switched underwriters between IPO and the first SEO. I expect the majority of firms to upgrade to a bank with a better reputation or more experience in the particular sector.

Reputation and concentration of market power to just a few banks is an important feature of the German industrialization. Universal banks, i.e. the four large D-Banks – Deutsche Bank, Dresdner Bank, Disconto-Gesellschaft, and Darmstädter played a major role in the German economy during this time period: they facilitated its ‘take-off’, they provided loans to the modern industrial firms and they monitored industrial corporations. Close bank-industry relationships ameliorated liquidity constraints of industrial firms and thereby made investment easier and supported industrial firms.

Carsten Burhop (Max Planck) & David Chambers (Cambridge)
The value of regulation and reputation: IPO survival in London and Berlin, 1900-1913

There is a considerable literature claiming that financial development matters for economic growth (Levine 2004) and industrial development (Rajan and Zingales 1998). The nineteenth century first saw the emergence of contrasting Anglo-Saxon and German financial systems and important differences between the two are thought to persist until today. Britain, representative of the Anglo-Saxon ‘outsider’ model, was characterized by arms-length and short-term lending by commercial banks, a multitude of specialist financial institutions and a well-developed equity market with dispersed and weak shareholders. In contrast, the German ‘insider’ model exhibited such stylized features as closely-monitored bank lending by
universal banks and an underdeveloped equity market.\textsuperscript{562} Hence, on the eve of the First World War the ratio of deposits to GDP in Britain was five times that of Germany, whilst both the ratio of stock market capitalization to GDP and the number of listed companies per million inhabitants was two to two-and-a-half times higher in Britain (Rajan and Zingales, 2003).

However, the contrast between British and German finance appears to have been overdone. The asset structure of British and German banks was quite similar during the late nineteenth and early twentieth century (Fohlin, 2001). German stock markets were quite efficient (Gelman and Burhop, 2008) and well integrated with other European markets (Baltzer, 2006). German investors were constructing diversified portfolios driven by a similar set of fundamental factors as their British counterparts (Esteves, 2009). Furthermore, a recent study of German financial capitalism concludes that universal banking and a well-developed stock market developed simultaneously around the turn of the twentieth century (Fohlin, 2007). These same banks seemingly played a vital role in promoting and screening initial public offerings (IPOs) and in handling any subsequent equity financing. Equally, the substantial strengthening of German securities laws in 1870 and 1896 led to the strict regulation of subsequent IPO activity (Fohlin, 2002). Accounting standards exhibited greater transparency after 1884 (Fear and Kobrak, 2006). In complete contrast, there was little improvement on any of these dimensions in Britain in this same period up to the First World War.

This paper contributes to the economics literature on the precise linkage between finance and growth, and as well the law and finance literature and the economic history literature on British entrepreneurial failure and Anglo-German comparative industrial performance. We do this by undertaking a comparative study of the IPO markets in London and Berlin between 1900 and 1913. The decision to go public remains a very important event in the life-cycle of any firm and an active IPO market is essential to the process of industrial development.

Our comparative analysis focuses on the role of IPOs in promoting industrial development by examining such characteristics of the firms going public as age, size, industry group and amount of finance raised. We consider the impact of both financial regulation and the reputation of investment banks on the market for firms going public. Our prior is that the \textit{laissez-faire} British financial system results in a more varied distribution across each of these characteristics, in contrast to a German system focused on delivering access to scarce equity finance to the most deserving of its industrial clients.

Previous IPO studies have largely concentrated on the initial returns or underpricing of IPOs, one of the most straightforward measures of market efficiency. Chambers and Dimson (2009) and Burhop (2008) find little support for the impact of market regulation on underpricing. In this paper, we test for the impact of differences in regulation and disclosure by examining long-term measures of how well the IPO market functioned. We firstly look at IPO survival, defined as the ability of a firm to survive over the five year period subsequent to going public and, secondly, at long-run performance over periods ranging up to five years after the IPO (‘long-run IPO performance’). Whilst we would expect stronger regulation and the involvement of more reputable banks to boost IPO survival probability, it is an empirical question as to which system generates better long-run IPO performance. Whilst the \textit{laissez-faire} British financial system weeds out the failing firms, it may also choke off more entrepreneurial firms which turn out to be ‘winners’ over the longer-term.

There were 855 IPOs on the LSE between 1900 and 1914 and 261 in Berlin. Whilst both London and Berlin had one official exchange for listing, London had a ‘special settlements’ segment in addition. No restrictions were imposed on any firm applying for this type of ‘listing’. Two-thirds of the 855 IPOs on the LSE did so under the special settlements procedure. So regulation in the form of listing requirements varied substantially across the

\textsuperscript{562} See, e.g., Baliga and Polak (2004) for a stylized exposition.
two markets. Furthermore, whilst the great German banks were active in sponsoring and underwriting IPOs in Berlin, there was an almost total absence of reputable underwriters in London.

Our preliminary results indicate that both regulation and reputation had a marked impact on IPO survival. In London, whilst three per cent of official list IPOs failed by their fifth anniversary of going public, 15 per cent of special settlement IPOs did so. In contrast, all IPOs on the Berlin stock exchange survived.

The next version of this paper will consider the impact of regulation and reputation on long-run performance.
II/A Mortality

Chair: tba

David Lewis

‘Great mortality and pestilence, emptied, wasted, destitute and despoiled’: Crisis or opportunity in late medieval Windsor?

Background

Despite the fame of Windsor in national history, the medieval town of Windsor (as opposed to the castle) has to-date received little attention from historians. The principal reason for this omission is that the town’s medieval records were destroyed in the seventeenth century and in consequence its early history has been considered beyond recovery. Recent research, however, based on town property deeds (numbering c.1,700 and dating from about 1200), antiquarian notes, wills and documents from the national archive has enabled some of this ‘lost’ history to be traced. The study of medieval Windsor is of interest because it sheds new light on the local economic effect of well documented national events, set in the town’s royal castle.

Synopsis

This paper proposes to examine the transformation of Windsor’s economy in the period 1440-90, when the castle and the surrounding area were set centre stage in a succession of important royal building campaigns. The town of Windsor is considerably older than the castle, but nevertheless by the early fifteenth century it was probably of no more than regional significance. These fortunes were dramatically changed from 1440 with the foundation of Henry VI’s college in Eton dedicated to the Virgin; Edward IV’s new chapel within the college of St George, and finally, under the early Tudor monarchs, the growth of the cult of Henry VI based in the same college. Windsor attracted pilgrims from all parts of the country and the near continent, both changing the nature of its economy, and establishing the town as part of a wider setting of the sumptuous royal castle.

The town’s late fifteenth century prestige could not have been imagined at the start of the century, however. Townsmen considered Windsor to be in a state of depression, and possibly in jeopardy of collapse. In a petition to the king in 1439 they list a series of near disastrous circumstances which had befallen the town: a catastrophic reduction in its income, the waste and decay of its fabric, and the serious decline in its population – which was ‘suffering from a great mortality’. But was this really the case?

Of course, many English towns were undergoing a period of transformation in the early fifteenth century following the reduction in population brought about by successive plagues, coupled with the depressed national economy. Windsor would surely not have been exempt from such difficulties and the evidence certainly suggests that times were not as good as they had been. But there is scant support for notions that the town could be considered ‘wasted’, as the townsmen would have us believe. It might be suspected that townsmen were overstating the town’s difficulties in an attempt to gain a reduction in the town’s fee farm, as had been achieved by other towns with similar complaints. Indeed, an air of political opportunism might be judged from the date of the petition which was lodged just months before the start of a major royal building project at Eton. A claim for relief after the commencement of such a valuable royal commission would not have been sustained. Whatever the truth behind the petition, however, and whether or not there was a great mortality in the town, 1440 undoubtedly marked the beginning of a significant change in Windsor’s fortunes.

The reason the fifteenth century royal building campaigns were so significant to the town was that they brought a lasting benefit. Previous building works at the castle had provided employment, but when the works came to an end, so too did the income; there was a
Academic Session II / A

... scant economic legacy. The building campaigns of the fifteenth century, by contrast, had a popular dimension which attracted people to the town long after the works were finished, offering a sustained benefit to the local economy. Travellers to Windsor required local accommodation and food, and this spurred the creation of an extensive new sector in Windsor’s economy: that of hospitality. Before 1480 almost no inns can be identified by name in the property deeds but by 1550 approximately thirty inns are visible – possibly one in every twelve town properties. The popularity of the Windsor shrines had yet other implications for the town; they necessitated changes in the town’s spatial arrangement, which have lasted to the present day.

The resurgence in the town’s fortunes is evident by 1524, as the subsidy returns of that year rank Windsor as the 37th wealthiest town in the country; a far cry from the town’s supposed deprivation and waste but three generations earlier.

The fact the medieval towns could radically change the focus of their economies within a short period of time says much for the flexibility of medieval trades and traders. In Windsor’s case, the ability to implement such change may have been facilitated by the relatively low ebb of its economy in the early fifteenth century, the townsman’s florid petition notwithstanding. Indeed, the late medieval transformation of Windsor’s economy was so complete that it remained largely unchanged until the late nineteenth century, despite the intervening changes in religion.

Guido Alfani (Bocconi)

Plague in seventeenth-century Europe and the Italian decline: an epidemiological hypothesis

In recent years there has been a resurgence of interest in the study of plague. New studies have begun to reconsider consolidated knowledge, questioning almost everything we thought we knew about Medieval and Early Modern plagues: beginning with the agent of the disease, long considered to be *Yersinia pestis* in a strain exactly the same as, or at least very similar to, that identified for the first time in Hong Kong in 1894.

The agent of plague is only one of the fields in which our understanding of the disease is changing; others are equally relevant. In my paper, key importance has been given to the circumstance that not all Medieval and Early Modern waves of plague had the same characteristics. Even if we accept that they were caused by the same agent (whatever it was), important changes in the disease have been described. Of course, the variability of its manifestations in space and time has been already underlined (although not explained) by past scholarship, but only recently has the evolution of plague from universal killer to a more focused disease (for example, in terms of mortality per age and social group) become known to our satisfaction. On the other hand, our knowledge of many biomedical characteristics of plague such as latency, infectiousness, lethality and virulence, is still clearly inadequate.

Equally inadequate is our understanding of the epidemiological characteristics of plague. Even if some specific waves of the disease, and most of all the first and most terrible (the Black Death), have been meticulously reconstructed and analysed in depth on the basis of vast masses of archival sources, studies on the Early Modern epidemics have been much more limited in scope, if not in ambition. By focusing on specific aspects of the disease, impossible to analyse on the basis of the more scanty Medieval documentation, these studies present a certain lack of comparison and have generally failed to make clear the very varied characteristics assumed throughout Europe by the latest great plagues during the seventeenth century.

This paper argues that, while Europe in general was all but free of plague during this period, epidemics struck different parts of the continent in very different ways. The South was more severely affected than the North, and Italy in particular had to face the most virulent plagues since the Black Death. The difference does not lie principally in mortality rates, given that extreme epidemic mortality has been signalled for many parts of seventeenth century Europe. It is the capacity of plague to infect pervasively a vast area, affecting villages and
hamlets as well as cities and market towns, that distinguishes the Italian epidemics of 1629-30 and 1656-57 both from the others striking the peninsula in the two previous centuries, and from those affecting the rest of Europe during the seventeenth century. Territorial pervasiveness is a key epidemiological trait of plagues which has hitherto failed to attract specific attention.

Not only is territorial pervasiveness crucial to our understanding of the demographic effects of plague, it also determines its economic consequences. By making a quick recovery of the population impossible, it ensures that the economic damage will be long-lasting and that the epidemic will not simply result in a short-term perturbation. This paper will formulate the hypothesis that the exceptional gravity of the epidemics affecting Italy during the seventeenth century, unparalleled in the rest of Europe, has to be considered one of the main factors (and one of the few measurable ones) in the relative economic decline experienced by the Italian states in this period. This implies a thorough rethinking of the general Italian economic trend during the Early Modern age, questioning received wisdom that can be traced back to influential historians such as Carlo M. Cipolla or Ruggero Romano. In particular, it suggests that the interpretation according to which Italian economic decline had its roots in the sixteenth century should be rejected. The crisis began later, and had different characteristics and different causes: among which, the plague.

Romola Davenport (Cambridge), Jeremy Boulton (Newcastle) & Leonard Schwarz (Birmingham)
The disappearance of adult smallpox in eighteenth-century London
This paper will look at a hitherto unknown aspect of smallpox. The disease was endemic in London during the eighteenth century, and in accordance with McNeill’s thesis about the gradual endemicization of infectious diseases, 20-25 per cent of those who died from smallpox in mid-eighteenth-century London were adults. Then abruptly in the 1770s in both the West End (St Martin in the Fields) and the East End (Stepney) adult smallpox mortality halved, then declined more gradually to account for only around five per cent of all smallpox burials by the end of the century. The fall was not an artefact of changes in recording practices or in the age structure of the population at risk. Nor can it be attributed to the advent of cheap and widespread inoculation, which it preceded. This paper will consider the reasons for this.
II/B The Romance of Jute

Chair: tba

Jim Tomlinson (Dundee)
*The decline of jute and the de-globalization of Dundee*

As is well-known, Britain on the eve of the First World War was an extraordinarily ‘globalized’ economy in comparison with any other large state. Within Britain there was a spectrum of local and regional levels of exposure to international economic forces, and on that spectrum Dundee was an extreme case of openness. This derived from the city being overwhelmingly dominated by one industry, jute, which derived its raw material from abroad and sold most of its output in international markets. The economic welfare of the inhabitants of Dundee was thus especially affected by international economic forces in the era of free trade. Like other Britons, they had gained enormously from cheap imported food in the last quarter of the nineteenth century, but they had also begun to be affected by serious competition in jute markets, especially from Calcutta. This competition acted to keep down money wages, and from the early 1900s led to the beginnings of the decline of the industry in Britain, with employment starting to fall.

This paper looks at the relationship between the two themes of industrial decline and de-globalization in relation to jute and Dundee. In relation to the decline issue, it stresses that in many ways jute was a ‘pioneer’ of sectoral decline in the old staples, and asks how far its experience helps us to understand such decline more generally. It also focuses attention upon the shift from a complete lack of protection of the industry against India up to 1939, with the protection given by the period of ‘jute control’ thereafter, and the political economy of the protection issue.

In relation to the idea of ‘globalization’, it examines how a process of de-globalization developed over the twentieth century, and the various forces that drove Dundee to become much more integrated with the British national economy, and much less exposed to international economic forces. It seeks to assess the significance of this process for our understanding of British twentieth century economic history, and how far this case fits with existing narratives of waves and cycles of ‘globalization’.

Overall, this paper uses a case study of a little known industry to ask important questions about the nature of economic change in twentieth century Britain, and the political economy of responses to those changes. Its primary focus is on the external context within which the industry operated, and it will be complemented by other papers by Carlo Morelli and Valerie Wright focusing more upon the internal dynamics of Dundee jute.

Carlo Morelli (Dundee)
*‘Blowing the bottom out of jute’?: Government and industry relationships in the jute industry 1957-63*

This paper examines the development of the relationship between government and industry in the postwar jute industry. Specifically, it examines the impact of the introduction of competition policy to Dundee’s jute industry.

Between 1957, in the aftermath of the passing of the 1956 Restrictive Trade Practices Act, and 1963, the date when the Restrictive Trade Practices Court ruled against the agreements operating within the British Jute industry to maintain prices and regulate supply, government and business relationships in the jute industry underwent a fundamental re-organization. The significance of this re-organization within the jute industry cannot be overstated. The new form of competitive market that emerged out of this re-organization set the framework not only for competition within the domestic market, a framework which it was believed would seal the fate of the domestic jute industry but also established a new environment for market competition that was to influence the whole of British industry. This
environment was adopted by consecutive British governments across industry until her entry into the Common Market in 1972.

The case of the jute industry therefore provided an early test for the new competitive environment emerging within government in relation to domestic market competition and the private sector. The new environment was not one, however, of untrammelled market competition. Rather cartels and price fixing arrangements were replaced by increased market competition within a domestic market protected by external tariff protection.

The paper focuses on the 1963 court case brought by the Board of Trade’s Restrictive Trading Arrangements Office against jute manufacturers in order to examine the impact of the newly introduced competition policy for government-business relationships in this important period for the British economy.

Valerie Wright (Dundee)

_A woman’s industry? The role of women in the workforce of the Dundee jute industry c.1945-79_

In the historiography, and popular memory, Dundee is portrayed as a ‘women’s town’. The roots of this characterization can be found in the city’s population structure in the late nineteenth and early twentieth century, with there being three women for every two men in 1911. In the same year women formed 43 per cent of the labour force and 54.3 per cent of women aged over 15 were in employment. The jute industry dominated Dundee’s economy and women were dominant in jute accounting for 75 per cent of the workforce. Thus, Dundee’s description as a ‘women’s town’ can also be traced to the role that women played in the workforce of the jute industry and the economic and social consequences of this.

Following the Second World War jute’s dominance in the local labour market was under threat, which had profound implications for the role of women in the industry. Indeed the jute industry experienced a labour shortage in the immediate postwar years, and struggled to attract women back into the industry. This was in spite of the introduction of a registration system to track ex-jute workers to prevent them being employed in other industries. Taking into account the decline in female participation in the labour market, largely as a result of a rise in fertility rates following the war, there remained a reluctance to return to jute. Dundee Corporation in an attempt to facilitate the return to work of married women, continued public provision of nurseries, which kept the same hours as the jute works. In addition jute companies attempted to attract women back to the industry, not with higher wages, but with improved working conditions, including ‘welfare facilities’ such as canteens, lockers, improved toilets and several established nurseries. In addition Dundee Corporation, as a response to pessimism concerning the future of the jute industry, decided to launch initiatives to attract new industries to the area. This proved successful and inevitably women in Dundee chose to work in many of these new industries, which provided ‘welfare facilities’, employment stability and perhaps most importantly relatively higher wages.

However in the 1960s and 1970s the jute industry stopped chasing women workers. Jute companies had combated the labour shortage in the industry through capital expenditure on more efficient machinery in order to lower labour requirements. Company nurseries were closed and there were few improvements in ‘welfare facilities’. Such efficiency measures also included further extension of the double shift system. As a result of protective legislation preventing women from working night shifts, a legacy of the interwar years, jute companies increasingly employed men. The wage differentials between the male nightshift and female dayshift was defended as male output was higher as men could operate more machinery per operative.

---

564 Ibid.
diversification of jute companies into the extrusion and weaving of polypropylene in this period, processes which largely employed men, accompanied by the declining demand for jute products, also lowered demand for female labour.

This paper will contrast women’s role in the jute industry in the immediate postwar years when women were very much in demand to the 1960s and 1970s when the industry had overcome its labour shortage and was no longer entirely dependent on the work of women. Not surprisingly this change of fortunes marginalized women workers in the jute industry. Arguably, jute was no longer ‘a woman’s industry’ as it had been in the first half of the twentieth century. The work of women in the jute industry was and remains significant in the characterization of Dundee as a ‘woman’s town’. Therefore this paper will also consider whether or not this remained an accurate description of the city in the period under consideration, at least in an economic sense.
II/C  European Growth before 1850

Chair: tba

This session provides a quantitative overview of economic growth and development between 1300 and 1850 in a number of European countries. Levels of per capita income were substantially higher than suggested by Angus Maddison during the Medieval period. For the case of Italy, this may be explained by high levels of urbanization. For other parts of Western Europe, however, it is explained by mixed agriculture, with a large pastoral sector. This meant that although people in Western Europe did not have a particularly generous diet if viewed in terms of kilocalories, it was a varied diet with meat, dairy produce and ale to supplement the less highly processed grain products that made up the bulk of the diet.

The large share of pastoral agriculture had a number of important implications for future growth, since it was characterized by high value added, capital intensity and non-human energy intensity. In these respects, Western Europe already looked very different from Asia long before what Kenneth Pomeranz calls the Great Divergence of the Industrial Revolution period.

Stephen Broadberry, Alexander Klein, Bas van Leeuwen (Warwick), Bruce Campbell (QUB) & Mark Overton (Exeter)

British economic growth, 1300-1850: some preliminary estimates

This paper forms part of a project to reconstruct the national income of Britain and Holland between the late thirteenth century and the mid-nineteenth century. Here, we present preliminary annual estimates of British GDP constructed from the output side. For the period before 1700, we work only with estimates for England, but for the period 1700-1850 our estimates are for the territory of Great Britain, including Wales and Scotland as well as England.

For agriculture, we build on the path breaking study of Overton and Campbell (1996), which tracked long-run trends in agricultural output and labour productivity, but was restricted to estimates for a small number of benchmark years. To provide annual estimates, we rely heavily on three datasets assembled for the medieval, early modern and modern periods. For the medieval period, we analyse the Medieval Accounts Database assembled by Campbell (2000; 2007), drawing upon the archival labours of a number of other historians, including David Farmer, John Langdon and Jan Titow. The information on arable yields and animal stocking densities is taken largely from manorial accounts, but is supplemented by information on the non-manorial sector from tithes. For the early modern period, we use the probate inventory database assembled by Overton, Whittle, Dean and Hann (2004), which provides indirect estimates of arable yields and animal stocking densities from the valuation of the assets left by farmers. From the early eighteenth century on, we make use of the database on farm accounts assembled by Turner, Beckett and Afton (2001).

For industry and services, for the period after 1700 we build on the pioneering approach of Deane and Cole (1967), as modified by Crafts and Harley (1992). Gross output indicators for the major sectors have been assembled and weighted using value added shares. For the period before 1700, a similar procedure has been used, drawing on as many sources as possible for the output indicators and assembling new sectoral weights at the key benchmark years of 1377 and 1522, as well as the more familiar 1688 benchmark based ultimately on the work of Gregory King [1696].

For the period between 1300 and 1700, we find English per capita income growth of 0.16 per cent per annum on average. This cumulates to an increase in per capita incomes of around three-quarters, although growth was episodic rather than continuous, with the strongest growth occurring during the Black Death crisis of the fourteenth century and in the second half of the seventeenth century. For the period 1700-1850, we find British per capita
income growth of 0.31 per cent per annum, broadly in line with the widely accepted Crafts/Harley estimates. Again, growth was episodic, with periods of faster growth occurring 1780-1801 and 1830-1850. This modest trend growth in per capita income since 1300 suggests that, working back from the present, living standards in the late medieval period were well above what Allen (2009: 36-41) calls ‘bare bones subsistence’. This can be reconciled with modest levels of kilocalorie consumption per head because of the very large share of pastoral production in agriculture. This meant that a large share of the English population were already in a position during the late middle ages to afford what Allen calls the ‘respectable lifestyle’, with a more varied diet including meat, dairy produce and ale, as well as the less highly processed grain products that comprised the bulk of the bare bones subsistence diet.

Our estimates of GDP are built up primarily from the output side. However, the national accounting perspective suggests a number of tests which can be conducted to demonstrate consistency, drawing on estimates from the income and expenditure sides. In particular, we check consistency with the real wage estimates which have been used frequently by economic historians to draw conclusions about long-run living standards (Clark, 2005; Allen, 2001). Second, we also consider per capita consumption of kilocalories, to check the sustainability of the population (Overton and Campbell, 1996).

References

Paolo Malanima (Institute of Studies on Mediterranean Economies)
Italian GDP, 1300-1913

This research on the output of Italy during the lengthy period between the beginning of the fourteenth century and the start of modern growth at the end of the nineteenth century has been carried out using an indirect method of GDP reconstruction. An outline of the development of the Italian economy is already clear from the series regarding population, urbanization, agricultural and non-agricultural prices and both urban and rural wages, from the first years of the fourteenth century These data can, however, be combined in order to
obtain a reliable long-term series of GDP in Italy from 1300 until 1861. The overall trend of the Italian output per head shows Italy as being advanced in the late middle ages. From then onwards, while population was rising, its output per head slowly fell.

1. Main indicators

Pre-modern Italy was characterized by a decline in population after the Black Death, followed by a slow recovery; although this was interrupted by the plague in the Centre and the North between 1629-30 and in the South between 1656-58 (Figure 1A; Table, lines 1-3). The population figures around 1700 are nearly equal to those of 1300: 13.5 million in 1700 compared to 12-13 million in 1300. From 1700 onwards the population began to rise fast reaching 18 million in 1800, 26 million in 1861 and 37 million in 1911.

Until 1820 the relationship between population and prices is direct (Figure 1B; Table, line 4). Prices rise in the first half of the fourteenth century; decline until 1460-70; rise in the long period between 1460-1600; decline again until 1730 and rise together with the eighteenth century increase in population.

The series of wage rates used in GDP calculation reveals an inverse trend to that of population and prices (Figure 1C; Table, line 5); rising rapidly after the Black Death, they remain high until the second half of the fifteenth century during the period of low demographic density. The sixteenth century witnesses a decline, whilst during the seventeenth century recovery takes place, only to be followed by another drop from about 1760 onwards. They remain at a low level until the end of the nineteenth century.

The share of non-agricultural product is estimated through a regression of non-agricultural output on urbanization rates from 1861 and 1936 (when, that is, we have both urbanization rates and the shares of product per sector of origin) (Table, line 13). Urbanization was high in the late middle ages when more than 20 per cent of the population lived in centres with over 5,000 inhabitants, whereas in 1861 only 16 per cent did so. The decline was almost continuous from the late middle ages onwards.

Although Italy was not an important proto-industrial region, industry, and especially the production and transformation of silk, became common throughout the countryside areas alongside other secondary activities. In order to build an index of GDP the importance of non-agricultural output, based on urbanization, must be adjusted through inclusion of information on employment in non urban activities.

2. Output

Aggregate GDP more or less followed the trend of population. Yet per capita GDP declined from the late middle ages onwards. On comparing the decade 1860-70 with the two decades 1420-40 a decline of about 20 per cent is to be noted. This figure drops to 10 per cent if the comparison is made with the pre-plague level (Figure 1D; Table, lines 6-9).

When considering the four centuries 1400-1800 (see the following Figure), it can be seen that, while output rose with the rise of labour force (Table, line 10), the rate of growth diminished, as the straight line of marginal productivity of labour (MPL) shows, and, with it, the average productivity of labour (APL) also declined. It can be seen that, over this long period, functional distribution of income underwent a remarkable change, shown by the widening gap between APL and MPL.

Recent research shows that recovery occurred in the Italian economy from the 1880s onwards, as a result of new technology and the use of fuels such as coal and subsequently oil. Electricity, and especially hydro-electricity, played an important role. In 1900, the level of per capita GDP was the same as in the first half of the fourteenth century. On the eve of the First World War, it was already higher, thanks to the progressing industrialization of the country.
Appendix

Figure 1: Population in Italy and the Centre-North consumer price index (log scale; 1420-40=1); index of rural and urban wages (log scale; 1420-40=1); index of per capita GDP (log scale; 1420-40=1) 1300-1913 (with the exception of CPI starting with 1250)

Table: Main indicators on the Italian economy 1310-1910 (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Population (000)(P)</th>
<th>Index Population (1420-40=1)</th>
<th>Population Centre-North(000)</th>
<th>Prices (Index 1420-40=1)</th>
<th>Wages (Index 1420-40=1)</th>
<th>Per capita GDP (1420-40 prices)</th>
<th>Index GDP per c. (1420-40=1)</th>
<th>GDP (1420-40 prices)(000)</th>
<th>Index GDP (1861=1)</th>
<th>Labour Force (LF)(0,60P) (000)</th>
<th>Agriculture (output) (%)</th>
<th>Industry, Services (output) (%)</th>
<th>Urbanization (%)(&gt;5.000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-1440</td>
<td>12,500</td>
<td>1.62</td>
<td>7,900</td>
<td>0.72</td>
<td>0.53</td>
<td>53.0</td>
<td>0.88</td>
<td>662,387</td>
<td>1.43</td>
<td>7,500</td>
<td>51</td>
<td>49</td>
<td>21.4</td>
</tr>
<tr>
<td>1440-1610</td>
<td>7,700</td>
<td>1.00</td>
<td>4,200</td>
<td>1.00</td>
<td>1.00</td>
<td>60.0</td>
<td>1.00</td>
<td>462,000</td>
<td>1.00</td>
<td>4,620</td>
<td>58</td>
<td>42</td>
<td>17.0</td>
</tr>
<tr>
<td>1600-1710</td>
<td>13,300</td>
<td>1.73</td>
<td>7,900</td>
<td>3.86</td>
<td>0.37</td>
<td>42.0</td>
<td>1.21</td>
<td>558,201</td>
<td>1.21</td>
<td>7,980</td>
<td>56</td>
<td>44</td>
<td>18.4</td>
</tr>
<tr>
<td>1700-1870</td>
<td>13,500</td>
<td>1.75</td>
<td>8,000</td>
<td>2.90</td>
<td>0.55</td>
<td>44.9</td>
<td>0.70</td>
<td>605,610</td>
<td>1.31</td>
<td>8,100</td>
<td>59</td>
<td>41</td>
<td>17.0</td>
</tr>
<tr>
<td>1810-20</td>
<td>19,000</td>
<td>2.47</td>
<td>10,600</td>
<td>6.28</td>
<td>0.45</td>
<td>45.5</td>
<td>0.75</td>
<td>863,930</td>
<td>1.87</td>
<td>11,400</td>
<td>54</td>
<td>46</td>
<td>17.5</td>
</tr>
<tr>
<td>1860-70</td>
<td>27,000</td>
<td>3.51</td>
<td>16,000</td>
<td>6.80</td>
<td>0.49</td>
<td>48.3</td>
<td>0.76</td>
<td>1,304,910</td>
<td>2.82</td>
<td>16,200</td>
<td>50</td>
<td>50</td>
<td>16.2</td>
</tr>
<tr>
<td>1900-10</td>
<td>35,000</td>
<td>4.55</td>
<td>23,000</td>
<td>6.67</td>
<td>0.72</td>
<td>77.8</td>
<td>0.81</td>
<td>2,722,650</td>
<td>5.89</td>
<td>21,000</td>
<td>43</td>
<td>57</td>
<td>25.0</td>
</tr>
</tbody>
</table>

Yearly rates (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>1 Population</th>
<th>4 Prices</th>
<th>5 Wages</th>
<th>6 Per c. GDP</th>
<th>8 GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-1440</td>
<td>-0.42</td>
<td>0.29</td>
<td>0.56</td>
<td>0.11</td>
<td>-0.31</td>
</tr>
<tr>
<td>1440-1610</td>
<td>0.31</td>
<td>0.77</td>
<td>-0.56</td>
<td>-0.20</td>
<td>0.11</td>
</tr>
<tr>
<td>1610-1710</td>
<td>0.01</td>
<td>-0.29</td>
<td>0.38</td>
<td>0.07</td>
<td>0.08</td>
</tr>
<tr>
<td>1710-1870</td>
<td>0.31</td>
<td>0.70</td>
<td>-0.17</td>
<td>0.01</td>
<td>0.32</td>
</tr>
<tr>
<td>1870-1910</td>
<td>0.70</td>
<td>0.16</td>
<td>0.16</td>
<td>0.12</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Note: the figures on the first line refer to the lines of the previous part of the Table.
Figure 2: Decadal estimates of GDP, average productivity of labour (APL) and marginal productivity of labour (MPL) in relation to the labour-force (L) 1400-1800

Note: in the graph, labour force \((L)\) is assumed to be 60 per cent of total population. Marginal productivity of labour \((MPL)\) is computed as the derivative of the curve of the aggregate output as to \(L\) in the high part of the graph.

Carlos Álvarez-Nogal & Leandro Prados de la Escosura (Carlos III Madrid)
*The rise and fall of Spain, 800-1850*

No consensus exists as regards when Spain fell behind. Early modern historians place it between the late sixteenth and mid-seventeenth century (Hamilton 1938, Elliot 1961, Thompson and Yun 1994) while modern economic historians locate it in the early nineteenth century (Prados de la Escosura 1988). In fact, some historians have questioned that a rise of Spain to a prominent position in Europe ever happened (Cipolla 1980; Kamen 1978). Hypothetical quantitative exercises cast contradictory results: from a sustained decline to a moderate increase in GDP per head (Yun 1994, Carreras 2003, van Zanden 2005a, 2005b, Maddison 2006). This paper investigates when did the rise of Spain begin and the decline occur by examining the available evidence and using some conjectures about her economic performance over a millennium (c. 800-1850).

**Output in agriculture: an indirect approach**

Agricultural output has been estimated indirectly using a demand function approach in which wage rates are usually accepted as a proxy for disposable income per head. In the Spanish case, however, it is far from clear that wage rates capture trends in wage earnings. An increase in incentives to work harder, as well as the opportunity to do it, occurred during the sixteenth and eighteenth centuries. Given the low number of days worked per economically active population, the supply of labour was presumably rather elastic, and workers could make up for the fall in daily real wages by increasing the amount of days worked over the year.

The main challenge is, then, the choice of a proxy for changes in disposable income. One option, following Allen (2000) and Federico and Malanima (2004), is to accept the variations in real wage rates. Another option is to assume that real returns to labour remained stable over time, as workers reacted to declining real wage rates by working extra days. Conversely, when real wage rates increased and the opportunity cost of leisure declined, the number of days (hours) worked would fall.

A long-run decline in real per capita consumption is observed for the demand estimate which includes the real wage rate as a proxy for disposable income. This result is confirmed although with a milder slope when real disposable income is assumed to remain unaltered proving Wrigley’s approach inadequate.
Due to lack of trade data for most of the considered period, we had to assume, as Allen (2000) did for most European countries, that agricultural trade was balanced and output per head moved along consumption per head.

**Output outside agriculture: conjectural estimates**

Our strategy has been, following Malanima’s (2003), to accept urbanization as a proxy for non-agricultural output. We have accepted the 5,000 inhabitant conventional threshold to define an urban centre, but qualified it by previously adjusting the urban population downwards to exclude those living on agriculture. Spanish urbanization rates, adjusted to exclude population living on agriculture, have been computed at benchmark years over 800-1850, and its variation assumed to correspond to changes in non-agricultural output per head.

**Aggregate output**

We have computed a Divisia index for real GDP per head in which yearly variations in agricultural and non-agricultural output per head are weighted by the average at adjacent years of the shares of agriculture and non-agricultural activities in current price GDP. Together with GDP estimates in which agricultural output has been computed with a demand equation, we have included an estimate in which agricultural output has been derived through the Wrigley approach – albeit the unrealistic implicit assumptions about price and income elasticities – as a counterpoint. The advantage of the low data demanding estimate proposed by Wrigley is that it allows us to push our estimates back to the year 800 and, thus, provide us with some explicit conjectures about the economic performance of medieval Spain.

**Trends in output per head**

Over the period 1400-1800 the increase in real output per head ranged between 15 and 30 per cent, and went up to 40-47 per cent if the time span considered is extended to 1400-1850. In terms of the pace of growth, it seems most probable that output per head grew below 0.1 per cent per year over 1400-1850.

If we focus on its evolution over different periods we find that per capita income grew moderately between the ninth century and the early fourteenth century, declined, then, until the early fifteenth century when initiated an expansion, as the economy recovered from the plague, which continued throughout the sixteenth century, followed by a severe contraction during the seventeenth century. Moderate progress took place over the eighteenth century, which turned into non-negligible growth in the early nineteenth century and, by 1850, the per capita income levels achieved in the late sixteenth century had been finally overcome. Interestingly, alternative estimates of product per head cast similar growth rates for the long seventeenth century, while their main discrepancies correspond to the sixteenth and the eighteenth century.

**Spain’s economic performance in European perspective**

When Spain’s performance is placed in comparative perspective, we find that Spanish per capita income was above the Western European average by 1590, a result at odds with the recent literature. Imperial Spain was a relatively affluent nation, only second in per capita income to the Low Countries and Italy and similar to France. In the long-run, however, Spain experienced a sustained decline. Notwithstanding her relative improvement during the sixteenth century, Spain fell behind during the seventeenth century and up to 1750, and not only to the new leading nations (Britain and the Netherlands) but to Western Europe altogether. Spanish recovery in the first half of the nineteenth century – a significant achievement given that it occurred at the time of the loss of empire and the complex institutional transition to a liberal society – fell short of the economic progress that took place in north-western Europe (especially in Britain, Belgium, and France) during the first Industrial Revolution. Thus, Spain suffered the paradox of growing but falling behind.
The fewer, the merrier: compulsory schooling laws, human capital, and fertility in the US

I investigate the effect of the introduction of compulsory schooling laws on education and fertility in the United States, 1850-1920. I find that compulsory schooling was associated with a seven per cent increase in enrolment and with a 15 per cent decline in the fertility of women of reproductive age. My identification strategy is based on a difference-in-differences (DID) methodology involving individuals living in the vicinity of the state border where legislation changed. The results are robust to the inclusion of a number of socio-demographic and geographic controls. The effects on education are particularly strong for black children, whereas the effects on fertility are concentrated among young women. The results suggest that compulsory schooling laws may be a crucial policy for hastening both the demographic transition, and the transition to modern growth.

Introduction

Economic development involves dramatic social transformations. In the process of becoming a modern economy, most countries experience both a rapid decline in fertility and the rise of mass schooling. In the United States, much of the increase in educational attainment was accompanied by social legislation. Laws compelled parents to send their children to school instead of allowing them to toil in the fields, shops, or factories. In the few decades between 1850 and 1920, the United States became one of the world leaders in mass schooling; child labour had been successfully eradicated.

In parallel with the rise in school attendance, modernizing economies often witness a massive reduction in fertility. Around 1850, the average American woman could expect to give birth to about six children during her lifetime. Three generations later, this figure had fallen to a mere three children. Associated with the rise of the nuclear family, the modern concept of childhood first appears. By the end of the process, children have become economically ‘worthless’, but emotionally ‘priceless’ (Zelizer [1985]).

In this paper I provide a direct test of the effects of government intervention on education and fertility. I test the effects of compulsory schooling laws (CSLs) on school enrolment and marital fertility using a difference-in-differences strategy. In order to avoid the potential pitfalls of unobserved heterogeneity, I restrict my attention to border regions. Borders are particularly useful because they suggest abrupt, discontinuous changes. People living on either side of a border region are more likely to be similar in terms of observables and unobservables. However, since they live in different jurisdictions, they are exposed to different regulations. After controlling for any remaining demographic and economic variables, I argue that the differences observed between the outcome variables of individuals living in states that passed the laws and those that did not must be related to the enactment of compulsory schooling.

My analysis of the evolution of education in border regions about the time CSLs were introduced reveals that, contrary to the weight of earlier evidence (Landes & Solmon [1972], Margo & Finegan [1996]), legislation increased the school enrolment of children by about seven per cent. This finding is robust to the inclusion of a variety of socio-demographic and geographic controls. Separate regressions show that the effect of CSLs on education is stronger for black children. Furthermore, I find that the laws increased the enrolment only of those children who were affected by it. I confirm that the increase in enrolment is a consequence of the law by examining the effect of a placebo law.

Next, I turn to the analysis of fertility outcomes. Fertility measures available in the historical census data are quite poor. Using a methodology similar to what the United Nations
Academic Session II / D

recommends for countries with poor vital registration, I construct a measure of fertility based on the ages of children living with their mothers at census time (cf. La Ferrara, Eliana et al. [2008]; UN [1983]). With the time-series data of fertility I am able to test changes that occur simultaneously with the law’s introduction. Along the borders, I compare the number of births after the CSL to the number beforehand. Considering a time series of 15 years of births, I find that women reduced their fertility about 15 per cent as a consequence of the introduction of CSL.

This result is robust to the inclusion of controls, and it holds even when restricted to within-mother variation. The effect seems to be stronger on women who are young at the moment the change in policy occurred. Again, this is consistent with the notion that the effect of the laws should be greater on women who have not yet made the most of their fertility decisions. The effects are also robust to the correction for autocorrelation in the treatment (Bertrand et al. [2004]).

This paper broadly relates to research in different fields. First, it is connected with the macroeconomic literature on ‘unified growth’, summarized in Galor [2004]. A number of unified growth models have specifically considered the effect of state interventions in order to reduce child labour and increase schooling (Doepke [2004]; Doepke & Zilibotti [2005]; Galor & Moav [2006]). In addition, this paper is related to a number of empirical studies that attempt to measure the ‘quantity/quality’ trade-offs (Rosenzweig & Wolpin [1980]; Angrist et al. [2006]). It should be noted, however, that this literature stresses finding good instruments for fertility in order to pinpoint its effect on education (and on other labour outcomes). In contrast, this paper examines how exogenous changes in education affect the optimal fertility decisions of households.

Finally, the paper relates to a strand of literature that focuses on the effects of social legislation in the United States, in particular, compulsory schooling laws; (Landes & Solmon [1972]; Margo & Finegan [1996]; Goldin [1999]; Moehling [1999]; Lleras-Muney [2002]).

David Mitch (Maryland, Baltimore)

Did high stakes testing policies result in divergence or convergence in educational performance and financing across counties in Victorian England?

In 1863, the English Parliament set in place a system of elementary school finance in which national level funding for individual schools depended in part on the outcomes of student examinations conducted by school inspectors. Officially labelled the Revised Code, it came to be known as payment by results. This system remained in place for roughly thirty years through the early 1890s. At the height of the system in the 1870s and 1880s, on average, roughly half of the national level funding a school received depended on the outcome of student examinations.

Current advocates of high stakes testing argue that basing funding on student outcomes offers strong incentives for teachers to offer effective instruction. According to this view, initially ineffective schools will have to find ways to improve in order to survive and receive adequate funding. And schools that can offer effective instruction have incentives to accept more students and this also encourages educational authorities to establish new schools operated in a manner to encourage effective instruction. However, critics argue that such policies only worsen the financial standing of already troubled schools who lack the wherewithal to compete while encouraging other initially ineffective schools to teach to exams in a rote manner without genuinely improving methods of instruction and learning. Did Victorian policies result in a levelling up in the funding available to all schools who persisted or did they result in a widening in funding gaps between successful and poorly performing schools?

In contrast with previous studies by historians of education which have focused on national level impacts of the policy, this paper employs county level data for England and Wales reported in Committee of Council on Education Reports published in British sessional
papers between 1879 and 1890 to examine these issues. This includes information on examination outcomes in reading, writing, and arithmetic, average educational expenditure per student, and student to teacher ratios. A further source to be employed consists of school log books mandated by the Revised Code; these provide not only details on examination outcomes and funding consequences for individual schools but also remarks by teachers on attendance and instructional challenges faced in a variety of local social and economic environments.

Findings at this point indicate that there was some narrowing in the dispersion across counties of examination results over the period under consideration. And there was a marked decline in the dispersion in student/teacher ratios across counties. However, dispersion in expenditure per student did not noticeably narrow and during some intervals actually widened.

One central issue for further consideration will be how to reconcile the narrowing dispersion of examination outcomes with continuing gaps across counties in expenditure per student. Thus the paper aims to analyse the impact of an educational policy in place for some three decades in Victorian England with clear resonance with educational policies and controversies of the early twenty-first century.

Martina Viarengo, Aldo Musacchio (Harvard) & André Martinez (Bank of Mexico)
The political economy of education in Brazil, 1890-1940

For studies that link colonial institutions to subsequent levels of education across countries Brazil at the turn of the century would have been the perfect basket case. Being a tropical country with high mortality rates, in the sixteenth century the Portuguese transformed what is now Brazil into a slave economy reliant on the export of crops grown in large scale plantations. The institutional matrix that came out of the Portuguese colonization created a society with a highly unequal distribution of land, wealth, income, political power, and education levels (Acemoglu, Johnson, and Robison, 2001; Easterly and Levine, 2002; and Engerman and Sokoloff, 1997, 2002; Naritomi, Soares, and Assunção, 2007, and Bruhn and Gallego, 2007). In 1890 only 15 per cent of the population in Brazil was literate. The fact that legal changes in 1889 introduced a literacy requirement to vote should have perpetuated the low levels of literacy in Brazil because there were few incentives for the elites to finance public education (Lindert, 2004; Mariscal and Sokoloff, 2000). Yet, between 1890 and 1940 Brazil had the most rapid increase in literacy rates in the Americas and caught up and even surpassed some of the countries that had higher literacy rates at the turn of the century (e.g., Mexico, Colombia, and Venezuela). This increase in literacy rates was also accompanied by a rapid increase in the number of schools, in enrolment rates, and in the number of teachers. This paper explains how states in the Brazilian federation financed a rapid expansion in the provision of public education in the period 1889 to 1930. We provide a political explanation behind the drive of state elites to pay for education at the state level. We argue that as a product of patronage and the desire of state elites and political parties to increase the number of voters in their states, state governments ended up financing the expansion of public education in Brazil. We show that the increase in expenditures in education per capita at the state level was not the result of a federal programme, but that fiscal decentralization after the Constitution of 1891 allowed states to collect export taxes to finance expenditures on education. Those states with higher windfall profits from the increase in commodity prices at the end of the nineteenth century were also the states that had significantly higher expenditures on education per capita.
II/E Institutions and Shipping

Chair: Knick Harley (Oxford)

Maria Fusaro (Exeter)
/Public service and private trade in the early modern Mediterranean: English seamen and the Venetian courts of law in the seventeenth century/

This paper will trace the growing involvement of English shipping within the ‘Venetian Mediterranean’ in the seventeenth century, through the analysis of their involvement in legal controversies in Venice. In this period, English ships and sailors played a crucial role not only in the Venetian economy, but also in the Venetian war effort against the Ottoman Empire, during the long Cretan war (1646-69). The extant documentary evidence in the Venetian archives which I have investigated has unearthed interesting evidence regarding the fundamental differences in traditions of contractual law, and in the financial treatment of sailors between England and Venice. It is my argument that these differences had paramount importance in shaping the competition between ‘southern’ and ‘northern’ European carriers, giving the latter an extra competitive edge in coping with the changing needs of maritime traffic in the Mediterranean during the early modern economic transition.

Gelina Harlaftis (Ionian)
/Russian port customs, Anton Chekhov and Maris Vagliano, the ‘Emperor’ of Azov Sea: confronting institutions in the Russian Empire, 1880s/

The aim of the paper is to reveal the confrontation of Greek diaspora family business involved in international shipping and trade, the Vagliano brothers, with the institutions of the Russian Empire in the second half of the nineteenth century. It will further investigate the impact that this had on public opinion of contemporary Russia through the writings of novelists, the most important of which was Anton Chekhov.

The Vagliano brothers were founders of one of the largest Greek diaspora trading houses in the second half of the nineteenth century, a nodal company of the extensive maritime network of the Greeks that carried grain from the Black Sea to western Europe. One has to take into consideration that during this period the Black Sea port-cities rose as the world’s most important gateways for grain exports. The area of the Azov Sea, with the leading port of Taganrog was the second most important export region after Odessa in the Black Sea region.

Mari Vagliano, the eldest of the three brothers – the other two were based in London and Marseilles – had been established in Taganrog since the 1820s. In 1881 he was accused of tax evasion, forgery and bribery against the Russian state and was put in prison; he bailed himself out paying 1,000,000 rubles. In 1885-6, the ‘biggest trial of all times’, known as the trial of the Taganrog Port Customs, took place in which 38 persons were accused, mainly Greek merchants and Taganrog port and Customs officials; but it was evident that Vagliano was the big ‘fish’ that was mainly sought. There are certain questions that need to be answered: What was the business system of the ethnic minorities in the frontier markets of Russia in the nineteenth century? Why did the Russian state ‘attack’ in 1881 when the ‘business system’ of Taganrog port had gone on at least for the previous 60 years? Was it to combat corruption of state officials or was it to combat the exploitation of the Russian people by ‘foreigners’ to promote xenophobia and support ‘purification’ and ‘nationalism’ at the time of Alexander III?

What this paper will also examine will be the impact of this trial on Russian public opinion through the writings of contemporary writers. In a country that was just forming its bourgeoisie, Mari Vagliano became the archetype of the corrupt upper bourgeois-millionaire, the symbol of a ‘robber baron’, a ruthless smuggler, a villain. Novels, theatrical plays, satirical articles were written with his life as a model. By far the most important of all was
Anton Chekhov, born in Taganrog in 1860 at the time of Mari Vagliano and the Greeks; his brother worked for the Taganrog Customs at the time of the trial. It is extremely interesting to see how masterfully young Chekhov uses M. Vagliano as a character of a villain in his novels and how he deals with the Greeks in his theatrical plays.

The paper is based on entirely new research in the Ukrainian Kiev State Archives, Russian Rostov State Archives, in Greek State Archives, in the British General Archives, in the Russian newspapers and novels of the time.

Evyrdiki Sifneos (National Hellenic Research Foundation)
Navigating the hostile maze: Americans and Greeks exploring nineteenth-century Russian market opportunities

Academic literature has dealt with the problem of Russia’s economic backwardness and its implications for the development of national and foreign entrepreneurship. Nevertheless, the nineteenth century was a period during which vast regions of the Russian Empire were linked with the world economy through state and private entrepreneurial endeavours. Staples, such as grain, played a key role in stimulating the economy and mobilizing its agents.

Despite the hostile and discouraging environment for the development of entrepreneurship in nineteenth-century Russia, some foreign businessmen managed to navigate the hostile maze, conduct business and succeed in establishing firms in Russia. This paper will draw a comparative study between two families that attempted, through trade and shipping, to enhance and stabilize their transactions with the North and South of Russia and finally attained to start-up commercial firms in St. Petersburg and Taganrog (Azov Sea region). The first, Ropes and Co [Harvard, Baker Library Archive], came from Boston and settled in the Russian capital in the early 1830s. The second, the Sifneo Frères [Institute for Neo-hellenic Research – The National Hellenic Research Foundation] came from the Aegean Islands under Ottoman rule, and settled in the port of Taganrog, Azov Sea region, right after the Crimean War.

The paper will explore their sense of market opportunity and ways of dealing with the political-legal framework in the host country. It will draw on their business strategy, different commodity selection, tracing of maritime routes and previous shipping experience. It will specify the environmental setting, the state involvement for the development of entrepreneurship and mostly its policy toward foreign investors in the two regions. It will deal with the human context for the development of entrepreneurial behaviour, the competitors and the host society’s predisposition towards foreigners. Finally it will explore how social networks and different religious affiliations mattered in the development of entrepreneurial behaviour of the American and Greek firms.

Sarah Palmer (Greenwich)
Government and the British shipping industry in the 1960s and 1970s

This paper will examine the relationship between the British government and the shipping industry in what proved to be a crucial period of transition from leading national fleet – still the world’s third largest in 1973 – to comparative insignificance. State policy towards shipbuilding in these years has attracted considerable academic interest, but the history of policy towards shipping itself has received little attention, other than from within the sector itself. Yet the provision of investment grants, the 1973 Merchant Shipping Act directed against flag-discrimination, the 1969 appointment of the Rochdale Inquiry into British Shipping, as also reaction to the Seamen’s Strikes of 1964 and 1981, point to an important policy area. Internationally, too, much diplomatic effort was expended at UNCTAD in resisting measures to open up conferences which threatened the interests of the UK’s liner companies. Under Margaret Thatcher, in the 1980s there followed a repudiation of the previous policies of both Labour and Conservative governments towards shipping, with no
case seen for support, while more recently under Labour the introduction of a Tonnage Tax regime reversed this stance.

Beginning with a consideration of the characteristics of the British shipping industry in the early 1960s, the paper will trace in outline the pressures and challenges it faced over two decades of growing technological, structural and market change in this international industry. It will identify the various interests in the sector, the interconnections with shipbuilding, insurance and financial institutions, and consider the policy role of trade associations, particularly the Chamber of Shipping, and the trade unions. From the governmental side, it will examine how shipping was viewed in the context of balance of payments problems and national strategy. Centrally, it will explore the political and economic considerations which shaped the engagement between government and the industry and the formulation of policy. Finally, building on other research by the author, it will attempt to evaluate the impact of national maritime policy on the size, character and performance of the UK merchant fleet in the 1960s and 1970s.
II/F  Money

Chair: tba

David Chilosi & Oliver Volckart (London School of Economics)

Explaining debasement in the late middle ages: what can we learn from the gold-silver ratios?

In this paper, we analyse the causes and consequences of late medieval debasements of the coinage, using a new methodological approach and a newly compiled dataset.

The issue of debasement in late medieval Europe continues to divide economic historians. Whilst there is widespread consensus that social conflict, fiscal and monetary motivations all played a part in explaining the progressive reduction of the fine bullion content of the coinage, there are sharp disagreements on their relative importance. The promoters of conflictualist and fiscal explanations emphasize the negative consequences of debasements, while a more benign view is associated with the monetary perspective, which stresses the consequences for the supply and circulation of money. This paper revisits the question through a comparative analysis of debasement in two relatively well-documented but rarely compared cases, Florence and Flanders, and in a largely unexplored area, Central Europe. The analysis is based both on conventional data sources, such as constitutional history, wage and mint data, and a novel approach, whereby prevalently fiscal and monetary interventions are distinguished on the basis of their effects on market gold-silver ratios, the rate at which gold and silver were exchanged in the money market. As well as casting a new light on cases for which conventional data is relatively abundant, this approach permits us to address the question of debasements also in contexts where it is scarce. A new dataset of daily, monthly and yearly figures has been compiled for this purpose.

Our analysis finds that while mercantile influence on monetary policies favoured the stability of the gold coinage, wage-payers, against received wisdom, did not typically gain from silver debasement. Rather, frequent alterations of the silver coinage were primarily associated with princely autonomy in monetary matters. However, the mint data confirms that in Florence debasements were carried out mainly for monetary reasons, while in Flanders these concerns were less marginal than is usually assumed. Fiscal debasements can be expected to have had a transitory effect on local gold-silver ratios. By contrast, the Florentine case shows, monetary debasements had an enduring impact, as they promoted convergence between the money and the bullion markets gold-silver ratios. Divergence between these two ratios could arise either as a result of changes in the relative availability of metals resulting in declining demand for coins the intrinsic value of which had become higher than their nominal value, or from the uncertainty caused by inflow of ‘bad’ foreign money. By addressing these distortions, monetary debasements also promoted stability of the money market gold-silver ratio. Using this yardstick to examine Central European debasements suggests that monetary motivations in this area were more important than it has been hitherto assumed. Indeed, monetary debasements appear to have been as frequent as fiscal ones. In addition, monetary debasements promoted convergence of the gold-silver ratios across an otherwise weakly integrated region, in a way that can be expected to have reduced transaction costs, thereby promoting trade.

Fernando Lima (Rio de Janeiro)

Sugar and metals as commodity money in colonial Brazil

It has often been suggested that sugar was adopted as commodity money in colonial Brazil on account of the limited circulation of metallic currency. This suggestion is correct in the sense that sugar might be considered commodity money in so far as its price was officially set and that it was made legal tender by the colonial authorities. Therefore, sugar became ‘the objective standard that must correspond to the money of account’, fitting in with the
definition of commodity money given by Keynes. The suggestion is also correct in the sense that shortages of cash occurred, particularly in the second half of the seventeenth century, not only in Brazil but also in Portugal (and in other parts of Europe).

However, I believe that it is not correct to say that sugar played the role of means of payment in colonial Brazil because of the shortage of coins. Contemporary documents revealing complaints from colonists about the shortage of hard currency may have led most historians to establish a direct link between the lack of coins and the adoption of sugar as means of payment. Instead, I argue that the monetary use of sugar should be understood mainly as a political device available to the colonial authorities for the purpose of mediating conflicts between, on the one hand, the owners of the sugar mills and sugarcane farmers and, on the other hand, the metropolitan merchants and their agents.

The paper begins with a brief description of the means of payment available in the sixteenth and seventeenth centuries in Brazil, followed by a review of the literature on possible reasons for the lack of hard currency in that period. Subsequently it presents a chronological account of Brazil’s monetary situation during the seventeenth century, while discussing the motivations of the colonial authorities in regard to the adoption of sugar as a means of payment. I emphasize three particular instances along the period: the mid-1610s, when sugar, possibly for the first time, was imposed as legal tender; the early 1640s, when the first of the several enhancements of the money that characterized the second part of the century took place; and in the late 1680s and early 1690s, when the colony implemented the monetary law of 4 August 1688 in the midst of a deep economic crisis.

The empirical support is based on the manuscripts and printed sources of the Historic Archive Ultramarino (AHU) (available at the Brazilian Geographical and Historical Institute in Rio de Janeiro), and the volumes published by the National Library of Rio de Janeiro (Historic Documents, DHBN) and by the Municipal Archives of Salvador (AMS), Bahia (Minutes of the Câmara and Letters of the Senate).

Catherine Schenk (Glasgow)
The retirement of sterling as a reserve currency after 1945: lessons for the US dollar?

Accumulations of large foreign exchange reserves by emerging economies such as China and Russia in the 2000s and the prospect for increased demand for precautionary reserves after the current global crisis have renewed interest in how international currencies emerge and how they can be replaced without disrupting the global economic system. The case of sterling in the postwar decades provides an opportunity to examine this process. Although a rapid global switch to the USD was widely predicted after 1945, the end of sterling’s reserve role was prolonged until the late 1970s. This paper reviews the schemes that managed the decline and reflects on what this experience suggests about the prospects for the USD.

Although the demand for reserve currencies can be modelled with a range of variables including issuing-country size, share of world trade and return on assets, these exercises have reinforced the importance of institutional rather than economic determinants. The important role of inertia is usually attributed to network externalities that prolong reserve currency status beyond the time predicted by economic fundamentals. These externalities also suggest a tipping point or landslide effect should one major creditor switch reserve assets, so that the retirement of a reserve currency is likely to be non-linear. How do we explain the gradual nature of the decline of sterling, what Krugman refers to as a ‘surprising persistence’? Was this due to British government efforts to prolong sterling’s role because it increased the capacity to borrow, because it enhanced Britain’s international prestige, or because it supported London as a centre for lucrative international finance? These are the traditional explanations in the literature, but archival evidence shows that from the 1950s many British ministers and officials recognized that the burdens of sterling’s role in terms of cost of borrowing and confidence in the exchange rate outweighed the benefits of issuing an international currency. Eichengreen suggested that ‘loyalty’ combined with a more rational
desire to avoid bankrupting a major trading partner were the key motives for countries to retain sterling reserves in the 1950s and 1960s. Krugman asserted that ‘the preeminence of sterling and its displacement by the dollar [after 1945] were largely the result of “invisible hand” processes, ratified more than guided by international agreements’. Closer examination of archival evidence from major holders of sterling as well as from the BIS and IMF shows that sterling’s role was prolonged both by the structure of the international monetary system and by collective global interest in its continuation. This paper presents evidence to show that as the market network externalities for sterling reserves eroded, the retirement of sterling as a reserve currency was postponed through deliberately negotiated management among the developed and developing world; not because of misplaced loyalty, invisible hand processes or delusions of imperial grandeur.
III/A  British Historical Statistics

Chair: tba

This session comprises the formal launch of the British Historical Statistics Project (BHSP). The three general editors (Middleton, Goose and Turner) will each make short presentations along with Sutch who is one of the general editors of the Historical Statistics of the United States Millennial Edition. The US project provides a part model and above all an inspiration for the British project which seeks to update both the classicism created by Brian Mitchell and to develop its scope and temporal range, utilizing the huge developments in technology which now permit an online edition.

This session is followed in turn by a further session in which all those wishing to become contributors to BHSP can meet the general editors and have a demonstration of the US online edition.

Presentations:

Roger Middleton (Bristol)
*Introduction to the British Historical Statistics project*

Richard Sutch (California, Riverside)
*US Historical statistics perspective*

Nigel Goose (Hertfordshire)
*Medieval/early modern statistics*

Michael Turner (Hull)
*Modern statistics*
Between commercial law and company rules: the ownership and control of modern Portuguese corporations, 1850-1914

This paper is centred on the current debate concerning ‘law and finance’, on the one hand, and corporate governance, concentration of ownership and company rules, on the other. Most of the literature arising from this discussion has focused on developed countries such as the UK, Germany, France and the US (exceptions are Chile and Brazil). Our aim is to draw attention to the case of Portugal during a period in which it imported the then ‘modern technology’ of corporate forms of business. Since this was an undeveloped low income but also slow growth economy on the periphery of Europe, with a largely under-educated population and a latecomer to innovation in general, it constitutes an interesting term of comparison with the experiences of more advanced nations.

The paper will employ a sample of around 50 joint stock limited liability companies in a variety of sectors. It will consider three main issues. The first one is the extent of creditor protection given by the legal framework to creditors using the well-known La Porta et al. scale. Two points to consider here are that, after 1867, Portugal had a laissez-faire posture on company law, but was in the French Civil code legal orbit. The second issue is that companies consequently enjoyed a wide autonomy of decision regarding which rules of governance to adopt. A considerable variety emerged in this respect and the determinants of such choices will be analysed. The third issue has to do with the structure of shareholding. Two aspects will be examined. The first is: was it a highly concentrated one, which encouraged a high degree of closeness between ownership and control? Or was there a good measure of popular capitalism present instead or perhaps also? The second is to try and establish which measures corporations took in order to attract small investors, namely providing them with greater minority protection than the law contemplated, offering shares with small denominations, following a generous dividend policy.

Were cooperatives once corporations? Business law and cooperatives law in Spain, 1869-1931

Studying the particular case of Spanish cooperatives will contribute to making clear the reasons why and how some new figures appeared in the business world: in some countries a cooperative was a way to avoid some of the problems of the joint stock companies. In several European countries the roots of the cooperatives were the necessity of a new business formula, more flexible or useful for their members than the older mercantile societies. It is not a causality that the relevant points of the cooperative are the same for business: liberty of association, liability of the members, legal personality of the new entity and sharing capital. In France, the Parliament approved a special status for the cooperative enterprise called ‘society by shares’ (1867). The Prussian Cooperatives Law of 1867, as well as the corresponding German law of 1889, both built on the established precepts of modern business law, even though these two pieces of legislation were passed by two distinct legislative bodies. In Spain the path was different: the Spanish legislation adopted very early the principle of freedom to create joint stock companies (1829-47; and since 1869); also the cooperatives could join this privilege, but the law did not guarantee elementary conditions like association rights for members.

Meanwhile, Spanish scholars have emphasized that the original source of cooperatives was a simple civil society or association, according to the General Association Act (1887). In
our paper we will try to probe that in Spain the cooperative appeared also like a business
formula alternative to the business entities contained in the Business Code.

The first legal writing on cooperatives, done in 1869, focused its attention on the fact
that the cooperative would allow to join in one entity the association right with the right to
make business without any external supervision – that is, without Authority permission. It
was also the first time that the word cooperative was written inside a Spanish law text; and
indeed it was inside one of the most relevant legal documents for the development of
capitalism – which was not a random fact: the Free Creation of Joint Stock Companies and
Credit Companies’ Act (1869). In this text there was no definition of cooperatives, only it
allowed them – the cooperatives – the capability to adopt the business form of the corporation
to act and contract with a third person or firm; it granted cooperatives a legal personality to
contract and exist. Firms, for the fact of being, had legal personality, but not a huge variety of
societies, for example cooperatives, had this characteristic.

The initial enthusiasm about the cooperative evaporated because in the next years
freedom of association disappeared among the Spanish individual rights. Working class
organizations were very weak and they suffered continuous persecutions by the following
governments (1874-81). There were also important gaps in the cooperatives’ legislation that
did not convince to the entrepreneurs.

In the 1880s, Portugal and Italy definitely included the cooperatives inside their new
Business Codes. Both countries, with a substantially different cooperatives’ movement,
copied the organization of the joint stock companies for the cooperatives. Paradoxically,
Spain in her new Business Code (1885) did not incorporate the cooperative; only under
exceptional circumstances would the cooperative have any business identity – general
partnership or corporation. In general terms, the cooperative would be part of a miscellaneous
group of societies defined by the General Association Act (1887).

Aside from agricultural cooperatives, which depended on the Agrarian Syndicates’
Law (1906), other cooperatives were regulated by the 1887 law on associations until the
passing of the first general law on cooperatives in 1931. The 1931 general law on
cooperatives, which was officially the first measure permitting the formation of cooperatives
in any activity, reflects the gradual disappearance of the cooperative’s mercantile
characteristics.

Germà Bel (Barcelona)
From public to private: Fascist privatization in 1920s Italy

Conventional wisdom on the history of privatization has been for a long time that the first
privatization policies were those implemented in the mid 1970s-early 1980s in Chile and in
the 1980s to early-1990s in the United Kingdom. However, recently published works
document and analyse a large-scale privatization policy in Nazi Germany, implemented by
Hitler’s government in 1934-37.

Interestingly, policy discussion on privatization (still named denationalization) was
well in the air in the early 1920s. Privatization in several sectors was proposed in countries
such as Belgium, France, Germany, Italy and Switzerland. Whereas most proposals on
privatization did not succeed, in Italy the first Fascist government applied a large-scale
privatization policy between late-1922 and mid-1925.

Contemporary economic analyses of privatization have so far overlooked the Fascist
privatization policy in 1922-25 Italy, which may well be the earliest case of large-scale
privatization in a capitalist economy. Several studies in the 1920s and 1930s noted the sale of
state-owned firms and the privatization of public monopolies by the first Mussolini
government. However, the modern literature on privatization totally ignores this early case of
privatization, and recent Italian literature on Fascist economic policy mentions it only in
passing, if at all. It is worth noting, though, that a few specific case studies provide valuable
information on some of the privatization operations; for instance, the privatization of the
telephones, the reprivatization of Ansaldo, and the concession of tolled motorways to private firms.

Indeed, the first fascist government privatized the state monopoly of match sale, suppressed the state monopoly of life insurances, sold most state-owned telephone networks and services to private firms, reprivatized the largest producer of metallic machinery, and awarded to private firms concessions to build and operate motorways. In fact, privatization was an important policy in Italy in 1922-25. The Fascist government was alone in transferring state ownership and services to private firms in the 1920s; no other country in the world would engage in such a policy until Nazi Germany did so between 1934 and 1937. So it is worth asking why the Fascist government departed from the mainstream approaches to state ownership in the 1920s and transferred state-owned firms and businesses to the private sector. While ideological tenets might have played some role, privatization was used mainly as a political tool to build confidence among industrialists, and to increase support for the government and the Partito Nazionale Fascista. Furthermore, privatization contributed to balancing the budget, which was the core objective of Fascist economic policy in its first phase.

The privatization policy of the Fascists in Italy was probably the first to be implemented in a capitalist economy in the twentieth century. It provides an interesting illustration of how different and compatible objectives can be pursued through privatization, since it was used to pursue political objectives and to foster alliances with large-scale industrialists, as well as to obtain resources in order to balance the budget. In a remarkable parallelism with Nazi privatization – implemented one decade later, the Fascist governments used privatization and regulation as partial substitutes as well. While relinquishing control over the privatized services and firms’ ownership, the Fascist government retained control over the markets by means of establishing regulations more restrictive and government-dependent institutions through which marked regulation was executed. A clear lesson emerges from interwar privatization in Europe: privatization by anti-market governments does not bring about a significant reduction of state intervention in the economy.

Key words: Privatization, Public Enterprise, Government, Fascist Economy, Italy.
JEL codes: G38, H11, L32, L33, N44.
Margaret Yates (Reading)

The market in freehold land 1300-1500: the contribution of feet of fines

The medieval market in freehold land, as opposed to customary land, has been largely ignored by historians due, in part, to the disparate nature of the evidence. This paper argues that feet of fines, despite their significant archival limitations, if employed with care and an understanding of the underlying changes in the common law of real property, are capable of providing time series data on the land market.

The fourteenth and fifteenth centuries were a period characterized by crises – agrarian, political and demographic – which affected the economy and market activity generally. In addition, changes in the law meant a shift from feudal to individual property rights and the way was paved for more capitalistic attitudes towards landholding. Landowners responded to the crises in a variety of manners, especially in the acquisition of land and the methods of disposal of their estates.

This paper draws on data derived from a pilot study of 1,400 manuscript feet of fines for Berkshire plus the printed records of an additional four counties, and these will be employed to chart changes in the medieval market in freehold land over two centuries. It will reveal shifts in the rate of turnover of land, the size and composition of landholdings, and the price or annual value of the land. The data are presented in a series of graphs and tables which will reveal similarities with many of the characteristics of the customary land market, that is, the sale of numerous small and often fragmentary parcels of land in the first half of the fourteenth century and the rise of small estates as a particular feature of the second half of the fifteenth century. Nevertheless, there were marked differences in the price of land, particularly in the later period, when the market in freehold land remained remarkably resilient to the more general downturn in the English economy in the mid-fifteenth century. It will be argued that this was due to the rise in demand for freehold land and lordships by aspiring individuals who wished to invest their newly acquired wealth in land. At the same time there were changes in agriculture, land use and attitudes to profit and investment that made the acquisition of freehold property a very desirable prospect.

The final contribution of this paper is to rehabilitate a well-known but much maligned documentary source and demonstrate its potential for charting long-term change.

Richard W Hoyle (Reading)

The other rural relationship: labour

This is an apostate’s paper. Historians from Marx onwards – through Tawney, Brenner (his supporters and critics) and ‘younger’ historians such as myself – have tended to see the relationship between landlord and tenant as the key dynamic in rural society. After all, Brenner’s Agrarian Class Structure is basically about this relationship. But, think of it this way. The competition in rural society is for the profits of agriculture. Farmers generate those profits, and landlords, through their control of the land, attempt to access them through rent. But a second category of person is also competing for those profits, and that is the agricultural labourer. If the farmer’s profits are falling, or if he is under rent pressure from his landlord, then he can attempt to maintain his profits by squeezing his labourers, or resorting to forms of farming which involve a smaller labour input. (The late nineteenth and early twentieth century are full of instances of this.) But rural labour is also an independent variable. At some moments it is available in abundance, at others in short supply. Shortages may reflect population decline: they might also reflect a disparity between the wages farmers can afford and what labourers can secure elsewhere especially when there are opportunities through migration or emigration to secure high wages elsewhere. Labourers can use moments of
shortage to try and increase their earnings: conversely, at times of high wage costs, farmers have every incentive to try and control their labour costs. In this way they can make common cause with their landlords. They also have every incentive to try and retain labour through forms of contract which are deeply disadvantageous to their labourers, but which ensure the supply of labour. At an extreme this includes forms of bond labour (slavery). Landlords who engage in farming can also adopt systems of bond labour (neo-serfdom).

Rural relations have often been seen as a simple balance between landlords and tenants which sometimes tips one way, sometimes the other. What stood between them and arbitrated the relationship (although Brenner and others are weak on this) is the state, and the systems of law which it controlled through its legislative institutions. The same is true of labour: the balance could tip one way or another in terms of supply and demand, but what stood at the centre of the relationship was the state, and the contractual forms that the relationship took were determined by the state. This paper wants to cover all this slightly theoretical ground before looking at the forms that rural labour relations took, primarily in the Anglo-American world between about 1500 and 1700. What it then wants to suggest is that the state’s approach to landlord-tenant relations can only be understood if the state’s parallel attitude to rural employer-labour relations are also taken into account. Indeed, they should be seen as being the opposite sides of the same coin. In doing this it has a large body of empirical work to fall back on, including some very fine recent work on Barbadian and Virginian slavery.

Juan Carmona Pidal & Joan R Rosés (Carlos III Madrid)

Was land reform necessary? Access to land in Spain, 1904-34

Land reforms are a major issue in economic history and development economics. The distribution of land from the hands of large landowners to the hands of poor peasant families is today on the political agenda of many countries, parties and social organizations. This policy measure is commonly justified on economic efficiency grounds and also for equity reasons. Ill-functioning land markets exhibit substantial entry barriers for landless participants and dramatic price distortions, which sometimes are translated into monopolistic gains in the hands of landowners, considerable fluctuations in land prices, and distress land sales by poor peasants. It is important to point out that these market imperfections have far-reaching impacts on equity given that for many rural households land is not only a factor of production but also their most valuable asset.

The opportunity for land reform was a central question during the early decades of the twentieth century. The objective of this new land reform was to redistribute land from large landowners to the hands of poor peasants. During the Second Republic (1931-9), several reforms affecting land ownership were implemented with the support of a large part of the Republican Parliament. The opportunity of these reforms was justified for reasons of economic efficiency, social equity and the distribution of political power. In economic terms, several contemporaries claimed that Southern large estates had diseconomies of scale and that substantial efficiency gains could be made by transforming them into small landholdings, where extensive production could be replaced by intensive farming. Implicitly, Republican reformers believed that land sales markets failed miserably and that the unmitigated operation of agrarian factor markets would generate equity problems.

Our research challenges this earlier, and until now well-established, view. In a previous article (Carmona and Rosés, 2009), we have shown that land sales and prices responded quickly to market stimulus and that Spanish land prices were driven by fundamentals. So, we conclude that land markets were efficient and competitive. In a competitive market, land will be allocated to the most efficient users and uses making land reforms unnecessary and detrimental for overall welfare. In consequence, from the economic efficiency point-of-view, a land reform redistributing land to poor peasants was neither efficient nor necessary. Completing these first results, we will show in this paper that the ratio
between rural wages and land prices grew significantly. In other words, the relative price of land was decreasing in Spain, particularly in the most dynamic regions. As a consequence, access to land for landless rural workers was improving, as their standard-of-living, during the first decades of the twentieth century. For all these reasons, we conclude that land reform was not justified on equity grounds.

The paper is organized as follows. In the section after the introduction, we briefly review the extensive recent literature on land markets reform policies. Section 3 outlines our new database, and methodology to be used to study the land markets. Section 4 reviews the evolution of wage-land prices ratios by provinces between 1905 and 1935. Section 5 discusses econometrically the determinants of land sales. Finally, we provide some concluding remarks and suggestions for further research.
Chiaki Yamamoto (Osaka)

Men’s unemployment and job opportunities for women: an analysis of the 1834 Poor Law Report

It has been widely supposed that English agriculture in the first half of the nineteenth century was characterized by the ‘high-wage north and low-wage south’ pattern. It has also been widely accepted that rural unemployment was a serious problem in the southern part of England. Then, why did agricultural labourers keep on staying in the south, rather than moving to the ‘high-wage north’? The conventional view, such as those proposed by Lindert and Williamson, and E.H. Hunt, tends to focus on men’s wages and unemployment, and when discussing male wages, attention is directed to monetized wages only. However, the immobility of southern agricultural labourers must have been regulated by decision making within household. They considered not only male cash earnings but also all other supplementary sources including in-kind income, job opportunities for wives and children, and poor law allowances.

Based on the 1834 Poor Law Report, this paper argues that the male wage gap between the north and the south was not as wide as previously thought if income in kind is taken into account. It also attempts to estimate rural unemployment rates from the same source. While the unemployment rate in the southeast was indeed much worse, the level of male wages in the north was not high enough for rural southern workers to leave their home villages. The 1834 Poor Law Report is well known and economic historians have extensively utilized it. It covers more than 1,000 parishes and asks 53 questions, including the ‘Number of Labourers generally out of Employment, and how maintained in Summer and in Winter? (Question 6)’ and ‘Weekly Wages, with and without Beer or Cyder, in Summer and in Winter? (Question 8)’. Because of the lack of information, unemployment is one of the most unmanageable concepts in economic history. Some historians have attempted to take unemployment into account, but direct indication of the quantitative magnitudes is extremely difficult to obtain. In fact, contemporaries as well as recent historians recognized the serious unemployment in the south from an indirect indicator, the expenditures on poor relief, which skyrocketed after the introduction of the Speenhamland system. A combination of the 1831 Census Report and answers to Question 6 of the 1834 Poor Law Report allows us to calculate parish-level unemployment rates directly. And the result confirms the large labour surplus in the south.

The existence of this labour surplus has been explained partly by the agricultural practice and institutional arrangement in the region. The labour demand in arable farming greatly fluctuated, and a punctual supply of harvest labour was essential to farmers’ profit. This led southern corn-growers to having a strong incentive to preserve sufficient labour, even if they had to defray the burden of poor rates to supplement incomes of seasonally-unemployed rural workers.

This paper attempts to add another explanation to this. A detailed analysis of the answers to Question 8 reveals that drink allowance, such as beer and cider, was prevailing in the south more than in the north. As a result, inclusion of this sort of in-kind income into the calculation makes the ‘high-wage north and low-wage south’ pattern less obvious. In other words, although the wage level in the south was lower than the north, the total amount was probably sufficient for southern agricultural labourers to keep on staying.

It is, however, difficult to reconcile this hypothesis with evidence on job situations for women. The report also asks ‘Have you any and what Employment for Women and Children? (Question 11)’ and ‘What can Women and Children under 16, earn per week, in Summer, in
Winter and Harvest, and how employed? (Question 12). The recent work by Nicola Verdon (‘The rural labour market’, EcHR 60(2), 2002) uses the same source and she calculated percentages of parishes within each county that mention domestic industry and agricultural tasks available for women. While her county-level categorization does not show a particular regional concentration of female job opportunities (especially in agricultural tasks), larger units of observation of the North-East, North-West, South-East, and South-West, which I applied in this paper, suggest that female job opportunities were more plentiful in the north. Other descriptive information on the situation of rural industries available in the south has suggested that most of them were swept away in the course of the 1820s and 30s, and, therefore, that labour participation rates of women in the south had become very low by the time the Poor Law Report was published.

This suggests that there still remains a non-negligible north-south gap if measured in household income, not just in the breadwinners’ wage earnings. However, the abundance of female job opportunities in the north was a result of the industrial revolution of the region, and the percentages of parishes in which agricultural tasks were mentioned were almost identical. While cottage industries in the south were declining sharply, most southern farmers still needed the hands of their employees’ wives and children at harvest time. Because the dismissal of a male worker meant that the farmer might also lose the labour of his wife and children, this must have strengthened the bargaining power of male agricultural labourers. Thus the higher level of unemployment and its consequence, i.e., the heavy burden of poor rates, in the south were institutionalised through this peculiar kind of bargaining structure, which manifested itself in relatively higher male real wages of the region.

Jacob F Field (Cambridge)

Service, gender and wages in England, 1700-1850

This paper aims to examine changes in wages and occupations in the service sector in England in the period from 1700 to 1850. Particular attention will be paid to the gender differences in the sector. Using a large national sample of household and estate accounts and hiring agreements drawn from across England, as part of the Occupational Structure of Britain c.1379-1911 project, this paper will show how wages and roles in service may have changed from the early eighteenth century to the mid nineteenth. Rather than examining just one locality, a nationwide dataset will be utilized, appreciating both urban and rural service. Previously, the only national series of wage levels for servants was produced over fifty years ago by J. J. Hecht, using mainly wage data from eighteenth-century newspaper advertisements and literary sources. It will compare wage levels across regions and examine how they changed over time, and also how they may have responded to changes in the cost of living. The paper will consider the different positions occupied by males and females within the household, and the relative differences in the wages paid to them. The wage gender gap in service will also be considered, and to what degree this changed over time and region. This paper aims to answer the question of what the exact occupations of servants were, and what the differences in paid remuneration for these occupations were, as well as non-cash wages.

Service was an intrinsic part of English society and demographic and economic structures in the period considered here. Particularly for females service was both an important part of the lifecycle, as well as a life time employment for some. The growth of this sector was such that by 1851, one quarter of adult women were employed as servants. Moreover, unlike the three other sectors important for female occupations (footwear, textiles and agriculture), service was not in decline in importance over the first half of the nineteenth century. The label of ‘servant’ or ‘maid’, however, masks the fine gradients of experience that lie within it. Classically, domestic service has been considered an example of the tertiary sector par excellence. However, certainly for females employment as a maid could also encompass roles associated with the primary and secondary sectors, which are hidden if an individual is described solely as a ‘servant’. Women working in service were not always
solely part of the domestic sphere. Rather, service cut across lines of ‘indoor’ and ‘outdoor’ work. Using evidence from contemporary accounts and memoranda, this paper will argue that, for female servants at least, service cannot monolithically be considered part of the tertiary sector. This paper will show that the complexities of female service demand an occupational structure of their own to be appreciated fully. The service sector encompassed a wide range of roles and occupations – this paper will examine their differences and aims to understand the variegated nature of service.

Amy Erickson (Cambridge)

*Marital status and economic activity: interpreting spinsters, wives, and widows in pre-census population listings*

The use of marital status in the early modern historical record to identify a woman as a spinster, wife or widow is commonly interpreted by historians as a sign of economic inactivity. The assumption is that if she was ascribed a marital rather than an occupational status then she must have been her father’s or husband’s dependent. Population listings often refer to a few women by occupation and most women by marital status or by no designation at all, which appears to reinforce the picture of economic inactivity by suggesting that if most women had been gainfully employed then they too would have been identified by an occupation.

The assumption of economic inactivity for the majority of women has been examined only in the context of later nineteenth-century censuses, and the issue remains unresolved. But closer analysis of eighteenth-century population listings such as the 1767 Return of Papists and the 1787 Westmorland Census allows a better understanding of what enumerators meant by the marital designations. Comparison with household and farm account books highlights the types of labour that are missing in population listings, labour which was often done by women but did not normally merit the status of an occupation in the eyes of the male enumerator.

My paper aims to offer a more comprehensive analysis of the rural economy than that undertaken in the growing literature on the gender disparity in agricultural wages, by including consideration of tasks and enterprises which do not appear in most farm account books because they were not related to grain production, but which nevertheless contributed to the support of rural households. These are normally found in household account books.

I will look in depth at the terminology of marital status, first showing that ‘spinster’, when used outside of the court system, was almost always an occupational rather than a marital designation, and second, examining what was meant by ‘housewife’, and its relation to husbandry. In view of the conclusions to be drawn about unmarried women and wives, I will consider how far a household head called merely ‘widow’ in a listing might be assumed to be living on unearned income. I also hope to be able to examine whether male agricultural wages included female labour, as hinted by early nineteenth-century government investigations, and the extent to which multiple occupations ascribed to male heads of household masked wives’ employment.
III/E  Development of Economic History

Chairs: Peter Kirby & Christopher Godden (Manchester)

Keith Tribe (Sussex)
W.J. Ashley 1860-1927: from historical economics to economic history

William Ashley’s career coincides with the emergence of economic history as a particular component of British historical writing and its consolidation with the formation of the Economic History Society. Many of the early British economic historians – Ashley, Cunningham, Clapham – had some kind of relationship with the parallel emerging university discipline of economics, and it has become a commonplace that as this new discipline developed into a formal and abstract body of reasoning it marginalized and then excluded the teaching and study of economic history as a necessary part of the discipline. I suggest in my paper that this perspective on the development of economic history in Britain is very partial, involving both a misreading of economics in the early twentieth century and the nature of the economic history that historians pursued.

The early formation of Ashley in the 1880s as part of an Oxford group of historical economists has been documented extensively by Alon Kadish, and this work forms a natural starting point. However, a number of more recent studies – Newman’s edition of Edgeworth’s Mathematical Psychics, Ted Porter’s work on the history of statistics, Young and Lee on Oxford Economics, Phyllis Deane’s biography of Neville Keynes, Mike White’s essays on Jevons, Maas on Jevons, and most recently Winch’s Wealth and Life and Cooke’s Intellectual Foundations of Alfred Marshall’s Economic Science – have substantially expanded our understanding of economics in Britain at the turn of the century, hence enabling us to recast the story of the relationship of ‘economics’ to ‘history’ at this time and so better understand why economic history in Britain assumed the form that it did.

As late as 1908 Ashley, then Professor of Commerce at Birmingham, still considered himself an economist, since he put himself forward as Marshall’s successor as Professor of Political Economy at Cambridge, whose new Economics Tripos had recently completed its first full cycle – and so his candidature has to be measured against the established programme of Cambridge economics, rather than the rather vestigial part that the teaching of economics played in the Commerce degree that he had established at Birmingham a few years earlier. All the same, it should be remembered that the Cambridge Tripos remained the only dedicated economics degree course in Britain for many years, and that the teaching of economics within the framework of a commerce degree was the principal way in which many students first encountered economic principles – and of course John Clapham was Professor of Commerce at Leeds before he became Professor of Economic History at Cambridge.

Attention will therefore be shifted away from ‘historical economics’ circa 1900 towards a more complex understanding of the rate of development of economic argument (broadly conceived) in the early decades of the twentieth century, and the role played by historical argument within this development. Since Ashley remained actively engaged in this debate up to his death the contributions that he made provide us with a useful thread through which we can elaborate our understanding of the practice of economic history in Britain.

Negley Harte (University College London)
Economic history at the LSE, 1895-1921

The London School of Economics was one of the institutions that created economic history as a subject, after Cambridge and Oxford. From the School’s foundation in 1895 the teaching of an economics based on the facts of historical development was set central. W.A.S. Hewins, the first Director, regarded himself as an economic historian, and Cunningham was brought in from Cambridge to confirm the anti-Marshallian tone. When Hewins left in 1904, Lilian Knowles was appointed to the first lectureship specifically in economic history in any British
university. She was elevated to a chair in 1921, by then the second in the country, since the first was created at Manchester in 1910 for George Unwin – a centenary which surely should not go unmarked. By 1921 both Eileen Power and R.H. Tawney were at the School, and the LSE was to continue to play a crucial role in the subject’s drive to maturity.

Maxine Berg (Warwick)

*The International Economic History Association: world congresses and Cold War legacies*

This paper raises some issues from a Panel on the 50th Anniversary of the International Economic History Association at the 2009 WEHC in Utrecht. A wide range of members of the Association discussed their parts and experiences in the origins and early years of the Association.

The International Association of Economic History originated in an initiative taken during the 1930s by Eileen Power, Sir Michael Clapham, M.M. Postan and Marc Bloch to bring together Europe’s economic historians to write wide comparative chapters in volumes of *The Cambridge Economic History of Europe*. The project was carried forward following the war by M.M. Postan who then together with Fernand Braudel moved in the later 1950s to bring economic historians into an International Association.

My paper will address the institutional and cultural framework of the congresses across the Cold War divide, their financing and the special role played by France.

Topics include:
- Origins of the International Association of Economic History
- The role of the Ecole Pratique des Hautes Etudes
- Connections between the International Association and the Datini Institute in Prato, Italy
- The role of the Rockefeller Foundation and meetings at the Villa Serbelloni
- European and American economic historians
- Eastern bloc countries – contacts and access
- Participation of wider world countries: Japan and India, Latin America
- Non-participation of China and African countries

John S Lyons (Miami)

*Theory and fact in the practice of economic history in America and Europe since the ‘Cliometrics Revolution’*

About a half-century ago in North America, a group of economic historians began to develop a more explicitly quantitative and theoretical approach to economic history than that of their predecessors (and teachers); it was known first as the ‘new economic history’; not much later as ‘cliometrics’, and in the UK shortly thereafter as ‘quantitative economic history’. At least some members of this initially small group thought of what they were doing as ‘revolutionary’, notably Douglass North and Robert Fogel, whilst others such as William Parker and Jonathan Hughes were more cautious in their (self-) assessments.

Nonetheless, this quantitative-theoretical style has infused itself into much – but not nearly all – of our endeavours over the ensuing decades. Steve Broadberry has remarked recently that ‘there has … been a lasting change in the style of economic history. … It is not the most revolutionary hi-tech version of Cliometrics that has triumphed, but rather the more basic quantitative historical approach incorporating simple ideas from economics. The landscape of economic history thus looks very different after the Cliometrics Revolution’ (*History of Economic Ideas* 17:1 (2009), 238).

Part of this landscape, however, includes the battlements of what seem to be warring camps of scholars who have over the decades divided themselves into sub-specialities: quantitative economic historians (and not), business historians *à la* Chandler (and not), and social historians who have taken the linguistic turn (or not). The tensions amongst these
camps centre on the relevance or usefulness of formal theorizing and quantification in economic and other forms of history, and seem related to the ‘cultural’ origins of those trained as, or living with, economists or historians in their scholarly lives.

But it is difficult not to endorse Deirdre McCloskey’s assertion: ‘Mute facts unarranged by human theories tell nothing; human theories unenlivened by facts tell less than nothing’ (*Econometric History*, 1987, p. 21). Each of the parent disciplines of economic history has its characteristic vices: History for detail, narrative, and often implicit theorizing about cause and consequence; Economics for theoretical and explicit model-building, sometimes in wanton disregard of qualitative or quantitative facts nullifying the model. (*Viz.* Deirdre McCloskey, *The vices of economists, the virtues of the bourgeoisie*, 1996).

This paper explores, briefly, trends in the character of journal publications in economic history (primarily), augmenting a study of diffusion of the ‘cliometric’ style by Robert Whaples (*JEcH* 51:2 (1991), 289–301). Further, it examines a small set of works of primarily British and European economic history (some committed by Americans), to assess the relative importance of fact and theory in their arguments. In this latter exercise I act as a member of the economic historians’ ‘vice squad’, hopeful nevertheless that some works in economic history, by tempering and combining the disciplinary vices, have made them a virtue.
III/F Finance

Chair: tba

Tony Moore (Reading)

The profits and pitfalls of lending to the king: the Frescobaldi of Florence and the English Crown, c.1299-1311

This paper will present some of the preliminary findings of an ESRC-funded research project, ‘Credit Finance in the Middle Ages: Loans to the English Crown c.1272-1340’, based at the ICMA Centre in the University of Reading (http://www.icmacentre.ac.uk/medievalcredit). This project forms part of a series of collaborations between medieval historians and economists/financial academics, which aim to apply modern economic and financial analysis to medieval sources. Previous studies include: using modern tools for valuing annuities and pensions to assess the economic rationality of monastic corrodies; advertising and branding in the medieval pilgrimage industry; and the use of forward contracts in wool and the efficiency of the medieval wool market. The current project looks at the financial relationship between the English crown and a succession of Italian merchant societies during the period 1272-1340. In addition to furthering our historical understanding of this period, the ultimate aim is to use the data extracted from the records to construct a reputational model of sovereign borrowing. This will investigate how the ‘credit rating’ of the English crown affected both the availability of credit and the interest rates charged for that credit, a question of more than purely academic interest today.

This paper will concentrate on the relationship between the English kings Edward I and Edward II and the Italian merchant society of the Frescobaldi of Florence. The Frescobaldi had succeeded the Ricciardi of Lucca as ‘bankers to the Crown’ c.1299, after a five-year hiatus following the Europe-wide financial crisis of 1294 (examined in a paper presented before the EHS in 2009), and they remained in royal service until the leading members of the society were expelled by name from England by Edward II’s political opponents in 1311.

The paper will first look at how the financial relationship between Crown and banker worked in practice, based on a comprehensive analysis of the primary source material. These interactions will then be compared and contrasted with those between the kings and other merchant societies, notably Edward I and the Ricciardi before 1294, and Edward III and the Bardi/Peruzzi in the 1330s and early 1340s. Secondly, it will consider the benefits of this relationship for both parties, and attempt to quantify the financial return received by the Frescobaldi on their lending to the Crown. Finally, the collapse of the relationship will be re-examined, including the question of whether the financial woes of the Frescobaldi at this time can be blamed on Edward II.

John Tang (Maryland)

Financial intermediation and late development: the case of Meiji Japan, 1862-1912

Japan’s rapid industrialization in the late 1800s has been attributed in part to its precocious financial system development. With financial institutions that mobilized capital, coordinated investments, and monitored businesses, Japanese entrepreneurs were able to lower the risks and transaction costs involved in establishing modern enterprises and gave the economy an advantage in building capital intensive industries and achieving economies of scale.

This theory of finance-led industrialization, however, has until recently been supported anecdotally or by highly aggregated data, neither of which permit inter-industry or subnational comparisons. Furthermore, existing research has focused on the depth of the financial sector, neglecting the extensive growth of intermediaries throughout the economy. To test whether financial development had a causal impact on the emergence of modern industries, I use a newly developed dataset of firm startups drawn from corporate genealogies
from the Meiji Period (1868-1912). These genealogies provide information on a firm’s date of establishment, industry, ownership, and geography, which allows more rigorous time-series analysis as well as examination of financial sector development across both space and time. Also, by focusing on entrepreneurial startups, I can also better identify firms that required external financing and thus approximate the availability of financial intermediation.

Results from dynamic general method of moments (GMM) analysis, which uses lagged values of multiple industrial and financial series as instrumental variables, indicate that financial sector development robustly predicts later startup activity in modern industries. Furthermore, I find that financial intermediation had differential effects depending on industry, ownership, and type of financial intermediary (e.g., bank versus other finance). Heavy industries like chemical or machine manufacturing benefited more from financial intermediation than light industries like food processing and textiles, which makes sense considering firms in heavy sectors require greater financial resources to start up that only formal financial institutions could provide.

As for ownership and financing, while financial intermediation of any kind had a positive impact on both listed and unlisted firms, startup activity of listed firms (e.g., joint stock) is more strongly associated with non-bank financial institutional growth while unlisted firms gain more from greater numbers of banks. Given that firms listed on public exchanges comprise a majority of startup establishments, this finding suggests that early industrialization may have relied less on bank intermediation than previously thought. Instead, the result supports recent revisionist interpretations of Japanese development that the financial system was less underdeveloped than supposed in the latter part of the Meiji Period. Other non-financial factors like urbanization, climate, and natural resource endowment also appear to affect industrial development. Taken together, these findings suggest that while support remains for finance-led growth in Japan, aggregate financial figures may insufficiently characterize the effect of financial intermediation on industrial and economic development. Clearly, finance played a significant role in industrialization, despite the latter being oriented initially toward light sectors. This study also qualifies earlier discussion of what contributed to Japanese development by demonstrating the importance of industrial agglomeration and the relative insignificance of foreign commerce.
An income-based estimate of Gross Domestic Product for all-Ireland in 1901

The lack of accurate figures for Gross Domestic Product (GDP) for all-Ireland for the nineteenth and early twentieth century remains an issue of some concern for Irish economic historians. Key statistics required for accurately determining GDP for all-Ireland are unavailable for much of the period in question, necessitating the use of estimates in calculating these figures. With this in mind, it is the aim of this paper to create an estimate of GDP for all-Ireland in 1901. The method of doing so will be to utilize an income-based approach to calculate GDP for this year.

By creating this estimate it is hoped that the methodology developed will develop a roadmap for further estimates for the latter half of the nineteenth century and early years of the twentieth. Prior to circa 1850, existing records are either too scant or too unreliable to make accurate estimates using an income-based approach. Crucially, during the years of the First World War and thereafter, Irish statistical records were either damaged or their collection disrupted.

As a result of this discrepancy, the methodology outlined can be best applied to the years from circa 1850 to 1914. During this timeframe, Census of Population returns were made decennially from 1851 up until 1911. By 1856, the Revenue Commissioners annual Income Tax Reports were also becoming increasingly reliable, though questions over the accuracy of the returns still remain (see Begley, Bielenberg & Cullen). These returns provide the necessary occupation and income statistics for the completion of an income-based estimate. Cullen has already completed a revised estimate of National Income as well as GDP for 1911 using a similar methodology. Therefore, the next appropriate date for consideration is 1901.

The first section of the paper examines varying estimates of income arising in agricultural, in particular focusing on Turner’s estimates of the total value of Irish agricultural output as well as the question of agricultural labourers wages. The second section focuses on Kiernan’s estimation of rents of non-agricultural buildings and dwellings, with some commentary on the limitations of the method involved. The next section uses occupational data from the Census of Population in conjunction with a series of estimates for wages falling below the income tax exemption limit of £160 (including agricultural labourers not covered by Turner’s estimate). In the fourth section income from Schedules D and E is considered before further additions and subtractions are taken into account. Finally a range of estimates are presented with some commentary on the figures presented.

Estimates of Regional GDP (GVA) in the United Kingdom, 1901-2001

This paper presents estimates of the distribution of Gross Domestic Product at factor cost or its modern replacement Gross Value Added at basic cost between regions of the United Kingdom for each census year from 1901 up to and including 2001. From 1971 onwards our results are based on official statistics, which started in 1966 on an annual basis. For estimates prior to this we have used the Geary – Stark method to calculate regional GDP. This method basically calculates relative productivity indicators, hereafter known as ‘relatives’, to allocate output by sector to regions given the number of economically active persons (workers) in each sector/region cohort. In principle as many sectors as for which all necessary data are available can be used. Data limits us to the traditional three sectors of agriculture, industry and services. The ‘relatives’ adopted are invariably sector relative wages acting though direct net output based ‘relatives’ are also used for some years as is turnover per employee.
The results are derived from constant price (cost) regional GDP (GVA) in 2003 reference year values and are presented as the proportionate shares for each region or in index form in relation to a base year or a national average. Users can link these to any current year or constant cost base year of their choice. Periodic changes in the geographical definition of the UK regions mean that it is not possible to produce a homogeneous series right through from 1901 to 2001 therefore we have combined some of the English regions to produce a series with geographically identical regions over our data period. We examine the trend of regional shares in GDP and per capita GDP. We also briefly consider the possible impact of allowing for variations in regional price levels and also the possible distortion as a result of the exclusion of the ‘continental shelf oil output’ or ex regio as the ONS calls it.
The decline of ‘Saint Monday’ occupies a prominent position in debates over the transition to a capitalist labour market. Most scholars agree that some form of customary Monday holiday existed in the past but there is little agreement over its chronology or its effect upon labour productivity and living standards. Reid claimed that ‘the eradication of Saint Monday did real harm to the actual and potential quality of working-class life … in submitting to the norms of industrial capitalism the notion of a proper balance between work and leisure was lost’. According to Reid a Monday holiday was widespread until the second half of the nineteenth century from which point the custom gradually gave way to a Saturday half holiday. By contrast, Voth has argued that Saint Monday was not enjoyed by workers in the north of England after 1760 and elsewhere it had become unimportant by 1800. According to Voth, the disappearance of Saint Monday and the reduced importance of holy days were the two main factors responsible for the substantial increases in labour inputs per worker between 1760 and 1830. Feinstein, too, believed that a decline in customary holidays resulted in a substantial increase in working hours during the Industrial Revolution. Others have claimed that the Monday holiday was of comparatively late origin: Rybczynski suggested that the custom ‘probably started at the end of the eighteenth century’ and de Vries thought that it only emerged after 1780. Saint Monday has also been depicted as a ‘greater recourse to binge drinking and binge leisure’ following pay days, though Harrison’s research on the occurrence of crowds in the period 1790-1835 led him to conclude that it ‘was a fixed arrangement and not merely a by-product of weekend inebriation’.

This paper re-opens the divergent debate about the importance and longevity of customary Monday holidays and offers a detailed study of miners’ daily work patterns during a crucial period of industrial transition. It addresses some hitherto unexplored definitional problems relating to worker absenteeism in eighteenth- and nineteenth-century Britain and contends that Saint Monday observance was a much more complex practice than has been

---

567 The author is grateful for financial assistance from ESRC Research Grant 000-239-222. Dr T.W. Nutt provided invaluable assistance during the data collection and input stage of the project and Dr L.D. Schwarz offered valuable and supportive comments. Thanks are also due to the staff of the Northumberland Record Office.


569 Voth holds that a decline in customary holidays led by 1830 to an average working day in London of 11 hours and fifteen minutes and a national average working year of 306 days. In the north of England, it is argued that workers worked 13 hours and 57 minutes each working day. H-J Voth, ‘Time and Work in Eighteenth-Century London’, Journal of Economic History, 58, 1 (1998); H-J. Voth, Time and Work in England, 1750-1830 (Oxford, 2000). Voth, Time and Work, p.175; tab.3.30, p.123; p.159; tab. 3.6, p.67; p.88; see also Schwarz’s review in Albion.

570 Voth argued that abstention from leisure time by workers was responsible for between 50 to 70 per cent of total output increases between 1750 and 1850. Voth, Time and Work, pp.234, 2.


described in much of the literature. A complete cessation of work by the coalmining labour force was rare in any period between the 1770s and the 1860s. A preference for Mondays following a pay Saturday was evident up to the 1830s but thereafter idle days were as likely to occur on any day of the working fortnight. By contrast, short work on Mondays following a pay Saturday was ubiquitous throughout the period, though this had declined somewhat by the 1840s. Short working on non-pay Mondays, meanwhile, actually increased from around the 1830s and this probably corresponded with contemporary increases in work demands upon hewers. Finally, individual voluntary, one of the major worker-defined forms of absenteeism, is virtually impossible to measure with accuracy because of the profound difficulty in estimating the number of shifts available for work on any day in historic sources. Understanding the causes of individual voluntary absences is problematical since they arise from innumerable decision-making processes on the part of individual miners.

Jim Phillips (Glasgow)

The moral economy of the Scottish industrial community: new perspectives on the 1984-5 miners’ strike

This paper makes a contribution to debates about the economic framework of industrial politics by examining aspects of the 1984-5 Miners’ Strike in Britain, focusing on developments in Scotland. The strike against pit closures is generally understood in terms of peak level relations between the Conservative government, the National Coal Board (NCB) and the National Union of Mineworkers (NUM), and the shifts in energy supply that decisively weakened the miners’ bargaining position. It is also often portrayed as a top-down imposition on the workforce and the industry by the ‘politically-motivated’ union leadership, and as a public order issue, with many arrests and prosecutions arising from the picketing of mines, steel works and other economic units.

This paper adopts a fresh perspective, exploring how the year-long strike was sustained by community involvement. The key research question is the extent to which trade unionists and their supporters in mining communities articulated a distinctively moral economic discourse in support of the strike. E.P. Thompson’s famous moral economy of the eighteenth century English crowd is adopted and adapted here, with the strike presented as a re-emergence of a feature of earlier coalfield protests. This was the nineteenth- and early twentieth-century tradition of popular, direct action in the coalfields, involving women and children, and the ritualized humiliation of strike-breakers and colliery officials and managers. These accompanied and occasionally superseded ‘bureaucratic’, union-based procedures, especially in national disputes, notably in 1887, 1894, 1912 and 1921.574

This tradition had been revived in the strikes of 1972 and 1974, the first national disputes in the coal industry since the 1920s, and was even more sharply illustrated by the struggle to defend pits and local jobs in 1984-5, mediated by moral economic ideas about social resources and communal interests. Coal industry jobs, for instance, were ‘owned’ by the community as much as the individual employee or employer, to be retained within the community from one generation to the next, and this explains the complex and sometimes antagonistic response by many miners to those – especially younger men – who accepted redundancies or transfers to other pits from those that were closing or being threatened with closure. Picketing, even where characterized by ‘disorder’, notably at the coal and ore terminal at Hunterston, and the steel works at Ravenscraig, and at pits where workers broke the strike, may likewise be understood in terms of a ‘moral economy’ discourse, with crowd discipline and goals highly evident. The ‘rough music’ of earlier crowd protests can likewise be ‘heard’ in the responses by strikers and their supporters, including perhaps especially female family members, to news of pit closures before the strike, with NCB officials verbally

and physically confronted, and to those who returned to work during the strike. The day-to-day organization and maintenance of the strike – including the physical sustenance of its supporters – similarly involved a ‘moral economy’ emphasis on equitable resource distribution and the mobilization of the many resources embedded in industrial communities. These included the endeavours of coalfield women, in paid employment as well as in strike organization, and the support of Labour-controlled local authorities which allowed strikers to defer council housing rents. Neither of these resources was available to miners in the great disputes of the 1920s, and provided some of the essential tools of strike endurance in 1984-5. Contrasting levels of endurance across the Scottish coalfields, indeed, can plausibly be posited in terms of localized differentials in access to each of these resources.

The paper builds on the author’s published work on industrial politics in Scotland and the UK in the 1960s and 1970s, and the origins of the 1984-5 miners’ strike in Scotland. It utilizes a variety of perspectives from economic and social historical literature, and is based on NCB and NUM records and materials, Scottish Office and Department of Energy records, the 1981 Population Census, reports in the daily press, and participant interviews conducted by the author.
IV/C  Interwar Britain

Chair: Carol Heim (Massachusetts)

Peter Scott & James Walker (Reading)

That’s the way the money goes: expenditure smoothing and household budgeting in interwar Britain

The interwar years witnessed major changes in working-class consumption levels and patterns, with a significant rise in living standards owing to rising incomes and smaller families. Yet, despite excellent pioneering research in this area, and more recent studies on specific aspects of working class credit, relatively little is known about the specific quantitative contributions of different savings and credit mechanisms to household management. This paper focuses on the strategies working-class households used to ‘smooth’ expenditure over time and guard against negative contingencies such as illness, unemployment, and death.

We first examine the various methods by which working-class families smoothed expenditure and protected against negative contingencies, together with their popularity and costs. We then estimate their overall impact on family budgeting and discretionary (i.e. uncommitted) income, using 603 mainly newly-discovered returns from the largest and most-detailed national pre-1945 household expenditure survey, conducted by the Ministry of Labour in 1937/38.

Committed expenditure is found to represent over a quarter of aggregate working-class household expenditure on clothing and footwear, consumer durables, and medical, insurance and contractual savings items. Furthermore, it was particularly important for low income families, accounting for half of aggregate expenditure under these headings for households with weekly incomes of under 50s, but less than 20 per cent for families with incomes of over 120s. When accommodation costs are added, committed expenditure is found to represent 24.0 per cent of household expenditure for families with incomes of under 50s per week, falling to 20.0 per cent for those with incomes above 90s per week.

Committed expenditure acted to further limit the extent of ‘discretionary’ expenditure (net of food and fixed costs) for lower income families, relative to those on higher incomes and, therefore, lower proportionate food expenditures. This acted as a constraint on the development of a ‘mass market’ in new classes of consumer goods which working-class families did not already prioritize, as such goods would have to compete for a pool of non-committed expenditure which was particularly restricted for those towards the bottom end of the working-class income spectrum. This may go some way to explaining why the interwar working-class consumer market both proved receptive to a major expansion in expenditure on items such as furniture – where buying on HP had become well-established during the 1920s – but was much more resistant to goods such as electrical appliances, where the major marketing initiatives to the working-classes took place during the 1930s.

John Cantwell (Rutgers) & Anna Spadavecchia (Reading)

Innovation, industrial competitiveness and British regions in the interwar period

Innovation, particularly in the form of development and adoption of new technologies, is central to long-term industrial competitiveness, economic growth and rising living standards. Interwar Britain constitutes a particularly interesting case study – characterized by extremely high rates of unemployment, declining international trade and an industrial structure dominated by industries in secular decline. However, it also witnessed impressive levels of corporate innovation, with the rapid expansion of ‘new’ assembly and science-based industries, a process accompanied by important innovations in both product and process technologies as well as major changes in the scale, organization and geography of industrial development.
This paper enhances our understanding of British interwar innovation and its contribution to the country’s competitiveness at the sectoral level. We utilize a newly constructed dataset of patents granted in the USA to British inventions, for various benchmark years. The information collected includes patent number, technological field, location of the generating research facility and corporate assignee. Therefore, this new dataset allows us to map the distribution of innovation activity across British regions, to study their Revealed Technological Advantage (RTA), and to analyse the composition of activities across regions.

The results of the analysis for the interwar years are placed in the context of comparable studies for other periods, thus providing a long-term perspective on innovative activities in British regions as well as helping to explain their path and rate of economic growth. This long-term analysis is important not only from a historical perspective but also from a theoretical one, as it enables us to assess various propositions of the theory of technological accumulation, such as the cumulativeness of technological innovation, its incremental development and differentiation.
 Colonies, copper, and economic development in Britain, 1680-1720

In the last two decades a scholarly consensus has emerged in support of a diluted version of the Williams thesis. It is widely acknowledged that British overseas expansion, in which the slave plantation system played a pivotal role, provided an important extension of resources and accumulation of capital in the long eighteenth century but its contribution to improved efficiency in the economy is less well understood. This paper uses the case of the copper industry to show how the imperial project made substantial demands on domestic resources and ingenuity which stimulated, not only extensive, but also intensive growth.

The value of the West Indian colonies rested heavily on their sugar production which required not only large supplies of labour from Africa but also a substantial investment in processing equipment including one copper boiler for every eight slaves. Merchant records and trade statistics are used to show that this demand shock played a crucial role in reviving Britain’s moribund copper mining industry. There was a massive increase in copper output after the Restoration which was almost entirely destined to supply export markets with Africa and the West Indies accounting for 35 per cent and over 50 per cent of exports respectively. The expansion was not easily achieved. Cornish deposits are deep, and the mines faced severe drainage problems but the period saw sustained investment in perfecting technological improvements such as the reverberatory furnace in the 1680s and Savery and Newcomen’s steam engines in the subsequent two decades. New opportunities for profit in a small industry seem to have promoted an unusually strong spirit of invention which helped to make it the leading European producer by 1750.

Heart of darkness: did French colonial investment pay, 1919-39?

This article revisits the topic of French colonial investment profitability during the interwar period, using new data and methodology. More precisely, we wondered whether it was still rational for French investors to include colonial common stocks in their portfolios at the final stage of colonization, just before the process of decolonization of the French colonial empire.

According to Offer and Pollard the debate on the performance of colonial investments is closely related to the question as to whether the empires produced economic returns higher than the capital costs themselves and whether these higher returns justified the cost of maintaining the empire, including the cost of defence. Thus, giving a quantitative answer to the unsolved question of French colonial investment profitability during the interwar period is particularly appropriate. Indeed this was the last period of peace in the French colonial empire before France used its military strength to maintain its authority in Indochina from 1945 to 1954 and Algeria from 1954 to 1962.

In a thesis which French historians are very familiar with, Marseille claimed that, over the interwar period, colonial firms became a privileged outlet for French capital exports and colonial investments exhibited higher performance than domestic investments. Today, his book is still considered as a best seller in the French academic circle of historians, despite the scepticism of Fitzgerald questioning some of his conclusions. The latter considered that the French colonial empire was a financial burden that France could no longer afford in the 1960s.

In order to revisit this topic we used a wide-ranging and exhaustive sample of firms listed on the Paris Stock exchange taken from the ‘Old Paris Stock Exchange’ database. From this dataset of 1,000 firms we implemented the mean-variance methodology of Markowitz, to
take into account the risk-return trade-off in the selection of portfolios of investors, using the Sharpe Ratio to compare colonial and domestic performances.

Our results do not corroborate Marseille’s analysis. We showed that around 150 firms made up the colonial market listed on the official Parisian Stock Exchange roughly representing only slightly less than 10 per cent of this market, in terms of market value, dividends and seasoned issues. We found no evidence that the performances of colonial firms were higher or lower than those of domestic firms when we compared the means of returns or the excess returns adjusted to risk of various domestic and colonial portfolios. In contrast to the nineteenth century, colonial diversification during the interwar period is not evident because industrial firms’ returns were correlated, but some marginal industrial opportunities still remained available. The colonial firms in question were special mining firms producing nickel and zinc in New Caledonia (Le Nickel) and Algeria (Guergour) respectively.
IV/E  Real Wages

Chair: Joyce Burnette (Wabash)

Jean-Pascal Bassino (Montpellier III), Kyoji Fukao & Masanori Takashima (Hitotsubashi)
Grain wages of carpenters and skill premium in Kyoto c.1240-1600: a comparison with Florence, London, Constantinople-Istanbul and Cairo

How poor and unequal was Japan before the Tokugawa period (1603-1868)? Early European visitors who came to Japan in the sixteenth century had the impression that the country was one the poorest in Asia. But some of their descriptions suggest that literacy and numeracy were comparable to European levels (admittedly still low at that time), and that income inequality was not particularly high. The paper presents a first attempt to construct long term series of grain wages of skilled workers covering the period 1240-1600, then evaluate the magnitude of the skill premium, and finally cast these indicators of living standards and income inequality in international perspective by relying on available information, for instance estimates by Allen (2001) for London and Florence, and by Pamuk (2005) for Constantinople-Istanbul and Cairo.

Japan experienced a long period of peace under the rule of the Tokugawa shogunate, associated with regional integration, economic specialization. This did not lead however to prosperity, as indicated by the persistence of crop failure induced famines. The Euro-Asian comparison of living standards, based on the calculation of welfare ratio equivalent to those measured for European urban workers by Allen (2001) indicates that, between the 1720s and the 1890s, the real wages of Japanese unskilled workers were barely equivalent to the lowest European levels (Bassino and Ma, 2005) and roughly at the same level as in China (Allen et al. 2007). Considering that population increased steadily (and probably doubled) during the seventeenth century, it is worth investigating whether Japan fell into a Malthusian high level equilibrium trap in the late seventeenth or early eighteenth century.

Another unsettled issue is the magnitude and historical trend in skill premium in Japan. Low skill premia are regarded as indicative of comparatively high human capital accumulation, and comparatively low levels of income inequality among wage earners (Zanden 2009). Available wage data recorded by Saito (2005) suggest that, in the second half of the Tokugawa period, the skill premium was high in Japan by European standards, but data for early Meiji era (1868-1912) indicates that the skill premium was almost as low as in western Europe.

In order to construct grain wages of skilled workers, we use prices in copper coins of rice, wheat, barley, and millet recorded by major Buddhist temples, in the Kinki region (the area around Kyoto) and surrounding areas. We also use labour rewards paid in copper or in rice to carpenters by the same institutions. We focus on the reconstruction of grain wages received by carpenters, the workers for which information is the most abundant and dependable, and compare with similar data for skilled construction workers in Europe. In order to assess the magnitude of the skill premium in Japan, we use information on daily wages paid to transporters and others types of unskilled workers. At the present stage of our research, data available for the period between c.1600 and 1720 does not allow linking our estimates of pre-1600 estimates with existing series covering the second half of the Tokugawa period.

References
Allen, Robert; Bassino, Jean-Pascal; Ma, Debin; Moll-Murata, Christine and van Zanden, Jan Luiten (2007). Wages, Prices, and Living Standards in China, Japan, and Europe, 1738-


Juan Carlos Rojo Cagigal & Stefan Houpt (Carlos III Madrid)
Squeezing the lemon: labour conflict and real wages in the Basque Country, 1900-30

Was social conflict in industrial areas related to real wages cycles? The paper is concerned with the determination of real wages in northern Spain during the first third of the twentieth century. We concentrate on the Basque region, one of the emerging industrial areas from the last decades of the nineteenth century. From the 1870s the Basque coastal provinces underwent an intense process of industrial growth based on iron-ore mining and steel industry. This process matured during the 1900s-1920s through the diversification of the heavy industry towards the shipbuilding, mechanical engineering and other capital-intensive sectors.

Historiography holds that labour conflict increased real wages beyond the sustainable unit labour costs. Prices scaled up to 2-3 fold during most of the First World War due to the disruptions provoked by the European conflict, and money wages grew less than prices. However, a series of strikes and mounting pressure from the working-class movement rapidly changed this situation, producing a substantial recovery of real wages between 1918 and 1920. The impact of the postwar crisis again reversed the equilibrium of forces. Employers reacted with lockouts in 1922 which led them to a new victory. After a successful coup d’état by General Primo de Rivera, employers and workers initiated a new era of collective bargaining. The main employers’ associations and the main trade union were able to reach frequent agreements in a scheme that although it was promoted by the state was closer to a social corporatist model. Apparently, real wages grew moderately during this period. We seek to contrast this empirically. The flaws of the theoretical model suggest that in addition to economic factors, historical and ideological elements may also play an important role in the determination of wages.

The empirical analysis is concerned with testing the theoretical model, using monthly data from 1900 until 1930. We use a VAR analysis for explaining what determines real wages. The variables to be included in the model are productivity, unit labour costs, real wages and different measures of labour conflict. Other historical and ideological elements are included to measure their impact. A first step will be to build comprehensive industrial wage series which include not only cash wages but also other compensations. One of our main objectives is to build monthly wage series which would permit us to determine more precisely the impact of different elements. At the same time we will need to construct a consumer price index in order to deflate our nominal wage series. Given the difficulties that Spanish official sources present for the first third of the twentieth century, the construction of a representative and monthly consumer price index is one of the main challenges of this paper. This index will be essential to contrast what exactly drove real wages in the decades prior to the Spanish Civil War.
References
Rey, F (1992), Propietarios y patronos. La política de las organizaciones económicas en la España de la Restauración, 1914-1923, Ministerio de Trabajo y Seguridad Social, Madrid.
IV/F  Human Capital

Chair: tba

Jacob Weisdorf & Marc Klemp (Copenhagen)
The child quantity-quality trade-off: evidence from the population history of England

Did parents show preference for child quality in pre-industrial England? To find out, we look for evidence of Becker’s child quality-quantity trade-off using data from the Cambridge Group’s Population History of England from the Family Reconstitution (the 26 parishes). We regress individual ‘quality’ measures, such as literacy, longevity and social class, on number of siblings (‘quantity’), controlling for several background variables, including sex, birth year, birth order, as well as social class and literacy of parents. In addition to OLS analysis, we run a number of IV regressions, employing exogenous variation in births that stems from occurrence of twins, preference for mixed-sex siblings, and child mortality. While magnitude and significance of the estimates vary substantially, both OLS and IV regressions generally sustain the hypothesis that family-size (number of siblings) has a negative impact on the various quality measures employed. This suggests that parents did display preference for child quality in pre-industrial England, and it lends support to Unified Growth Theory, which holds that the child quantity-quality trade-off played a key role for the emergence of sustained economic growth.

JEL codes: I21, J13, N33, O10.

Timothy J Hatton (Australian National & Essex)
Infant mortality and the health of survivors: Britain, 1910-50

The turn of the twentieth century saw a heightened level of concern among middle class observers about the health and fitness of the working class. In his 1899 survey Rowntree (1901), found that a substantial proportion of the working class had insufficient income to maintain physical efficiency. Such concerns were highlighted by the poor physical condition of army volunteers during the Boer War. The Interdepartmental Committee on Physical Deterioration, set up to enquire into the causes of poor health, took the view that health and physique were strongly influenced by conditions during infancy and childhood.

These observations coincided with the beginning of a steep decline in infant mortality and an ongoing downward trend in the mortality rates of children. But to some observers this was not all good news. Eugenicists like Karl Pearson suggested that the fall in mortality in infancy and early childhood was leading to the survival of the unfit. Leading figures in the medical profession argued just the opposite: the conditions that reduced infant and child mortality also enhanced the health of the survivors. Pearson argued that the evidence from correlations between infant mortality health later in childhood, based on looking across localities, was flawed because of common influences acting on both. According to him ‘the only method by which data for different districts can be compared is by endeavouring to fix the nature of the environment.’ (1912, p.470).

In this paper I examine the heights of school children aged 6 to 13 in English and Scottish towns over a period of rapid decline in infant mortality between 1910 and 1950. Since the heights of children are closely associated with their health status, it is possible to investigate the association between infant mortality and the health of the survivors. The effect of infant mortality on height can be interpreted as the balance of two forces. The first is the ‘selection effect’ highlighted by Pearson and the eugenicists – lower infant mortality leading to less healthy and hence shorter survivors. The other is what Bozzoli et al. (2007) call the ‘scarring effect’, where infant mortality stands as a proxy measure for the general childhood
disease environment. Through the influence of the disease environment on growth during childhood, lower infant mortality should be associated with taller survivors.

Here I attempt to distinguish between these two effects by associating the selection effect with infant mortality in a cohort’s year of birth and the scarring effect with infant mortality prevailing in the cohort’s early years of childhood. The data for height is that collected by Bernard Harris from the reports of school inspectors for 20 towns in England and Scotland. Because there are repeated observations for each town (and for children at different ages) it is possible to estimate using fixed effects by town, which is essentially what Pearson recommended in order to ‘fix the nature of the environment’.

The result of regression analysis for 6-9 year-olds and for 10-13 year-olds is that infant mortality in the year of birth has no significant effect on subsequent average height. But infant mortality at the time the cohort was aged between two and four gives a significant negative coefficient. Thus, there is no evidence for the selection effect but some evidence in favour of the scarring effect. Over the 40 years from 1901-5 to 1941-5 infant mortality in England and Wales fell by 88 per thousand or by 22 per thousand per decade. The estimated scarring effect implies that this could have increased the heights of 6-9 year olds by about 0.6 cm per decade, accounting for about a quarter of the total increase in height. The overall conclusion is that improvement in the disease environment made a substantial contribution to the improvement in child health and height in the first half of the twentieth century.

References
V/A  Globalization

Chair: tba

Martin Uebele (Münster)
*World and national wheat market integration in the nineteenth century: a comovement analysis*

This paper proposes to borrow from the literature on international business cycles and use its tools for market integration research. These models allow us to decompose the variance of a set of time series into a common and an idiosyncratic component. Additionally, the common component may be decomposed further to identify comovement that is restricted for example along regional borders when applied to commodity prices. Applying comovement analysis to nineteenth century European and American wheat prices shows that the US experience after 1870 was maybe not that revolutionary to world wheat trade than the established convergence literature à la O’Rourke and Williamson (1999) suggests. It seems to be fair instead to speak of a major producer accessing the world’s biggest market for wheat – Western Europe, including the UK. The results also call for reconsidering on how national and international markets evolved alongside as the timing turns out to be diverse across European nations in the 1800s.

There has been a recent revival of an older discussion about the reason for decreasing price gaps in the Atlantic trade between Knick Harley (1988) and Douglass North (1958, 1968): North claimed that organizational improvements played a more important role in spurring change in international market integration in the first half the 1800s. According to recent studies wars and trade policy are suggested as important driving forces of market integration (Federico & Persson, 2006; Jacks, 2005; Persson, 1999). According to my results the biggest push to global wheat market integration happened before 1860, before the railroad could have had substantial effects. In the last quarter of the nineteenth century world wheat market integration further accelerated, but at a slower pace than before 1860.

The introduction of comovement into the market integration literature has the advantage of forming a benchmark against which each market price can be assessed. Thus, it is not dependent on a battery of bilateral comparisons. Large amounts of price data can be processed and transformed into an intuitive measure of integration. The possibility for looking at each market individually is maybe the strongest argument for this method. Zooming into local circumstances while keeping an eye on the aggregate picture can be accomplished easily. Therefore, this method appears to be a useful means to throw light on questions of market integration in other regions and periods.

Markus Lampe (Carlos III Madrid), Ingrid Hernriksen & Paul Sharp (Copenhagen)
*The strange birth of liberal Denmark: Danish trade protection and the growth of the dairy industry in the mid-nineteenth century*

Denmark stands as a curious outlier in the history of late nineteenth century globalization. After a brief flirtation with free trade inspired by the British repeal of the Corn Laws in the 1840s, many European countries returned to agricultural protection from the 1870s as a response to the inflow of cheap grain from the United States and other new producers. The United Kingdom chose to remain a free-trader, and saw the dramatic decline of her agricultural sector. In this story, Denmark also chose to remain open, but with rather different results. Agriculture, rather than going into decline, in fact flourished due to an early and successful diversification towards dairy production: Danish farmers succeeded where British farmers failed by diversifying into high-quality meat and dairy produce – especially butter and pork – and, from being a net exporter of grains, Denmark now became a net importer, and used this cheap supply to feed the animals her agriculture was to become so heavily dependent on.
We dispute this simple story behind Danish diversification which sees Denmark as something of a liberal paragon. Its success owed much to long-standing trade policy in favour of dairy production, which continued even after a more general movement to free trade in the 1860s. The tariff on cheese, which contrary to almost all other agricultural duties was not abolished in 1863/64, effectively granted prohibitive protection for low-quality cheese, an important by-product of the production of high-quality butter, and therefore reserved the domestic market for Danish dairy farmers. Using micro-level data on the production of butter, cheese and pork in individual dairies from 1850 to 1898, we quantify the implied subsidy to dairy production from the cheese tariff (and the tariffs on butter and pork before 1864), and demonstrate that this in many cases ensured the profitability of individual dairies. We argue that due to technical and organizational innovations after about 1880 the relative importance of the cheese tariff declined, because the introduction of automatic cream separators and cooperative creameries made cheese production less attractive because of lower fat content of the skim-milk left over from butter production, which was instead fed to pigs.

As a result of our study, Denmark appears not so much as a liberal bastion in the last decades of the nineteenth century (although she was this compared to other European countries), and more as a shrewd utilizer of seemingly innocuous trade policy instruments, providing indirect subsidies to her booming dairy industry in a way that only the most knowledgeable outside observer would have been able to recognize.
V/B Nineteenth-Century England

Chair: tba

Peter Maw (Manchester Metropolitan)
Canals, rivers and the industrial city: Manchester’s industrial waterfront, 1750-1850

The proposed paper will present new data on mill location in Manchester in 1850 to show that water-transport infrastructure played a key role in determining the intra-urban pattern of factory development. Studies of industrial development in the eighteenth and nineteenth centuries have provided detailed evaluations of why manufacturing and marketing became concentrated in particular British regions. There are, however, few spatial analyses of factory location within major manufacturing towns. The paper highlights that shift from water to steam power from c.1790 introduced new patterns of industrial water use rather than the relocation of factories away from waterways.

Before the mid-eighteenth century, Manchester’s waterfront was restricted to the three rivers that formed its administrative boundaries. The limited water power in the Manchester embayment meant that Manchester was not initially a major mill location. Aspin has shown that Manchester, Salford, and their immediately adjacent townships, contained only 8 of the 101 water-powered spinning factories in Lancashire built before 1794. After 1760, 5 new public canals and 23 private canal branches activated a major expansion of Manchester’s waterfront. By the mid-nineteenth century, these artificial waterways provided the majority of the manufacturing sites that enabled the town to become the world’s foremost factory centre. Crompton’s mule census of 1811 reveals the rapidity of urban factory formation; by this date, Manchester operated 31 per cent of mule spindles identified in cotton factories in Lancashire and adjacent counties. The factory returns, available from the early 1830s, confirm Manchester’s pre-eminence of the cotton-factory sector, a position that it retained until the late 1850s.

The new data presented in the paper are obtained from two large-scale plans of Manchester, published in 1851. The dataset pinpoints the location of the major industrial units identified by the two surveys and their spatial relations to Manchester’s waterways and other forms of transport infrastructure. This evidence is linked with conventional urban history sources, including trade directories and rate books, to produce a new dataset of Manchester’s factory sector in 1850. The dataset shows that all sectors of centralized industry in Manchester, above all, textiles, textile finishing, and engineering, clustered in waterfront areas. For example, 85 per cent of the rateable value of cotton factories was generated by mills situated within 20 yards of a waterway.

This paper also provides the first detailed overview of the determinants of factory location in nineteenth-century Manchester, framing the analysis in terms of the four posited advantages of water-side locations found in the contemporary and secondary literature: (1) to supply water for industrial purposes; (2) to provide access to coal and other raw materials; (3) to transport manufactured articles; and (4) to carry away waste products. The study concludes


577 Bolton Archives and Local Studies Unit, Samuel Crompton Papers, ZCR/16.

that the provision of water for steam engines was the principal cause of the waterfront pattern of factory development in Manchester. The locational geography of Manchester factories will be compared to that of other cotton towns in northern England.

**Peter Kitson & Jelle van Lottum (Cambridge)**

*Migration, economic development and human capital in early Victorian England*

This paper will explore the relationships between migration, human capital and economic sector in England and Wales in 1851. Drawing upon a range of published and unpublished census data, as well as other statistical data drawn from contemporary sources, it will employ spatial and econometric analytical techniques to identify regions and economic sectors that were net receivers and donors of labour, as well as the extent to which patterns varied by the degree of human capital apparent within each sector.

It will use evidence from sign literacy taken from the Registrar-General’s returns, as well as evidence on age heaping from the 1851 Census two per cent sample, to derive an index of relative human capital formation. It will also use data on occupational structure and recent demographic growth trajectories from the 1851 Census, as well as the evidence on individual-level migration patterns from the two per cent sample, to assess the relationships between occupation, size of migration field, location and human capital during the early Victorian economy.

The paper will suggest that there were significant variations between different regions and different economic sectors. The most rapidly growing sectors tended to exhibit more geographically constrained migration fields, and attracted employees with relatively low levels of human capital. The most stable sectors, on the other hand, tended to possess larger migration fields, and attracted workers with higher levels of human capital; the most notable exception being agriculture, where the geographical scope of migration was far more constrained. These findings will shed important new light upon the functioning of labour markets at the regional and national level, as well as providing new evidence on the extent of labour market integration in mid-nineteenth century England and Wales.
V/C Southern Europe

Chair: tba

Jorge Ortuno Molina (Zaragoza)

Limits to market convergence: the role of the Spanish monarchy in the fifteenth-sixteenth centuries

Some historians consider that the early-modern authoritarian monarchies played a pivotal role in the creation of the European market economy. The path that the Castilian monarchy took after its unification with other peninsular realms at the end of the fifteenth century partly corroborates this argument. Even though trade between these peninsular realms had always existed, it increased dramatically in the sixteenth century under the direction of the Catholic Monarchs and first Habsburg. However, commercial practices that prompted economic growth occasionally worked along that century. Yet, the evidence from commercial customs, which provides us with an excellent avenue to study the role of authoritarian states in the emergence of market economies, reveals that farming specialization and economic growth implied a worsening in the income and land distribution. Furthermore the monarchy’s financial needs, tax collection policies, the power and influence of local authorities, and the commonwealth nature of the monarchy weakened the viability of a free market economy. Therefore, rent increases, poor distribution of land, drops in real wages, and abusive landlords forced the monarchy to fix cereal prices and guarantee cereal supply, which might suggest the limits of free markets economy in early modern Europe.

This paper presents a nuanced interpretation of the limitations of the market-driven economy through an analysis of the cereal trade in the Murcia-Valencia border during the early modern period. The Catholic Monarchs policies promoted specialized farming to exploit the demand for cereals, especially from Valencia, at the expense of other products they bought in fairs and local markets. At the same time, royal grants to towns and fixed prices handicapped the free flow of goods both between the realms and between cities within the realms. These limitations to a free-market economy, however, should not be dismissed as ineffectual or inferior to a purer or more traditional version of the free market. On the contrary, they likely served to soften the imbalances and inequalities of early-modern markets, while also preserving the realm’s social stability.

Martin Ivanov (Bulgarian Academy of Sciences) & Matthias Morys (York)

Are interlocking directorates good for your growth?

New Institutional Economics brought a growing consensus on the crucial importance of institutions and transaction costs as a prerequisite for economic growth. As early as the 1960s Gerschenkron forcefully insisted that financial institutions (mixed banking and interlocking directorates) were among the key instruments that facilitated ‘the most impressive catch-up in the nineteenth century’ (that of Germany). More recently, Fukuyama found that trust, propensity for spontaneous sociability, and intermediary institutions between the state and households (business associations and interlocks among others) can explain why some countries were unable to embark on a sustainable growth path.

Drawing on the work of Hilferding and Lenin, post-Second World War sociology developed the concept of interlocking directorates (businessmen sitting on several boards). Borrowing from Baran & Sweezy, Pffeffer, Scot & Griff, Mizruchi and others in the 1970s and 1980s, economic historians rushed into quantitative studies of interlocking directorates in various ‘core’ countries of Western Europe and North America. Since the 1990s, research interest has shifted in other directions and interlocking has only rarely been perceived as an important social institution that could generate or hinder economic growth. Interlocking, however, could serve as an indicator of trust and aptitude for the creation of intermediate structures of sociability.
Taking an unconventional perspective (that from the ‘periphery’) this paper will try to shed some light on the effects of interlocking institutions on economic modernization. Using the methodology already applied in the literature (Ottosson, 1992, Dritas et al., 1996) it assembled and analysed a large dataset of 4,854 people (2,937 individual directors) sitting on the boards of the largest Bulgarian businesses. The sample consists of the top 125 companies (100 non-financial and 25 financial) measured by their assets. Data is collected for four different points in time – 1912, 1929, 1939 and 1945 – which enable us to study the development of interlocking practices both in the pre- and post-First World War worlds.

Table 1: Business Network Density (in per cent)

<table>
<thead>
<tr>
<th></th>
<th>1900</th>
<th>1920</th>
<th>1930</th>
<th>1940</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>5.21 (1911)</td>
<td>7.45 (1929)</td>
<td>7.48 (1939)</td>
<td>5.94 (1945)</td>
</tr>
<tr>
<td>Sweden</td>
<td>2.70 (1903)</td>
<td>5.60 (1924)</td>
<td>5.00 (1939)</td>
<td>n/a</td>
</tr>
<tr>
<td>Great Britain</td>
<td>1.30 (1904)</td>
<td>n/a</td>
<td>1.90 (1938)</td>
<td>n/a</td>
</tr>
<tr>
<td>United States</td>
<td>7.20 (1912)</td>
<td>7.60 (1919)</td>
<td>5.60 (1935)</td>
<td>n/a</td>
</tr>
</tbody>
</table>


The results, as reported in the table, were quite unexpected. Bulgarian businessmen were certainly not less inclined to networking and cooperation than their US, UK or Swedish colleagues. Even more surprisingly, the regression analysis with all probable explanations suggested in the literature proved negative (financial interlocking, regional/geomorphologic interlocking, profitability etc).

How can we explain these high levels of interlocking? Compelled to operate in a low-trust society, ravaged by corruption and inefficient administration, through interlocks Bulgarian entrepreneurs sought ‘domestication’ of business environment rather than improvement in efficiency and profitability. By entering into strategic coalitions with other companies large corporations attempted to secure their survival and longevity. This, as we will see, stifled competition and hindered economic growth.

These findings corroborate neatly a case-study of Bulgarska Turgovska Banka (est. in 1895), one of the most prominent universal banking institution in the country. In the financial services sector the hostile, low-trust business environment was further aggravated by the fundamental discrepancy between short-term (even timeless) liabilities and the long-term structure of assets. Most of the savings in a non-market agrarian economy, based on smallholding, were non-monetary in nature (food surpluses) and rarely entered the banking system. When banks were distant (in towns) or untrustworthy, cash savings were either hoarded under the mattress or come as slight deposits at best. On the other side of the equation was the bank credit portfolio, which was flooded with long-term claims (on current account or quasi-short term discount bills that were often renewed at maturity). To make the business of banking even more hazardous there was no safety net. Prior to the First World War the Central bank had no legal responsibility to provide additional liquidity as a lender of last resort.

At first Bulgarska Turgovska Banka (BTB) tried to balance this fundamental discrepancy by maintaining very high capital adequacy of 30 plus per cent when 18 per cent was the norm advocated by George Rae (1885). Capital to credit ratio was over 50 per cent and at times reached 80 per cent. Just like early American banks (Lamoreaux, 1994; Wang, 2008), trying to minimize information asymmetries Bulgarska Turgovska invested most of its funds in large internal credits. This was a lucrative business when the economy was growing in the early 1890s. Several bad harvests at the turn of the century, however, put an abrupt end to this model. Two of BTB key shareholders and debtors bankrupted in 1899 and 1902, which
almost sank the bank itself. *Bulgarska Turgovska* managed to survive only due to its high capital ratio and the small amount deposits attracted in the previous boom years.

It took almost a decade to clean up the bank balance sheet from the burden of ‘poisonous credits’. Meanwhile large German, Austrian and French banks entered the market in 1906 dramatically changing the Bulgarian banking landscape. If it was to preserve its leading positions in the financial sector BTB had to abandon the previous strategy of over-capitalization and opt for a more outward model. Inherent risks of credit expansion were addressed by new, more rigid, procedures of approving credit applications and by membership in a series of social and economic networks.

From 1905 *Bulgarska Turgovska* initiated or interlocked through several networks which soon proved to be very successful. Among the geographic expansion of branches, the ‘kinecon’ (interrmarriages), and the political (the conservative Popular party) networks interlocking with industry had an important impact on future bank development. It is these investments in social capital that enabled *Bulgarska Turgovska Banka* to overcome the 1899-1902 difficulties, effectively to compete with foreign banks, and to become the largest Bulgarian company in 1912 with over 50 m. francs in assets. The dense complex of social and economic networks provided BTB with a high-trust, low-risk hinterland, which was far more diversified than the once practised insider lending to board members. Furthermore, this coalition of industrial and financial companies had the potential for tackling many of the fundamental deficits of the Bulgarian financial sector. Through tighter monitoring and routine contacts *Bulgarska Turgovska* could collateralize credits to interlocked enterprises and secure better information. In addition, special relations with key clients could increase the maturity of their deposits held with BTB, thus reducing the overall temporal discrepancy between assets and liabilities. Last but not least, surrounded by large, lucrative companies, when in trouble, *Bulgarska Turgovska* would be in a position to draw liquidity from family member corporations substituting the missing lender of last resort.

If in Germany *Kreditbanken* were able to hasten industrialization effort (still much debated in the literature, cf. Fohlin, 2007), as it seems, in the ‘periphery’ universal banking institutions were completely different both in profile and their tasks. In Central Europe mixed banking (probably) served as an instrument for breaking road-blocks to industrialization and for channelling capital into manufacturing. In south and south-eastern fringes of the continent, however, it was more a compensatory mechanism for severe deficits in the business environment (low-trust) and fundamental problems of financial sector (fundamental discrepancy between assets and liabilities).

*Figure 1: GDP per capita, 1990 international dollars*

![Graph: GDP per capita, 1990 international dollars]

Source: Own calculations
No wonder, from a purely development perspective, in the Eastern European ‘periphery’ universal banks had low (if any) impact on economic growth. Their task here was not to destroy but to compensate for social and economic rigidities, thus perpetuating the existing ineffective institutions.
V/D Institutions and Exchange

Chair: tba

Judith Spicksley (Hull)

Death, debt and labour: slavery as a form of exchange

Historians of slavery have often pointed to the difficulties that have arisen in the wake of the abolition movement as a result of the construction of a model of enslavement driven primarily by the experience of the transatlantic slave trade. Other systems of enslavement, unable to measure up to the levels of brutality, alienation and inhumanity that characterize this variant, are not only considered ‘milder’ in comparison, but appear to defer so far from it that their right to be counted within the slavery canon can be called into question. Despite a wealth of empirical research, and the fact that slavery has existed across practically all known geographical and temporal boundaries, the challenge to identify ‘any specific set of shared social values’ from which the institution arises remains. 579 There has been a great deal of research on the forms that slavery takes – domestic, state or gang for instance – and of the conditions in which slaves lived and worked, which varied immensely between cultures and across time. But much has been done in the shadow of the transatlantic trade and through the lens of freedom: problems in identifying the essential ingredients of slavery result at least in part from a system of knowledge that takes as its point of departure the desire to eliminate an institution that was viewed as unlawful and contrary to nature, as the notion and value of freedom as a universal human attribute has approached its modern apogee.

This paper presents the findings of a three year project that had as its original premise the desire to understand more about the links between debt and enslavement. After examining discussions of slavery as they existed in a range of geographical areas at numerous points in time prior to the nineteenth century, it is able to offer an alternative approach to the understanding of slavery: as an institution that emerged as a function of a lifetime debt within the context of reciprocity and exchange, and in response to a demand for labour. The debt in question was one of ultimate significance: individuals at the point of death were granted life in return for providing a lifetime of unencumbered labour services as defined by their master. Such provision was not only accepted but expected in the pre-modern world, and it was only with changes in the understanding of what constituted fair and just exchange that such provision gradually came under attack.

Guillaume Daudin (Lille 1)

The rise of Europe and Atlantic trade: did national institutions do it?

Recent empirical work has shown that intercontinental trade was positively correlated with economic growth before the Industrial Revolution. The economic rise of the Netherlands and the United Kingdom was simultaneous to the increase of their Atlantic trade. 580 This paper empirically explores the channels that can explain this relation, and specifically discusses the idea that Atlantic trade had a role on growth in Early Modern Europe only through constitutional, nation-level institutional change à la Acemoglu, Johnson and Robinson.

It is clear that the development of Atlantic trade was large enough to improve the economic and political position of specific groups, especially traders. This was partly because they benefited, in some countries, from the support of the state. According to Acemoglu, Johnson and Robinson, the improved economic and political position of traders was crucial for European development because – when starting institutions were good enough – traders were a progressive political force able to coerce national governments into setting up institutions restricting the power of monarchy and securing broad-based property rights.

---

579 Ehud R. Toledano, As If Silent and Absent: Bonds of Enslavement in the Islamic Middle East (Yale, 2007), 1.
However, it is not clear why these would be the objectives of traders.\textsuperscript{581} They mainly clamoured for public protection and support to their own economic activities.\textsuperscript{582}

This hypothesis implies that Atlantic trade had an effect at the national level. Countries might not be the proper unit of analysis to think about growth, especially before the nineteenth century. To test the existence of local effects, the paper introduces an urban potential variable akin to the one introduced by Bosker, Buringh and Luiten van Zanden in their recent study of comparing urbanization in Europe and Islam.\textsuperscript{583} This is the sum of the population of all other cities divided by their distance to the city of interest. It also introduces an Atlantic port potential variable, which is similar to the urban potential variable but uses only the size (or the trade) of Atlantic ports. An econometric exercise using the population of a balanced panel of cities from 1300 to 1850 from Bairoch shows that, while national Atlantic trade conditional on starting institutions (the ‘Acemoglu, Johnson and Robinson’s variable’) is robustly positively linked with the size and growth of cities, it is also the case of local variables.\textsuperscript{584}

The Bairoch’s database includes 2,203 cities, whereas the preceding analysis uses only the population of 193 cities. This loss of information is a problem, as it might be the case that Atlantic trade had an effect on the apparition and growth of cities that did not exist in 1300. To test that, the paper uses as units of observation 113 arbitrary 75km squares that include at least one city in every period from 1300 to 1850.

\textsuperscript{581} This difficulty is actually presented in Acemoglu, Johnson, and Robinson (2002), p.27.
\textsuperscript{582} Hirsch (1991), Lindberg (2009).
\textsuperscript{583} Bosker, Buringh, and Luiten van Zanden (2008).
\textsuperscript{584} Bairoch, Batou, and Chèvre (1988).
This new balanced panel allows us to extend the analysis to the experience of 684 cities. Again the existence of a correlation between national Atlantic trade, conditional on starting institutions, and city growth is confirmed. Local Atlantic trade variables are also correlated with city growth, unconditional on starting institutions. This makes it unlikely that national institutions were the only link between Atlantic trade and the rise of Europe.


V/E Credit and Debt

Chair: tba

Anne L Murphy (Hertfordshire)

*The grand palladium of public credit: the Bank of England in the later eighteenth century*

In 1783 the Bank of England appointed a Committee of Inspection to examine the working practices of its departments and identify any failings in procedures. The Committee interviewed almost all the Bank’s servants from the lowliest clerk to the chief cashier and chief accountant. Employees were asked about their duties, working hours, pay and conditions and they were quizzed about their relationships with their colleagues. The Minutes record many answers in full thus the document offers a comprehensive record of the various aspects of the Bank’s business. It details the management of the national debt, records procedures for the discounting of bills of exchange, printing and issuance of notes, and the management of the cash and customer accounts. The report also details the Bank’s security measures, staffing and management problems and outlines the measures recommended by the Committee to improve efficiency and security. The conclusion of the report presents the inspectors’ view of the Bank’s position in the British economy and admits a ‘religious Veneration for the glorious fabrick [of the Bank and a] steady and unremitting attention to its sacred Preservation’.

This paper will explain the reasons why there was a need for such a detailed report on the Bank’s working practices at this time and, in particular, will seek to link the Bank’s audit with other contemporary enquiries into the management of Britain’s finances and related institutions. These included the appointment of a board of Commissioners for examining the Public Accounts in 1780 and the appointment of a Board of Control at the East India Company in 1784. In this way the paper will seek to show how the political debate about the potentially disastrous consequences of the mismanagement of the public finances shaped the Bank’s understanding of its business and its role as a financial and political institution. It will also consider whether this report should be seen as an attempt by the Bank to ‘put its house in order’ so as to preclude any attempts to impose political control over its business.

Maria Eugénia Mata (New University Lisbon)

*Portuguese public debt and financial business*

Government, public finance, and public debt framed the historical background for exceptional financial business opportunities for Henry Burnay as a private banker and a network with Baring Brothers, Comptoir National d’Escompte, Banque de Paris et des Pays Bas, Neuflize et Cie., Crédit Lyonnais, Société Générale, Deutsche Bank, Bank fur Handel & Industrie, Dresdner Bank, M. Jacob H. S. Stern and the Deutsche Effecten & Wechsel Bank from Frankfurt. Nineteenth-century financial markets and public debt emerge as the main players in the game.

Credibility and honesty are important values for earning confidence and trust in international financial business, while bilateral-monopoly market situations required a lot of bargaining for joint profit maximization.

This paper claims that the historical experience made of difficult times for a small country leaving the gold-standard before the First World War put in motion old schemes for supporting the Exchequer. The traditional framework of a private banker for lending to a prince that was so frequent in the previous centuries seems to apply, as well as mutual compensation schemes. Financial markets, government, and public finance, are main actors in this paper because they set the historical background for an exceptional banker’s performance in dealing with the Portuguese foreign public debt and European financial organizations. This paper presents some of the most conspicuous elements of Henry Burnay’s business connections to illustrate the role of the nineteenth-century gold-standard combined with permanent deficits of public accounts, focusing particularly on lending to government for
public works and public debt service against compensations that included the tobacco
manipulation monopoly concession. Business networks with European financial organizations
supported the Portuguese participation in nineteenth-century globalization and Henry
Burnay’s business was an exceptionally successful activity in this historical context.

For an underdeveloped country such as Portugal, Burnay’s performance can illustrate
how an intelligent businessman could exploit excellent opportunities from the national
economic and social environment and particularly from Portuguese institutions existing at the
time in the country. Poor institutions, backward technology and low educational levels may
explain the failure of the public investment in transportation facilities to foster the desired
economic growth and the necessary tax collection to support current public expenditure and
the service of the public debt. The Portuguese partial bankruptcy consisted of a suspension of
amortization and a 1/3 forced decrease of interest, for foreign debt, and the creation of a 30
per cent tax on the loans’ revenue of the domestic debt. It was declared by a government
decree on the 13th of June 1892 in the wake of the Baring crisis. This bank was a traditional
lender to the Portuguese government. Short-run loans that were usually received as floating
debt were no longer feasible because of the South American crisis. Deciphering the
environment, Henry Burnay participated in all these events and modelled his activities and
fortune on the financial needs of the governments and the Exchequer.
V/F Stature

Chair: tba

Stephen L Morgan (Nottingham)

Adjustment of age-related height decline for Chinese: a ‘natural experiment’ longitudinal survey using archival data

Height data are a concise summary measure of human welfare for historical populations in absence of conventional economical data. Most studies use the final attained height of adults aged between about 20 and 40-49 years on the premise that younger subjects were still growing and older subjects had begun to shrink. Data outside this range are discarded. For many studies the data lost is small and of little consequence for the study. However, where the sample includes many people older than 50 years the exclusion of these may make analysis impractical because of the resulting small sample size. Several economic history studies have used a variety of approaches to estimate the original attained height of the elderly subjects before next estimating the secular trend in heights using the adjusted heights. These adjustments are based on studies of the aging of European populations, which may not fit the pattern observed in other human populations. This paper uses data for nineteenth-century born Chinese immigrants to Australia whose heights were recorded repeatedly over many years to simulate a longitudinal age-related height shrinkage study. The estimates of shrinkage are compared with estimates from other studies and applied to other height data for Chinese to examine the reliability of adjusted height estimates in calculating secular trends in height, and in turn making inferences about their welfare.

JEL codes: I31, N30, N35, O15, C89.
Economic History Society Annual Conference

1 – 3 April 2011
Robinson College, Cambridge

Call for Academic Papers

The 2011 annual conference of the Economic History Society will be hosted by Robinson College, University of Cambridge from 1 – 3 April.

The conference programme committee welcomes proposals in all aspects of economic and social history covering a wide range of periods and countries, and particularly welcomes papers of an interdisciplinary nature. Preference may be given to scholars who did not present a paper 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 (3 speakers, 1.5 hours duration). The latter should include proposals and synopses for each paper in the session, although 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 a short abstract (400-500 words), a brief c.v. and your contact details (including name, postal and e-mail address).

Any queries should please be directed to:

Maureen Galbraith
Department of Economic & Social History
University of Glasgow
Lilybank House, Bute Gardens
Glasgow G12 8RT
Scotland, UK
E-mail: ehsocsec@arts.gla.ac.uk

For full consideration, proposals must be received by 13 September 2010. Notices of acceptance will be sent to individual paper givers by 16 November 2010.

Should your paper be accepted, you will be asked to provide the following:

- An abstract of the paper for inclusion in the conference booklet (by 13 December 2010).
- A brief non-technical summary of your paper for the ‘Media Briefings’ section of the Society’s website (by 1 February 2011).
- An electronic copy of your full paper or a web address where the paper is available for consultation (by 1 March 2011).

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 (ehsocsec@arts.gla.ac.uk). It is important that a completed application form is submitted by the September deadline. Only in exceptional circumstances will later applications for support be considered.
Economic History Society Annual Conference

1 – 3 April 2011
Robinson College, Cambridge

Call for New Researcher Papers

The 2011 annual conference of the Economic History Society will be hosted by Robinson College, University of Cambridge from 1 – 3 April.

The annual conference opens with papers presented by new researchers. They offer those completing doctorates the opportunity to present their work before professional colleagues and to benefit from informed comment.

The session will be held on the afternoon of Friday 1 April 2011. Those wishing to be considered for inclusion in the programme must submit a synopsis by 6 September 2010. This should provide a firm title, a succinct summary of the principal themes and methodology of the paper, and an outline of probable conclusions. Proposals should please be submitted online via the Economic History Society website (www.ehs.org.uk).

The synopsis should be of not more than 500 words. It must be accompanied by a clear statement of the progress of research and intended date for submission of 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 13 December 2010 for circulation in the conference booklet. Each new researcher will have the opportunity to speak for 20 minutes, followed by 10 minutes of discussion. Two prizes of £250 will be awarded for the best papers presented at the Conference by new researchers. The procedure for judging papers will be circulated to all participants.

The Economic History Society is able to offer limited financial support to enable new researchers to attend the conference when this is not available from their institution.

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