Work attendance, gender and marital status:

Absenteeism among Swedish tobacco workers, 1919-1959

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Abstract
This paper presents evidence on rates of absenteeism for men and women employed in the Swedish tobacco industry from 1919 to 1959. The tobacco workers were employed by a public-private monopoly that undertook considerable rationalizations of production while at the same time having to live up to social constraints. The managers of the Tobacco Monopoly became increasingly interested in monitoring work attendance and sick leave. Throughout the period of investigation, and in contrast to the situation two decades earlier, women had about two times higher rates of absenteeism and sick days than men. The number of hours lost due to sickness and other causes showed an upward trend, with a particular peak for women during World War II, probably as a consequence of increased work intensity. The findings are in line with previous studies from other countries but are in some contrast with aggregate Swedish data for factory workers, according to which the female-male gap in sick leave was small or non-existent before the 1940s.

Key words: tobacco industry, twentieth century, Sweden, labour markets, absenteeism, gender
Introduction

Time discipline was an important feature of the industrial revolution (Clark 1994; Landes 1983; Rifkin 1987; Thompson 1967). With the introduction of more capital-intensive technologies, new types of employment contracts emerged, which not only rewarded output but also behavior in the working place. Regular work attendance became a virtue. Previously, workers had been allowed to decide the timing and intensity of work. This was not only characterizing for the putting-out system, but also for many early workshops. Coordination of factors of production became even more urgent towards the end of the nineteenth century (Chandler 1977). Electricity and combustion engines replaced steam as the main sources of power and made it possible, and highly profitable, to achieve a higher and more even pace of production. Workers who quit without notice, did not show up when the factory bells rang or deviated from the job gave rise to costly interruptions of the production process. It was in this context that the punch card-clock was invented, which gave employers better opportunities to keep track of the attendance of their workforces.¹

During World War I and the following years, characterized by tight labour markets, absenteeism was defined as a serious problem (Douglas 1919; Frankel 1921; Jacoby 2004: 100; Murray 2007: 203-204). During World War II, the interest for absenteeism reappeared and this time gender differences became a big issue (Gafafer 1940; Patton & Johns 2007; Weatherford 2009). Academic studies and anecdotal evidence showed that women were more often absent from work than men. That women more often fail to show up at work became an established truth and was used by employer organizations to defend the practice of having different wage scales for men and women. Gender differences in absenteeism were also recognized as a problem in some early feminist works published in the post-war period, most notably Women’s two roles by Alva Myrdal and Viola Klein (1956). Surprisingly, the gender gap in absenteeism has not been a central theme in the growing literature on gender and work that has appeared from the 1970s onwards (Mastekaasa & Modesta Olsen 1998). The same applies to the economic history literature (c.f. Goldin 1990). Women’s responsibility for childbearing and resulting career interruptions, male chauvinist trade unions and bureaucratic employment relationships are often mentioned aspects in accounts of women’s work in the

¹ The punch-card clock or time clock was invented in 1888. However, there are earlier examples of attendance records, see for example Williams (1997).
twentieth century. Whether women were equally able and inclined to regularly show up at work as men, how such differences changed over time and why, are not discussed. Although male-female gaps in absenteeism have been established in numerous studies from the 1940s onwards, it is not obvious that the pattern has been time-invariant.²

A more precise picture of the development of gender differences in absenteeism over time may have fundamental implications for our understanding of women’s opportunities in the labour market, such as the existence of occupational crowding, wage discrimination and marriage bars. If women had higher inclination of being absent from work, employers would have had incentives to undertake various kinds of statistical discrimination and exclude women from rewarding jobs. The results may also have more general implications for the understanding of technological change and labour productivity at the industry or firm level.

In this paper I investigate the patterns of absenteeism in the Swedish tobacco industry in the period 1919-1959. The tobacco industry employed both men and women and was run by a public-private joint venture, the Swedish Tobacco Monopoly. The company initiated profound technological changes that made great numbers of workers redundant, reduced the reliance on manual skills and increased the importance of work attendance. The managers of the Tobacco Monopoly annually reported information on overall rates of absenteeism and sick leave to its owners and other stakeholders. Since it had exclusive production rights and enjoyed some tariff protection, the Tobacco Monopoly operated under fairly soft budget constraints. At the same time, state ownership and the position as the sole employer in the industry implied that the Tobacco Monopoly faced stricter social constraints than most companies. Unlike companies operating in more competitive environments, the Tobacco Monopoly could not easily discharge individuals on the grounds of poor health. These circumstances make the rates of absenteeism and sick leave found in the annual reports of the Tobacco Monopoly particularly worthwhile to consider. By compiling the data in the reports we may get a better idea of how big the gap in absenteeism between men and women actually was and how it evolved over time, in the light of substantial macroeconomic and technological changes. At this stage, the paper is mainly exploratory and the main aim is to identify issues worth further explanation.

² Pre-modern work cultures, including huge alcohol consumption and the habit of frequently taking days off, lingered on in some trades throughout the nineteenth century, and possibly beyond (Cooper 1987; Gutman 1973; Kirby 2012).
Absenteeism in the first half of the twentieth century

As mentioned above, the first systematic investigations into the significance and patterns of absenteeism were made during World War I. Early studies supplied evidence on levels of absenteeism measured in ‘lost time’; either as the number of days or hour lost. When summarizing the results in 1919, Douglas established that most of the lost time was caused by sickness and ill health. He did not put great emphasis on gender differences but noted that:

“[…] women have an almost uniformly higher rate of absenteeism than men. This is caused not only by their greater susceptibility to illness but also by the pressure of home ties which often compel them to be absent from or tardy at their work. This is, of course, especially true of married women.” (Douglas 1919: 601)

While early studies on absenteeism typically were based on firm-level data, questionnaires and interview studies appeared in the 1940s. In an investigation of the work records of 17,800 American manufacturing workers (16,508 men and 1,309 women), Kossoris (1948) found that the average rate of absenteeism among women was twice as high as that among men; 6.5 days compared to 3.2. Furthermore, Kossoris reported that the relationship between age and failing to show up at work looked different for women and men. For women, age did not matter much, for men the number of days lost decreased to the age of 35 and thereafter remained at a stable level. The shares of days lost due to illness were about the same for both sexes.

The renewed interest in the absenteeism in the 1940s was not confined to countries that were directly involved in the war. The Swedish Board of Health and Welfare (Socialstyrelsen) began to systematically investigate absenteeism in 1947. Investigations were also undertaken by a committee appointed by trade unions and employer organizations on the issue of women’s’ wages (Kvinnolöneutredningen) in 1948-49, showing that women had about 100 percent higher rates of absenteeism than men and that married women had about 50 percent higher rates than unmarried women.

While there is not much data on the development of overall rates of absenteeism over time for the first part of the twentieth century, there are aggregate time series on illness-related absenteeism from various countries, among others United Kingdom, United States and Sweden.

3 The absenteeism rate was here defined as number of days lost per 100 workdays.
British data suggest that women more often claimed sickness benefits than men. The difference was 25 percent in 1914, decreased during World War I and increased during the recession of 1921 and continued to grow in the remaining part of the decade. The peak was reached in 1928-30 when the share who claimed benefits was twice as high among women and three times higher among married women. At the time, pregnant women were identified as “maligners” and the Ministry of Health responded by making controls stricter and reducing benefits for women. With the Great Depression the upward trend of sickness claims was broken among both men and women. (Gilberg 1970; Whiteside 1987: 233-235)

American data on gender-specific patterns of sickness-related absenteeism, collected from various mutual aid associations, group insurance plans and company relief departments, is available from 1921 onwards (Murray 2007). When summarizing the period 1921 to 1938, Gafafer (1940: 964) concluded that rates of disabling sickness and non-industrial injuries generally were over 50 percent higher for women than for men. The rates of illness and injuries showed an upward tendency in the 1920s and declined during the Great Depression, but did more so for men than for women, leading to greater gender differences. The gap was further widened during and after World War II. In 1949 the female-male ratio was exceeding 2.6.

For Sweden, data on sickness-related absenteeism for the period 1930-1950 was collected and published by Meidner (1954), based on information from trade unions, whose members we exempted from periodical fees during sick leaves than lasted for longer than three days of a calendar week. It does not directly report gender-specific rates but rates for members paying full fees under normal circumstances and those paying reduced fees. While the former group consisted of men and women, few adult men were found among the members with reduced fees. Sickness-related absenteeism in Sweden showed an upward tendency, with a particular rapid increases taking place from 1942. Members with reduced fees had typically higher levels of absenteeism and the difference grew during World War II. The contrast between the 1930s and 1940s is most striking when excluding workers employed in public services and looking at factory workers. For this category, the difference between

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4 In the UK, a state-sponsored sickness insurance scheme was put into place in 1911 and kept basically intact in the interwar period. Benefits were fixed (15s. per week for men and 12s for women) for up to 26 weeks for workers with earnings below 250 pounds annually. Within this scheme women more often claimed to sickness benefits than men.

5 For cases lasting 8 consecutive calendar days or longer.

6 Measured as number of weeks with reduced fees per 100 union members.
half and full-paying members in sick leave was small (for some years non-existing) until 1940 when it grew substantially.

When discussing the Swedish development, Meidner concludes that women, young people and elderly have been more responsive to the stress associated with the war years. He rejects the hypothesis that the trends in sick leave were caused by the entrance of marginal groups with above-normal inclination for absenteeism. Data from the Board of Health and Welfare from 1947 onwards show that the overall level of absenteeism (sick leaves and other types) in Sweden as well as the female-male gap continued to increase in the 1950s (Olsson 1967: 46, 53).

Although the studies reviewed in this section have concerned various institutional settings and applied different kinds of data and definitions, most of them point at higher among female blue-collar workers than male in the first half of the twentieth century. However, a number of questions remain unsolved. One central question is whether women generally had a higher disposition of absenteeism, for example due to actual or perceived health status, or if gender differences were caused by situational factors, such as women’s overrepresentation in stressful and repetitive jobs with low average earnings and poor career prospects (Mastekaasa & Olsen 1998; Paringer 1983).

Another central question concerns development over time. Here, the Swedish case is particularly puzzling as it suggests that the female-male gap in sick leave actually emerged in the 1940s. However, Meidner’s data is only indirectly measuring differences between men and women on a high level of aggregation, which may conceal changes in composition of employment and of unions with different praxis of reporting sick leaves. We may also observe that Meidner’s time series data, and similar data from the UK and USA, do not capture short-term sick leaves. This is a problematic limitation since patterns – in terms of duration and frequency – may differ between demographic groups, with possible implications for how firm deal with absenteeism.

Overall, when trying to understand differences in absenteeism levels between groups, over time and space, it is important to acknowledge that such levels may not only be influenced by the behavior of workers, but also of managers (Brown & Sessions 1996; Barmby & Treble 1991). When discussing the American development of sick leave, Murray (2007) argues that much of the observed sensitivity to business cycles that can be observed is due to employers’ selective retention and hiring policies. Employers tend to select workers according to productive performance, including previous absenteeism. Such policies are hard to detect on high levels of aggregation, which calls for studies on industry and firm level.
The Swedish labour market 1919-1950: some rough characteristics

Absenteeism is frequently discussed in relation to the overall situation in the labour market (see for example Frankel 1921; Meidner 1954; Murray 2007). In the period of investigation, Sweden experienced two deep recessions, a first in the early 1920s and a second in the early 1930s. The first crisis was associated with dramatic increases of unemployment but was of rather short duration. However, unemployment levels remained high also in the remaining part of the 1920s. The Great Depression was less dramatic but more prolonged than the previous crisis, particularly for the male part of the labour market. In the second half of the 1930s the situation in the labour market improved and the tight conditions continued over World War II and beyond. In the 1950s, the Swedish labour market was thought to be in a state where labour was fully utilized. Unemployment fluctuated around 3 percent and employers complained about excess rates of labour mobility. In this decade there was a certain increase of female labour force participation, but not of the same dramatic magnitude that would come in the 1960s. Real wages improved considerably among male workers in the inter-war period and the growth of purchasing power increased even faster after World War II. In relative terms, the female-male gap in real wages was narrowed from about 55 to 70 percent in two distinct period, namely during or in the years immediately following the wars.

The Swedish tobacco industry – from manual work to machines

Around 1900 there were about 100 tobacco factories in Sweden, producing cigars, cigarettes, smoking tobacco, chewing tobacco and snuff. Due to an imminent need to increase state revenues, production of tobacco goods was monopolized in 1915 and run by a public-private partnership. The managers were instructed to treat the workforce with particular care, while at the same time run the business as efficiently as possible. Over the years, the Tobacco Monopoly’s personnel consultants initiated a wide range of corporate welfare schemes for the employees, including health and child care (af Trolle 1965). The company also sponsored an existing sickness insurance fund, to which most of the workers were subscribing.

In order to achieve economies of scale, the Swedish Tobacco Monopoly concentrated production to fewer locations. In 1919, production of tobacco goods was undertaken at 11 factories, together employing 5,700 blue-collar workers. Of these, about three fifths were employed in production of cigars and cigarillos and another fifth were making cigarettes (see table 1). Both branches of production employed over 80 percent women. Cigar production
was still essentially a craft, requiring a considerable proportion of skilled workers, whereas cigarettes were produced in great numbers with the use of machines (af Trolle 1965).

Figure 1. Total number of blue-collar workers and share women employed by the Swedish Tobacco Monopoly, 1919-1950

Table 1. Employment shares by branch of production at the Swedish Tobacco Monopoly, selected years

Table 2. Productivity changes (tons per worker) in percent by branch and decade

During the deep depression of 1921, the Tobacco Monopoly began to mechanize production of cigars. Initially, the machines were operated by women, but as the demand for hand-made cigars declined, male cigar makers were transferred to machine work as well. The transformation of the production process had far-reaching consequences. Labour productivity, if measured in tons per worker, was almost doubled 1920s (see table 2). As a result, the company cut its workforce by over 50 percent from 1919 to 1928 (see figure 1). Most of the reduction was accomplished by mass-layoffs in 1921. The layoff policy shifted over time. In the first big reduction in 1921, the order of selection was determined on the basis of age and length of service. The seniority norm was later abandoned. Married women, and in particular those whose husbands also were tobacco workers, were first in line for layoffs in 1927, but this was not a part of a consistent policy. In the 1930s, the mechanization process was smoother and mainly affected preparation work, and in the 1940s cigar production was almost fully mechanized with only small improvements of productivity. This stands in contrast to the development of productivity in the cigarette factories, which was accelerating in the 1930s and 1940s. Furthermore, in cigarette production the introduction and improvement of labour-saving technologies was combined with increasing product demand, wherefore the share of workers employed in this branch increased.

The Tobacco Monopoly was not severely affected by the Great Depression in the 1930s. World War II implied more serious challenges due to the limited supply of raw tobacco and technology. Shortage of raw tobacco made it necessary to change direction of production, which was difficult since machines often were product-specific. The solution was to the use

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7 At least officially, absenteeism was not stated as a layoff criterion during any of the major reductions that took place in the 1920s, 1930s and 1940s, see Karlsson (2008).
existing capital and labour more intensively, by imposing over-time and shift work (Annual report 1943, STM). When the supply of raw tobacco and technology resumed after the war, the Tobacco Monopoly instead got problems to recruit workers in enough numbers, which led to underutilization of machines for cigarette production (Annual report 1945, STM).

With the exception of snuff production, work in the tobacco factories did not involve great requirements on physical strength. It is believed that male tobacco workers were relatively often disabled, or at least unsuitable to perform heavy labour (Fogelström 1965: 204). According to a labour statistical investigation from 1898, the self-reported health was considerably better among male workers. At the same time, male workers had more often received treatment for illness in respiratory organs (Elmquist 1899: 161-163). The frequency of sickness was also higher among male members of sickness insurance funds than female members (Elmquist 1899: 173). The average number of sick days differed somewhat between different types of funds, but ranged between five and eight days for men and three to six days for women. The mentioned investigation did not include figures of overall absenteeism, but it was noted work attendance often was irregular. The custom of taking a day off in the beginning of the week was particularly common among male cigar makers (Elmquist 1899: 101).

As seen in figure 1, the gender composition of the workforce remained fairly stable around 75 percent throughout most of the period of investigation, with a drop to 66 percent in the second half of the 1940s. Male tobacco workers were on average a few years older and more often married than female workers. Since the initial workforce reductions were aimed at young workers and since few new workers were recruited in the 1920s, the mean age of workers increased with about ten years from the early 1920s to the mid-1930s (see figure 2). By various means, including a pension scheme and increased recruitment of young workers, the Tobacco Monopoly managed to reverse the trend towards workforce aging. From the mid-1930s onwards the mean age of men and women decreased with a couple of years. The workforce rejuvenation in the 1930s and 1940s was not immediately associated with a decrease in the share married (see figure 3). Among male workers, the share was stable around 70 percent until World War II and the following years, when it approached 80 percent.

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8 The different frequencies of treatment remained also after controlling for ‘occupational age’.
9 The average number of sick days per occasion was about the same.
10 Work was also irregular on Saturdays, the day after pay day.
11 Figures on the composition of the workforce with regard to sex, age and marital status were obtained from the Tobacco Monopoly’s annual reports.
before it was pushed down to just above 60 percent. Among female workers, the share married was about 40 percent in the early 1930s and increased gradually to almost 50 percent in 1944. In remained at that level until 1948, after which the share married women dropped with 10 percentage points.

Figure 2. Mean age of blue-collar workers at the Swedish Tobacco Monopoly, men and women, 1919-1950

Figure 3. Share married of blue-collar workers at the Swedish Tobacco Monopoly, men and women, 1931-1949

Mechanization had not only implications on the quantity and occupational composition of labour demanded but also on skill requirements and other qualitative characteristics of the workforce. Before mechanization, firms in the tobacco industry relied on high- and semi-skilled workers who processed the tobacco leaves manually. The supply of trained cigar makers and packers was limited and personnel turnover was considered as a serious problem by employers and managers (Elmquist 1899). The introduction of cigar machines had deskilling nature and managers came to describe turnover as something desirable. New cigar workers could be trained on short notice and replace worn out ones; those who could no longer keep up with the high pace set by the machines and often were absent from work (Kvinnoarbetskommittén 1938: 315).

Mechanization of cigar production also meant increased importance of team work. The cigar machines were operated by three workers, each with specific tasks, and the output of each machine was ultimately dependent of the performance of its operators. In this context, absenteeism became problematic, both for the workers and for managers. If a team-member was absent, the remaining members had to co-operate with a less familiar colleague, with the likely result of lower productivity and lower earnings. From the employers’ perspective, team work made it necessary to have a labour reserve. In fact, the Tobacco Monopoly is said to

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12 Previously, the process of cigar making was sometimes performed by pairs of workers, consisting of a bunch maker and an over-roller. This simple team work was however disliked by the trade union and was only applied in some factories.
have employed four workers per machine instead of three. Thus, absenteeism meant that the company could not fully exploit the productive potential of the new technology.\textsuperscript{13}

**Keeping track of work attendance**

In the pre-monopoly era, managers of tobacco factories had few reasons to keep detailed records of work attendance. Most jobs were paid by the piece and there was certain flexibility for workers to come and go (Elmquist 1899: 98-99, see also Cooper 1987: 41-42). After a few years of existence, the Tobacco Monopoly undertook a major reform of the system of remuneration. Straight piece rates were replaced by premium bonus plans, which included a minimum hourly wage and additions for those workers who produced more than an established rate per hour (Annual report 1919, STM). Hence, it became necessary to keep records of not only the output, but also the working hours of each worker. This information was also considered of interest to the company’s owners and other stakeholders.

From 1919, the annual reports of the company board include information on actual number of working hours for male and female blue-collars at factory level, in relation to number of hours offered by the company. The annual reports also include information on the average number of sick days for blue-collars and white-collars. Reporting of sick days and overall rates of absenteeism required a system for time and attendance monitoring at the level of each factory. Exactly how this system worked is not fully known. In the early years, from 1917 to 1919, notes of absenteeism (dates and cause) were made in the ordinary personnel records, which was a card register. From 1919-1920 to the late 1940s, absenteeism was most likely registered in the pay rolls until the late 1940s, when the company introduced a special card register for time and attendance monitoring.

A general problem with company-level statistics on work attendance is that pay rolls and other personnel records may contain significant numbers of workers who have resigned without notice (Frankel 1921). Rates of absenteeism are thus inflated. In this regard, the quality of the absenteeism reporting of the Tobacco Monopoly was improved in 1931 when the head office demanded factory managers to submit details on individual workers who had been absent for a longer period or who had showed a pattern of repeated absenteeism. The head office was to decide whether the absent workers were to be removed from the personnel

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\textsuperscript{13} For more general discussion on team work and absenteeism, see Clark (2007) and Heywood & Jirhjahn (2004).
records, if the absenteeism had not been caused by sickness of other “circumstances of particular distress”.

Overall rates of absenteeism

Firms and researchers have come up with a variety of measures of work attendance and absenteeism. Frankel (1921), for example, is reporting the number of absentees in relation to the average number of workers during a particular period. This is a rough measure since it does not include information on whether spells of absence are clustered among certain individuals or how long each spell typically lasts. The information disclosed in the annual reports of the Tobacco Monopoly is different than Frankel’s data as it is time lost as a percentage of possible working time. Yet, the annual reports do not specify the distribution and length of absence spells. This is a limitation that is worth keeping in mind and something that I intend to follow up in future studies.

The rates of absenteeism presented in this paper have been calculated by subtracting the actual working hours from the number of ‘working hours offered’ by the employer and dividing with the same number. The definition is consistently applied throughout the period of investigation. The number of working hours offered is a concept that is found in the original source and is to be understood as normal working hours adjusted for interruptions of production due to public holidays or shortage of work. The collective agreement between the Tobacco Workers’ Union and the Tobacco Monopoly stipulated reductions of working hours in temporary downturns. Such reductions of hours were undertaken in the 1920s (Karlsson 2008: chapter 7). Since men and women were unevenly distributed among jobs, the number of working hours offered was not exactly the same for men and women. In all years for which I have information, the number of working hours offered to women was somewhat lower than for men. In most years, the difference was small, amounting to one or two days of work. An exception is the year 1940, when the difference was three weeks due to reductions of working hours in production of cigars and cigarillos (Annual report 1940, STM).

Table 3. Working hours by sex about here

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14 This measure is known as the ‘time lost index’ and was frequently used as an indicator of absenteeism in the decades before and after World War II, see Chadwick-Jones et al (1971).

15 Workers who did not use more than 60 percent of the offered hours were excluded from the calculation (Annual report 1919, STM).
When looking at time lost by sex for the entire firm, summarized in figure 4, an overall impression is that the series for men and women follow similar patterns: decrease in the initial years, relative stability in the 1920s and early 1930s, thereafter, a tendency of absenteeism to increase to higher levels. The rate of hours lost for women was in all years higher than for men. While absenteeism among female blue-collars amounted to 7-8 percent of the offered working hours in the 1920s and reached levels of 15 percent or more in the late 1940s, the rates among male workers were typically under 4 percent in the 1920s and 7-8 percent in the end of the period. For women there was a dip in absenteeism in the late 1940s to first half of the 1950s that was not matched for men. This appears in figure 5, which is depicting the female-male rate of time lost. Until the 1940s the female-male rate of time lost fluctuated between 2 and 2.5, thereafter followed some years when the average rate was below 2.

Figure 4. Time lost in percent by sex, 1919-1950 about here

Figure 5. Female-male rate of time lost, 1919-1950 about here

Before further interpretation and explanation of the development of absenteeism among male and female tobacco workers it is worth looking separately at sick leave and other reasons for failing to attend work and into differences among women.

Sick leave
The information on sick leave among tobacco workers in the annual reports is less detailed than that on overall absenteeism. The number of sick days is not specified for men and women until 1925.16 As with overall absenteeism, the data available in the annual report does not allow an analysis of the distribution and length of sick leave.

In line with previous research (see for example Douglas 1919), sick leave was the most important type of absenteeism in the Swedish tobacco industry. Based on data in the annual reports it is possible to estimate that about 65-70 percent of all working hours lost were caused by sickness. There is no clear trend of sickness to become more or less important as a driver of absenteeism.

16 From 1935 the annual reports also include sick days for male and female white-collars.
As seen in figure 6, the number of sick days follows a very similar pattern to that of overall absenteeism: higher levels for women than for men and a period of relative stability before a dramatic rise in the 1940s. From 1940 to 1949, the number of sick days increased from six to 15 for men and from 18 to 30 for women. In relative terms, the increase of sick leave was higher for women than for men during World War II. Otherwise, the female-male ratio of sick days was moving in a span between 1.5 and 2, until the 1950s when women on average had 1.5 times the number of sick days.

Like with absenteeism in general, there is a clear correlation between men’s and women’s sick leave. If the number of sick days among women increases, the same thing often happens for men as well, and vice versa. Furthermore, the correlation becomes stronger over time. For the period 1919 to 1935, the correlation coefficient is 0.54. The equivalent coefficient for the period 1935 to 1950 is 0.88. I interpret this finding as an indication that the jobs of men and women in the tobacco industry become more similar as a consequence of technological changes. This is also in accordance with qualitative evidence.

Other causes of absenteeism

For the period 1935 to 1959 it is possible to calculate the rates of absenteeism for men and women excluding sick leave. This is done by assuming that sick days are equally distributed among the working days, multiplying the average length of a working day (8 hours) by the average number of sick days and thereafter subtracting from the average number of absent hours. The statistic we obtain is a summary measure of absenteeism due to causes such as military service, permissions (allowed and non-allowed) and caring of sick or disabled family members in the home.
As with overall absenteeism and sick leave, the residual rate of absenteeism was higher among women than men (see figure 8). Whereas the rate for women fluctuated between 3 and 6 percent, men’s rate was between 1 and 2 percent in most years of observation.

The higher rates of residual absenteeism among women are most likely due to their greater caring responsibilities in the home. Measured in time, this responsibility outweighed men’s obligations to do military service. In fact, it is surprising to see that there is no clear effect of World War II on absenteeism among male tobacco workers. It seems like those men who were enlisted for military service left their employment, instead of being counted as absent.

Unlike overall rates of absenteeism and sick leave, there is a tendency for the female-male gap in residual absenteeism to increase towards the end of the period of investigation (see figure 9). The residual rates for men and women are also less strongly correlated than sick leave.17

Differences among women

As rates of hours lost began to increase in the second half of the 1930s, so did the interest of the Tobacco Monopoly’s managers for the whole issue. It was clear that women on average were more absent from work than men, but what about differences among women according to age, marital status and family obligations? In 1938 the Tobacco Monopoly conducted more detailed investigations of absenteeism among women.18 The investigations focused on the factory in Stockholm, which was the company’s biggest in terms of employment and had relatively high rates of absenteeism.

Figure 10. Married women’s relative absence (unmarried women=100), tobacco workers in Stockholm, second half of 1937 about here

The investigation, summarized in figure 10, showed that age, marital status and absenteeism were interrelated. Whether married women were more absent than unmarried depended on age and type of absenteeism. Married women in all age groups had more sick days than unmarried women, even though leaves associated with child births had been excluded from

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17 For the period 1935 to 1950, the correlation coefficient between men’s and women’s rates of absenteeism excluding sick leave is 0.33.

18 Tobaksarbeterskorna, B: 9, Vol. 64, Kvinnohistoriska samlingarna, Göteborgs universitetsbibliotek.
the count.\textsuperscript{19} The difference was 34 percent in the age group 19 to 30 and exceeded 71 percent in the age group 51-60. Even stronger effects of age were found with regard to absence due to other causes, but here the greatest differences between married and unmarried were found among younger women. In the age group 19-30, married women had over three times as high rates of absenteeism than unmarried women. Among women over 40, married women had about 50 percent higher rates of absenteeism.

Follow-up investigations of the female tobacco workers in Stockholm were made in the years 1943 to 1948.\textsuperscript{20} Here it was shown that differences between married and unmarried women were particularly pronounced in the years 1942 and 1943 and thereafter became smaller (see table 4). Thus, it the peak in the female-male rate of sick dates seen in figure 7 was probably driven by a higher inclination for absence among married women in these years. Thereafter married-unmarried difference in the rate of sick leave was reduced from about 50 percent to about 25 percent and the residual rate of absenteeism from 250 percent to under 50 percent. In the follow-up investigations, leaves due to child births were specified, but there inclusion did not change the overall picture. Compared to 1937, the difference between married and unmarried women was smaller in 1948.

Table 4. Married women’s relative absence (unmarried women=100) by age group, tobacco workers in Stockholm, 1937 and 1942-1948 (leaves due to child births excluded) about here

\textbf{Interpretation and discussion}

The finding that women consistently have higher rates of absenteeism than men in the tobacco industry during the period 1919 to 1959 is in line with previous international studies, but less so with Meidner’s results for Swedish factory workers, which suggested that gender differences in this regard was something that emerged in the 1940s. However, it cannot be excluded that the tobacco industry had undergone such a change at an earlier date. As mentioned, female tobacco workers around the turn of the century 1900 had fewer sick days. A possible explanation is a process of selective retention at the time of the creation of the Tobacco Monopoly that particularly affected male workers. In other words, men with irregular work habits were less likely to get hired in the new company. Questions for further

\textsuperscript{19} Widows and divorced with under-aged children were counted as married.

\textsuperscript{20} In contrast to the investigation made in 1938, widows and divorced women were counted as unmarried. Another difference was that absenteeism due to child births was specified.
research are whether gender differences were becoming more pronounced in other industries as well and why. Aspects worth considering in this context are regulations of the distribution of alcoholic beverages and sickness insurance funds.21

Another central finding is that the series of overall time lost and sick days for men and women are highly correlated. This supports the idea that women employed at the Tobacco Monopoly had a greater disposition for being absent. If the gap in absenteeism had been caused by the gender division of labour it would have been more reasonable to find a convergence over time since the changes in the production process made the jobs of men and women more similar.

The correlation of the series also suggests that absenteeism of men and women were influenced by similar variables. Even though it is beyond the scope of the present paper to formally estimate the importance of various determinants of absenteeism, it may be interesting to put the observed development in the light of changing conditions in the labour market, demographic characteristics of the workforce, internal work processes and personnel policies. The rate of absenteeism was fairly high when unemployment was low in 1919 and 1920. Absenteeism decreased during the crisis in 1921 and thereafter remained at a low level. Although managers did not directly and openly select unhealthy and irregular workers for layoffs, these may in practice have been overrepresented in the reductions. The mechanization of cigar production in the 1920s was not associated with higher absenteeism. This was in spite of the facts that the average tobacco worker became substantially older and more often married than before. Facing few alternatives in the labour market, tobacco workers accepted the higher work pace and noise levels set by the machines. It is also possible that peer pressure among workers, associated to the team-based nature of machine work, played a role here.

In the 1930s, the Tobacco Monopoly began to rejuvenate its workforce. Young men and women were replacing worn out workers. But instead of achieving higher levels of work attendance, absenteeism became an even more serious problem. This may be due to several reasons. One obvious explanation is that the situation in the labour market improved. The threat of unemployment was not as effective in strengthening labour discipline as before. It is possible that the new generation of tobacco workers had different attitudes towards work and did not accept the conditions of mass production.22 But when assessing the importance of

21 In the late nineteenth century it was possible, and particularly common among men, to be members of several sickness insurance funds at the same time.
22 This was at least a view that existed among employers in other industries at the time.
external conditions it should be noted that the increase in absenteeism was driven by sick leave. Other types of absenteeism did not become more common as unemployment levels decreased. Therefore, it seems reasonable to emphasize a combination of external (labour market conditions) and internal causes (technology and the organization of work) for the development in the 1940s.

One direction of further research is to explore the importance of shift work in combination with gender and civil status. Even though the age of the typical female worker decreased, her likelihood of being married increased. It is possible that shift work, which was applied at times during World War II, may have been particularly detrimental to the health of married women. This could also be an explanation of why differences in hours lost between married and unmarried women tended to become after World War II.

There are several possible ways to deepen the analysis of absenteeism among the Swedish tobacco workers. One way is to look closer at differences between branches and factories, making use of variation in the composition of workforces and production. Most of the firm-level data presented in this is also available for particular factories. Another possibility is to analyze the individual determinants of hours worked and lost. Personnel records from at least one of the Tobacco Monopoly’s factories have survived. The material from this factory is particularly rich in detail from the late 1940s onwards, including information on the duration and causes of absences. This could shed light on the central question whether the difference in time lost was due to women having more frequent spells of absence or if their spells were of longer duration. Frequent spells of short duration are typically more costly for employers, and more likely to affect personnel policies, than if absenteeism is concentrated in long spells.

A third direction of further research into the Tobacco Monopoly is to get a better understanding of how managers perceived the problem of absenteeism and what measures they undertook to solve the problem. Even though the managers could not undertake the drastic measures, there may have invented other, more subtle ways to reduce the number of hours lost. In this perspective, it is for example worth having a closer look at what happened around 1948 when the share of married women dropped substantially (see figure 3).

Conclusions and implications for further research
This paper presents evidence on rates of absenteeism for men and women employed in the Swedish tobacco industry from 1919 to 1959. The conditions in the Swedish labour market
were slack from 1921 until the latter half of the 1930s when demand for labour increased. The tobacco workers were employed by a public-private monopoly that undertook considerable rationalizations of production while at the same time having to live up to social constraints. The managers of the Tobacco Monopoly became increasingly interested in monitoring work attendance and sick leave. Throughout the period of investigation, women had about two times higher rates of absenteeism and sick days than men. The number of hours lost due to sickness showed an upward trend, with a clear peak for women during World War II, probably caused by a combination of higher external demand for labour in combination with increased work intensity. Further investigations initiated by the management in the end of the 1930s showed big differences among women. Married women were more often absent, both due to own illness or non-illness related causes, than unmarried women, even if absenteeism associated with child births were discarded.

The observed correlation in the time series for men and women suggests that the difference in absenteeism was not driven by women being employed in more exhausting and damaging jobs. A central challenge for further studies is to find out to what extent the difference was caused by gender-specific morbidity patterns or a reflection of women’s lower earnings. This latter result has important consequences for our understanding of women’s position in the labour market during the twentieth century. If women actually had higher likelihood of getting sick, and if employers became increasingly concerned with work attendance, which we have good reasons to believe, statistical discrimination with regard to earnings and careers are likely outcomes, also in cases where piece-rates are applied. If women’s higher rates of time lost rather were due to their experience of lower net costs of staying home from work, employers could have reduced absenteeism by raising the wages for women.

That the Swedish Tobacco Monopoly did not impose strict marriage bars or similar policies is not surprising given its particular character. The findings of this study suggest that it is worth reconsidering the personnel policies of employers facing stricter budget constraints. How did they handle absenteeism among men and women? To what extent did they impose marriage bars or other means of statistical discrimination?
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Table 1. Employment shares by branch of production at the Swedish Tobacco Monopoly, selected years

<table>
<thead>
<tr>
<th></th>
<th>Cigars</th>
<th>Cigarettes</th>
<th>Smoking</th>
<th>Chewing</th>
<th>Snuff</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>1919</td>
<td>0.59</td>
<td>0.21</td>
<td>0.03</td>
<td>0.05</td>
<td>0.04</td>
<td>0.08</td>
</tr>
<tr>
<td>1930</td>
<td>0.50</td>
<td>0.23</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.14</td>
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<tr>
<td>1940</td>
<td>0.46</td>
<td>0.21</td>
<td>0.09</td>
<td>0.02</td>
<td>0.04</td>
<td>0.18</td>
</tr>
<tr>
<td>1950</td>
<td>0.34</td>
<td>0.27</td>
<td>0.07</td>
<td>0.04</td>
<td>0.04</td>
<td>0.24</td>
</tr>
</tbody>
</table>

Source: Annual reports, relevant years, STM.

Table 2. Productivity changes (tons per worker) in percent by decade

<table>
<thead>
<tr>
<th></th>
<th>Cigars</th>
<th>Cigarettes</th>
<th>Smoking</th>
<th>Chewing</th>
<th>Snuff</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920s</td>
<td>94</td>
<td>83</td>
<td>46</td>
<td>-12</td>
<td>12</td>
<td></td>
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<tr>
<td>1930s</td>
<td>22</td>
<td>95</td>
<td>-1</td>
<td>-3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>1940s</td>
<td>4</td>
<td>106</td>
<td>69</td>
<td>-55</td>
<td>58</td>
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</table>

Source: Own calculations, data from af Trolle (1965: 365).

Table 3. Working hours by sex, 1935-1950

<table>
<thead>
<tr>
<th>Year</th>
<th>Men</th>
<th>Women</th>
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<tbody>
<tr>
<td>1935</td>
<td>2301</td>
<td>2291</td>
</tr>
<tr>
<td>1936</td>
<td>2294</td>
<td>2285</td>
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<td>1938</td>
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<td>2290</td>
<td>2283</td>
</tr>
<tr>
<td>1940</td>
<td>2240</td>
<td>2098</td>
</tr>
<tr>
<td>1941</td>
<td>2249</td>
<td>2198</td>
</tr>
<tr>
<td>1942</td>
<td>2261</td>
<td>2242</td>
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<td>1943</td>
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<td>1944</td>
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<td>1945</td>
<td>2270</td>
<td>2256</td>
</tr>
<tr>
<td>1946</td>
<td>2290</td>
<td>2265</td>
</tr>
<tr>
<td>1947</td>
<td>2259</td>
<td>2235</td>
</tr>
<tr>
<td>1948</td>
<td>2290</td>
<td>2289</td>
</tr>
<tr>
<td>1949</td>
<td>2283</td>
<td>2260</td>
</tr>
<tr>
<td>1950</td>
<td>2287</td>
<td>2262</td>
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</table>

Source: Annual reports 1935-1950, STM.
Table 4. Married women’s relative absence (unmarried women=100) by age group, tobacco workers in Stockholm, 1937 and 1942-1948 (leaves due to child births excluded)

<table>
<thead>
<tr>
<th>Year</th>
<th>Age group</th>
<th>19-30</th>
<th>31-40</th>
<th>41-50</th>
<th>51-60</th>
<th>All ages</th>
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<tr>
<td></td>
<td></td>
<td>Illness</td>
<td>Other</td>
<td>Total</td>
<td>Illness</td>
<td>Other</td>
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<tr>
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<td>19-30</td>
<td>134</td>
<td>413</td>
<td>186</td>
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<td>255</td>
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<tr>
<td>1942</td>
<td>19-30</td>
<td>130</td>
<td>496</td>
<td>192</td>
<td>141</td>
<td>386</td>
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<tr>
<td>1943</td>
<td>19-30</td>
<td>306</td>
<td>528</td>
<td>357</td>
<td>126</td>
<td>221</td>
</tr>
<tr>
<td>1944</td>
<td>19-30</td>
<td>28</td>
<td>189</td>
<td>40</td>
<td>169</td>
<td>298</td>
</tr>
<tr>
<td>1945</td>
<td>19-30</td>
<td>88</td>
<td>210</td>
<td>95</td>
<td>201</td>
<td>264</td>
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<tr>
<td>1946</td>
<td>19-30</td>
<td>134</td>
<td>553</td>
<td>203</td>
<td>194</td>
<td>309</td>
</tr>
<tr>
<td>1947</td>
<td>19-30</td>
<td>134</td>
<td>190</td>
<td>157</td>
<td>130</td>
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<td>1948</td>
<td>19-30</td>
<td>144</td>
<td>105</td>
<td>126</td>
<td>247</td>
<td>156</td>
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Source: Tobaksarbeterskorna, B: 9, Vol. 64, Kvinnohistoriska samlingarna, Göteborgs universitetsbibliotek.
Figure 1. Total number of blue-collar workers and share women employed by the Swedish Tobacco Monopoly, 1919-1959

![Graph 1](image1)

Source: Annual reports 1919-1959, STM.

Figure 2. Mean age of blue-collar workers at the Swedish Tobacco Monopoly, men and women, 1919-1959

![Graph 2](image2)

Source: Annual reports 1919-1959, STM.
Figure 3. Share married of blue-collar workers at the Swedish Tobacco Monopoly, men and women, 1931-1956

Source: Annual reports 1931-1956, STM.

Figure 4. Time lost in percent by sex, 1919-1959

Source: Annual reports 1919-1959, STM.
Figure 5. Female-male rate of time lost, 1919-1959

Source: Own calculations based on data in annual reports 1919-1959, STM.

Figure 6. Number of sick days by sex, 1925-1959

Source: Annual reports 1925-1959, STM.
Figure 7. Female-male rate of sick days, 1925-1959

Source: Annual reports 1925-1959, STM.

Figure 8. Time lost in percent by sex, excluding sick leave, 1935-1959

Source: Own calculations based on data in annual reports 1935-1959, STM.
Figure 9. Female-male rate of absenteeism, excluding sick days, 1935-1959

Source: Own calculations based on data in annual reports 1935-1959, STM.

Figure 10. Married women’s relative absence (unmarried women=100), tobacco workers in Stockholm, second half of 1937

Comment: Widows and divorced with under-aged children counted as married. Absence due to child birth have not been counted.

Source: Tobaksarbetskorna, B: 9, Vol. 64, Kvinnehistoriska samlingarna, Göteborgs universitetsbibliotek.