

in brief...

Sexism at work

Are differences in men and women's pay an indication of discrimination in the labour market? In a study of Sweden's cigar-making industry in the late nineteenth century, **Tim Leunig** and colleagues find clear evidence of sexism at work.

Employers have paid men more than women since the beginning of time: according to the Bible, the Lord told Moses to value a female servant at three-fifths the value of a male servant. But economists don't see such headline wage differentials as proof that there is sexism in the labour market. After all, men and women may have different levels of productivity.

One reason for productivity differences is that men are typically stronger than women. This allows them to earn a premium, particularly in the past when strength was often important. In many jobs, experience helps and men – who are less likely to take time out to bring up children or to care for the elderly – have generally worked longer. This affects the jobs that men can get and the wages they receive for any given job.

It can be hard therefore to work out whether a particular wage differential represents sexism or not. Many jobs are undertaken almost exclusively by one gender or the other. Even when both genders work alongside each other, productivity is often hard to measure.

But in recent research, we have been fortunate enough to get access to just such measurements. In 1898, the Swedish government commissioned a remarkable survey, in which statistician Henning Elmquist and his team interviewed every firm and every employee in the country's tobacco industry.

We know the job each worker did, the hours they worked and the earnings they received. In addition, we know a host of other details – the workers' ages, their experience on the job, whether they had children, whether they were union members and so on. All of the individual data survive, giving us a high quality employer-employee matched data set.

Cigar-making is a good industry to investigate. Strength wasn't important, but experience did matter. Rolling cigars was skilled work, even if you were using a wooden mould to help you. A few factories were exclusively male and a few were exclusively female, but in most cases men and women worked alongside each other doing exactly the same job.

Our study uses a modern analytical technique to calculate whether men and women were paid fairly, given their levels

of experience and so on. In essence, this means we work out what women would have been paid had they been paid the same as men of the same age, experience and so on. We can assess the extent of discrimination by comparing what they 'should' have been paid with what they were actually paid.

Some workers were paid by the hour – those preparing the raw tobacco, for example. Here we find clear evidence of sexism. Men were paid 'men's wages' and women were paid 'women's wages' – and there was a big difference between the two.

Other workers were paid a piece rate, notably cigar-rollers, who were paid by the cigar. Here we find a completely different result: all of the difference in the earnings of men and women can be explained by differences between the characteristics of men and women rolling cigars. Men were older, more experienced and more productive. As a result, they produced more cigars per week and earned more per week in direct proportion to their additional output.

What's more, we find that men and women were equally likely to get promoted to cigar-rolling, given their characteristics. Experienced workers got offered these positions, irrespective of gender. There was no gender bar or discrimination against women at this level. There was a 'glass ceiling', but it was higher up: all of the supervisors and managers were male.

These results show that the Swedish tobacco firms were internally inconsistent. They were sexist when it came to paying workers by the hour. But they were gender-blind when it came to putting the best workers into their piece rate sections and paying them equally well. In all cases, the magnitudes are sufficiently large that firms must have been aware of the inconsistencies in their behaviour.

Pay rates and pay systems don't operate in a vacuum because firms don't operate in a vacuum. For men paid by the hour, firms had to pay the economy-wide 'going rate' for male labour. If they didn't, the men would have left for other jobs. So even though cigar-making didn't require strength, most men would be able to get a job that did and therefore commanded the 'strength premium' even when their strength wasn't used.

For the Swedish tobacco industry, employing men made bad commercial sense



In contrast, women's primary alternative employment was as domestic servants, where wages were low. Firms were able to attract women even when they offered pay rates far lower than those paid to men.

Men paid by the hour represented bad value for money to the firms that employed them because they were paid a disproportionately large premium relative to their productivity advantage. Firms seem to have recognised this: the industry was almost all male in 1860, but it feminised steadily thereafter.

The presence of more than 50 Swedish tobacco firms was sufficient to make the industry reasonably competitive, even though imports were low. After all, cigars are light and cheap to transport.

Economists have always instinctively believed that competition disciplines firms. A firm that employs unsuitable workers or pays a wage disproportionate to their productivity will increase its costs and lower its profits. This means that a firm takes a hit every time it discriminates. The implication is that firms that employed a disproportionately large number of men would have higher costs, lower profits and thus be less likely to survive.

Using data on firm survival rates, we are able to test the effect on firm survival of a more feminised workforce. The results are clear: the more men that a firm employed, the more likely it was to go out of business between 1863 and 1915. Employing men made bad commercial sense.

In this way, product market competition imposed a discipline on firms. At the going male pay rate, they couldn't employ men without risking their firm's very survival. But we shouldn't get too excited about the effect on women's lives. Product market competition may have created jobs for women, but this only happened because women's wages in the wider labour market were lower than those for men. The market delivered more jobs for female cigar-makers, but it didn't deliver equal pay.

The market delivered more jobs for female cigar-makers, but it didn't deliver equal pay

This article summarises 'Gender, Productivity and the Nature of Work and Pay: Evidence from the Late Nineteenth-century Tobacco Industry' by Tim Leunig, Maria Stanfors, Björn Eriksson and Tobias Karlsson, CEP Discussion Paper No. 1053 (<http://cep.lse.ac.uk/pubs/download/dp1053.pdf>).

Tim Leunig is reader in economic history at LSE, an associate in CEP's research programme on globalisation and currently a policy adviser in the UK government's Department for Education. **Maria Stanfors**, **Björn Eriksson** and **Tobias Karlsson** are at Lund University.