Wage inequality within and across firms: the role of market forces, government and firm policies

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Wage inequality has increased sharply in many industrialised countries over the past decades. In Germany, for example, real (i.e. inflation-adjusted) wages at the bottom 10 per cent of the wage distribution declined by more than 15 per cent between 1995 and 2010, whereas real wages at the top 10 per cent of the wage distribution rose by more than 12 per cent over the same period. Real wages at the middle of the wage distribution, at the median, remained roughly constant between 1995 and 2010, even though GDP grew by 1.24 per cent per year on average over these 15 years (e.g. Dustmann *et al.*, 2009; Kügler *et al.*, 2018).

In addition to overall rising wage inequality, noticeable inequalities in employment and wages persist between men and women, and a large part of the gender gaps observed today in advanced countries can be attributed to the arrival of children. In West Germany, in particular, it is still common for women to withdraw from the labour market for an extended period after the birth of their first child. Once mothers return to the labour market, they often do so on a part-time basis to a lower-paying occupation than the occupation in which they were employed before birth.

Analysing wage inequality

The goal of my ERC-funded research is to first shed new light on the sources behind the rising overall and persistent gender inequalities in the labour market and, second, to evaluate the effectiveness of government and firm policies aimed at tackling these inequalities. I put firms at the centre of the analysis. First, existing research has shown that wages have become increasingly dependent on where workers work, rather than on the skills that workers possess (e.g. Card *et al.*, 2013; Song *et al.*, 2019). And second, firms have a crucial role to play in tackling gender inequalities by providing policies and creating a work environment that supports mothers in balancing family and career.

My research is organised around three themes. In Part A, I investigate the causes behind rising wage inequality between firms. In Part B, I investigate how two important policies currently high up the policy agenda, minimum wages and taxation of firms' profits, impact on workers and firms. In Part C, I then turn to gender gaps inside the firm and explore to what extent firm policies and the work environment shape mothers' careers after childbirth.

Part A
Increasing wage inequality across firms: causes

In a perfectly competitive labour market, wages depend only on workers' skills but not the type of firm workers work for. Firms bid up workers' wages up until they are equal to the marginal revenue product of workers' labour. A growing concern among academics and policymakers alike is that we are increasingly moving away from this benchmark toward a monopsonistic labour market where workers are paid wages below the marginal revenue product of their labour while firms earn higher and higher profits. I first investigate whether and to what extent routine-biased technological change (RTC)—often seen as the key driver behind the rise in wage inequality observed in many countries—can explain why wages have become increasingly dependent on where workers work by amplifying differences between firms in terms of their size, the types of workers they employ, and the wages they pay to workers of the same type. Existing theoretical models of RTC can explain why wages have diverged across workers with different skills but not why wages of workers with similar skills have diverged across firms. My proposed theoretical framework deviates from the benchmark of perfect competition with a representative firm assumed in most existing models of RTC and incorporates RTC into a model with heterogeneous firms where workers with the same skills are paid different wages across firms. I then empirically validate the implications from the theoretical model drawing on high quality matched employer-employee data from Germany. The theoretical framework and empirical analysis allow me to address questions such as: Does RTC increase the sorting of more skilled workers to more productive firms? Does RTC increase the segregation of workers across firms such that more skilled workers are increasingly likely to work with each other?

Does RTC lead to increased firm exits and increased employment concentration in large firms? Does RTC increase wage dispersion across firms for the same worker type? And to what extent do these channels contribute to the overall rise in wage inequality across firms?

Second, I aim to directly quantify the extent to which workers are paid wages below the marginal revenue product of their labour and for which workers and firms, and in which markets, the wedge between workers' marginal revenue product and wages is highest. This is a challenging task as workers' marginal revenue product is near impossible to observe. My approach is based on the tight link between the labour supply elasticity to the firm and the wedge between workers' marginal revenue product and their wages; the higher the labour supply elasticity to the firm, the lower the monopsony power of firms, the more competitive the labour market, and the lower the wedge. I propose a novel methodology to estimate the labour supply elasticity to the firm, leveraging large idiosyncratic shocks to firms and linking increases in firm size to wage increases in the firm. The empirical analysis draws once again on high quality linked employer-employee data for Germany. My research here allows me to address questions such as: Has monopsony power, and hence the wedge between workers' wages and their marginal revenue product, increased over time in Germany—specifically so over the period 1995 to 2010 when median wages were stagnant and wage inequality rose sharply? Have larger firms more monopsony power than smaller firms? Do firms have more monopsony power over certain types of workers, such as women or low-skilled workers? And is monopsony power higher in more concentrated markets dominated by few firms?

Part B
Government policies aimed at tackling wage inequalities across firms and curbing firms' monopsony power

What can governments do to tackle wage inequality and curb firms' monopsony power? I evaluate two potential policies, minimum wage policies and business taxation.

In a perfectly competitive labour market, a minimum wage will simply lead to more unemployment and ultimately leave low-wage workers worse off. In a monopsonistic labour market, in contrast, a minimum wage may curb the monopsony power of firms, increase wages of low-wage workers and reduce firms' profits without lowering employment. I investigate the labour market effects of Germany's first-time introduction of a minimum wage of €8.50 per hour on 1 January 2015. The minimum wage cut deep into the wage distribution, affecting 15 per cent of workers. I focus on questions such as: Did the minimum wage increase wages of low-wage workers? Did it destroy the jobs of low-wage workers? Did the minimum wage induce small businesses to exit the market? Did the minimum wage have a different impact on large firms that may have more monopsony power than on small firms that pay wages close to workers' marginal revenue product? And did the minimum wage help reduce wage inequality within and between firms?

An alternative policy to curb monopsony power of firms could be to increase taxes on firms' profits. In Germany, tax rates levied on firms' profits vary locally, across municipalities, and over time, as municipalities review their tax rates on an annual basis. I focus on sharp, sudden and persistent tax changes across municipalities to address questions such as: Do higher business tax rates destroy or create jobs? Do firms shift the costs arising from higher business tax rates on to their workers by lowering workers' wages? Does an increase in the business tax rate differentially affect small and large firms, and skilled and unskilled workers? And does business taxation affect wage inequality within and between firms?

Part C
The importance of firms in alleviating gender inequalities

In Part C, I shift the focus to one specific aspect of inequality—gaps in employment, wages and occupational choice between men and women. I investigate the role of firms in speeding up the return to work of mothers after childbirth, in fostering mothers' labour market careers post-birth, and ultimately in reducing labour market inequalities between men and women.

First, firms can organise work in ways that are conducive or detrimental to combining family and career. For example, excessively long working hours are likely to discourage mothers to return to the firm after childbirth, while flexible working time arrangements, firm-financed or firm-provided childcare, or mentoring programmes may encourage them to do so. Drawing on survey data on firms that include detailed information on work organisation and family-friendly policies and that are linked to administrative data on the firms' employees, I address the following questions: Are family-friendly policies provided by firms successful at speeding up mothers' return to work after childbirth and continue to work in their pre-birth occupation, possibly more so than one-size-fits-all government policies? And do family-friendly policies help firms to attract and retain talent?

Firms, or workplaces, are also places where workers meet and interact, make friends and learn from each other. In a second step, I ask whether and to what extent co-workers affect mothers' post-birth careers. Specifically, I investigate whether colleagues who grew up in a more gender-egalitarian environment and who hold more gender-egalitarian beliefs and values induce women from more traditional backgrounds to return to work faster and work longer hours after childbirth. I proxy the share of colleagues with more gender-egalitarian attitudes with the share of colleagues who grew up in East Germany. As a state socialist country, East Germany strongly encouraged mothers to participate in the labour market full-time after a short leave spell. West Germany, in contrast, propagated a more conservative role model where men were the main breadwinners. In the aftermath of the fall of the Iron Curtain in November 1989, between 200,000 and 400,000 East German men and women have migrated to West Germany each year. West German women were therefore suddenly exposed to a much larger share of colleagues from more gender-egalitarian backgrounds, allowing me to investigate whether the East German gender-egalitarian culture has spread to the more traditional West.

The bigger picture

Overall, my research sheds novel light on 'big picture' questions such as: To what extent has RTC contributed to the rise in wage inequality not only across workers with different skills but also across firms among workers with similar skills? Has monopsony power of firms increased over time, allowing firms to pay wages below workers' marginal revenue product and to earn higher profits? Can minimum wage policies and higher tax rates on firms' profits curb monopsony power and reduce wage inequality between firms? And is the lack of exposure to more gender-egalitarian values and beliefs in the firm one reason behind the persistent employment and wage gaps between men and women?

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PROJECT NAME

FIRMINEQ – WAGE INEQUALITY WITHIN AND ACROSS FIRMS: THE ROLE OF MARKET FORCES, GOVERNMENT AND FIRM POLICIES

PROJECT SUMMARY

The aim of my ERC-funded research is to first shed new light on the sources behind the rising overall and persistent gender inequalities in the labour market and, second, to evaluate the effectiveness of government and firm policies aimed at tackling these inequalities. The focus is on Germany, a country that has experienced a particularly sharp increase in wage inequality and where the progress of women in the labour market has stalled over the past three decades.

PROJECT LEAD

Uta Schönberg is a Professor of Economics at University College London and Deputy Director of the Centre for Research and Analysis of Migration (CReAM). Her research interests are in labour economics and span topics such as wage inequality and wage dynamics; family and gender economics; and the economics of migration. Professor Schönberg held positions as a Joint Managing Editor at the Journal of Labor Economics and the Review of Economic Studies.

PROJECT PARTNERS

The project is based at the Department of Economics at University College London and at the Centre for Research and Analysis of Migration (CReAM). Collaboration partners include Queen Mary University London, UK and the Institute of Employment Research (IAB) in Nuremberg, Germany.

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