

## Gender wage discrimination

### Does the extent of competition in labor markets explain why female workers are paid less than men?

Keywords: gender wage gap, wage discrimination, imperfect labor market competition, monopsony power, monopsonistic discrimination

#### ELEVATOR PITCH

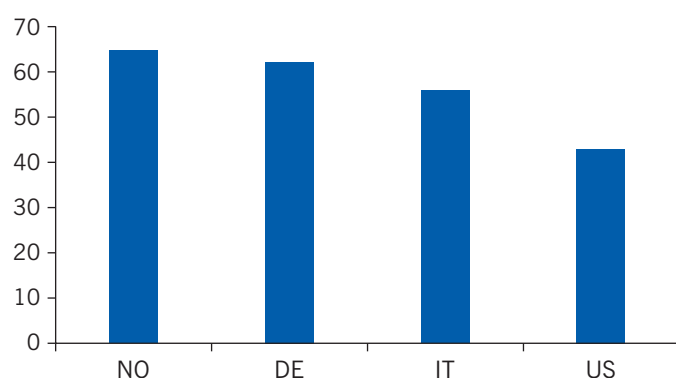
There are pronounced and persistent wage differences between men and women in all parts of the world. A significant element of these wage disparities can be attributed to differences in worker and workplace characteristics, which are likely to mirror differences in worker productivity. However, a large part of these differences remains unexplained, and it is common to attribute them to discrimination by the employer that is rooted in prejudice against female workers. Yet recent empirical evidence suggests that, to a large extent, the gaps reflect “monopsonistic” wage discrimination—that is, employers exploiting their wage-setting power over women—rather than any sort of prejudice.

#### KEY FINDINGS

##### Pros

- ⊕ Evidence shows that monopsonistic wage discrimination can account for a large part of the unexplained gender wage gap.
- ⊕ Once monopsonistic wage discrimination has been recognised, it can be straightforwardly countered by raising women’s sensitivity to wages, through a range of measures.
- ⊕ Equal pay legislation may raise women’s wages without harming their employment.

Percentage of the unexplained gender wage gap predicted by monopsonistic wage discrimination



Source: Based on Figure 1.

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##### Cons

- ⊖ Employers profit from discriminating against women whose labor supply to the single employer is less sensitive to wages.
- ⊖ Since monopsonistic wage discrimination raises employers’ profits, it is likely to be widespread and to persist in the long term.
- ⊖ Apart from some suggestive findings, direct evidence on the drivers of women’s lower wage sensitivity is still lacking.
- ⊖ Very little is currently known on whether employers really make use of their more pronounced wage-setting power over women.

#### AUTHOR’S MAIN MESSAGE

A growing body of international evidence suggests that a substantial part of the unexplained gender wage gap stems from imperfect competition in the labor market. This monopsonistic wage discrimination arises when employers exploit their more pronounced wage-setting power over female workers, whose labor supply to the single employer is less sensitive to wages. Since wage discrimination raises employers’ profits, it is fostered by market forces and thus likely to persist in the long term. Fighting monopsonistic discrimination involves introducing policy measures to raise women’s wage sensitivity, for example, through improved childcare or more flexible working hour arrangements, as well as introducing equal pay legislation.

## MOTIVATION

Numerous studies from around the world have documented large wage gaps between genders that remain unexplained, even after accounting for different worker and workplace characteristics. It is common practice to attribute these unexplained gaps to discrimination in the labor market, although they may also, to some extent, mirror productivity differences stemming from unobserved worker and workplace characteristics. Predominantly, wage discrimination is considered to be rooted in prejudices of employers against women, who can indulge their discriminatory preferences because of imperfectly competitive product or labor markets [1].

In contrast to this view, an increasing number of recent studies have investigated whether this discrimination may be the result of employers striving to maximize profits in imperfect labor markets. This strand of the literature argues that employers may profit from discriminating against women over whom they possess more wage-setting power. If employers were to profit from discrimination, the argument continues, not only should such discrimination be considered to be widespread, but also it should be expected to persist—even if any existing prejudices against women were to fade.

## DISCUSSION OF PROS AND CONS

### How competitive are labor markets?

To explain gender wage discrimination as employers striving to maximize profits, labor markets first have to be imperfectly competitive. In other words, employers have to possess significant wage-setting or “monopsony” power over their workers—where “monopsony” denotes the demand-side counterpart of a (supply-side) monopoly [2]. From a single employer’s perspective, s/he must be able to find some workers willing to work for her/him, even if s/he offers lower wages than the competitors. Employers’ monopsony power, therefore, hinges on whether workers’ sensitivity to wages when supplying labor to a single employer is limited. If this were not the case, then employers would not be able to deviate from their competitors’ wage offers, and they would behave as passive wage takers. In such a situation, the labor market would be perfectly competitive, and gender wage discrimination would not be possible.

Empirically, how strong employers’ monopsony power is, boils down to the question of how sensitively workers’ labor supply to a single employer reacts to a change in the wage offered by this employer. In other words, the wage “elasticity” of labor supply to the employer has to be measured, which would then indicate the percentage change in the labor supply following a 1% increase (or decrease) in the wage offered. The larger the wage elasticity, the more sensitive workers are to wages when deciding whether to supply labor to a single employer, and the less pronounced is this employer’s wage-setting power. It should be noted, however, that workers’ labor supply to a single employer, that is, whether workers supply labor to this employer or not, differs conceptually from their labor supply at the level of the market, that is, workers’ decision whether to participate in the labor market or not.

Crucially, by exercising their monopsony power, employers increase their profits at the expense of workers’ wages. In such a situation, workers are paid at a rate that does not reflect their productivity, which has been coined “exploitation” in the literature [2]. Notably, if employers make full use of their monopsony power, the degree of exploitation,

that is, the percentage gap between workers' productivity and their wages, is directly related to workers' wage elasticity [3]. The responsiveness of workers' labor supply to wages offered by a single employer can thus be used as a measure of employers' wage-setting power in imperfect labor markets.

### Labor supply elasticity to a single employer

The wage elasticity of workers' labor supply to a single employer gives the percentage change in the labor supplied to this employer following from an increase (or a decrease) in the offered wage by 1%. Workers' labor supply to a single employer, that is, whether workers supply labor to this employer or not, differs conceptually from their labor supply at the level of the market, that is, workers' decision whether to participate in the labor market or not. Whereas it is conventional wisdom that women's labor supply is more wage-elastic than men's at the level of the market, with women's participation rate and working hours being more sensitive to wages than men's, the crucial dimension for employers' monopsony power over their workers is workers' labor supply at the single employer level. For this reason, the literature on monopsonistic gender wage discrimination examines whether employers possess more wage-setting power over women by investigating whether women supply labor less wage-elastically than men to the single employer (rather than at the level of the market).

*Source: Hirsch, B. Monopsonistic Labour Markets and the Gender Pay Gap: Theory and Empirical Evidence. Heidelberg: Springer, 2010; Manning, A. Monopsony in Motion. Imperfect Competition in Labor Markets. Cambridge, MA: Princeton University Press, 2003.*

### What are the reasons for imperfect labor market competition?

This in turn raises the question of possible reasons for workers' limited responsiveness to wages when supplying labor to a single employer. Or, phrased differently, why do workers not (immediately) switch employers when experiencing a wage cut, thereby providing employers with discretion in wage setting? There are a number of possible reasons for workers' limited wage sensitivity [2]:

- There may be a concentration on the demand side, such as historically in company towns, where there is a predominant employer. Or employers may follow a "gentlemen's agreement" not to bid up wages, such as in very specialized jobs (e.g. in academia or professional sports) or in heavily regulated occupations (e.g. certified teachers or registered nurses).
- Individual workers may substantially differ in their preferences over non-wage job attributes, such as the workplace environment or working hour arrangements, and may therefore tolerate wage differences across employers—at least to some extent—as long as the non-wage job attributes match their individual preferences.
- Mobility and moving costs may prevent workers from commuting and/or moving to employers further afield, thereby restricting the range of possible employers.
- Workers may possess limited knowledge of alternative job offers because job markets are search markets and generating job offers through job search activity is costly to workers, that is, there are search "frictions."

All these factors impede workers' responsiveness to wages and provide employers with monopsony power over them. Consequently, employers who pay lower wages than their competitors are still able to retain some of their workers, and the labor market turns out to be imperfectly competitive, with workers earning below-productivity wages.

### What is monopsonistic wage discrimination and how does it work?

In a case where there are groups of workers who differ in their wage sensitivity when supplying labor to a single employer, employers can raise their profits by discriminating against those workers who are less responsive to wages [2]. Since this sort of wage discrimination involves employers exploiting their more pronounced monopsony power over less "wage-elastic" groups of workers, it is termed "monopsonistic wage discrimination."

As an illustration of monopsonistic wage discrimination, it is useful to consider the following simple example. Suppose there are female and male workers who do not differ in their productivity, and also suppose that women are less responsive to wages than men when supplying labor to a single employer. For concreteness, assume that the wage elasticity of men's labor supply to the employer is 3.7, whereas the elasticity of women's supply just accounts to 2.6 (i.e. if wages increase by 1%, men's labor supply increases by 3.7% and women's by 2.6%). (Incidentally, these numbers coincide with empirical estimates for Germany [4].) Suppose further, that the employer's workforce consists of

#### Monopsonistic wage discrimination

The origins of monopsonistic wage discrimination, or "Robinsonian discrimination," lay in Joan V. Robinson's (1969, first edition in 1933) influential *Economics of Imperfect Competition*. In this book, Robinson not only presented the first coherent analytical framework for imperfectly competitive labor markets, but she was also the first to propose the term "monopsony" for the demand-side counterpart of a monopoly, that is, a market with a single buyer. What is more, in applying the insights of her framework, Robinson was the first to explain gender wage discrimination from employers' striving to maximize profits in imperfectly competitive labor markets.

As Robinson demonstrates, if women are less driven by wages when deciding on whether to supply labor to a single employer than men, employers possess more wage-setting power over their female workers and can increase their profits by paying lower wages to them, all else being equal. Monopsonistic wage discrimination thus provides an economic explanation of gender wage differentials that persist, even after accounting for differences in worker productivity (stemming from worker or workplace characteristics). Since monopsonistic wage discrimination against women (or other groups of workers) is profitable for employers, it is likely to be widespread and to persist in the long term. In contrast to the conventional "taste-based" approach to employer discrimination (Becker, 1971, first edition in 1957), Robinsonian discrimination is not rooted in employer prejudices against women, and is thus likely to prevail, even if prejudices against them were to fade.

Source: Becker, G. S. *The Economics of Discrimination*. 2nd edn. Chicago, IL: University of Chicago Press, 1971; Hirsch, B. *Monopsonistic Labour Markets and the Gender Pay Gap: Theory and Empirical Evidence*. Heidelberg: Springer, 2010; Robinson, J. V. *The Economics of Imperfect Competition*. 2nd edn. London: Macmillan, 1969.

100 men and 100 women and that the employer decides to pay a wage of 10 to each worker, independently of the worker's gender. From the employer's perspective, though, such a gender-neutral wage policy is sub-optimal; in terms of profits s/he could do better by offering different wages to men and women.

To see this point clearly, consider the following thought experiment (which characterizes the employer's profit-maximizing wage policy). If the employer cut women's wages by 5%, women's labor supply would drop by 13%, or 13 workers (i.e. 5% times the women's elasticity of 2.6). In order to keep her/his workforce constant, the employer would in turn have to increase men's wages by 3.5%, for doing so would raise men's labor supply by the same 13% or 13 workers (i.e. 3.5% times the men's elasticity of 3.7). With this discriminatory wage policy in place, men would earn 10.35 while women would just receive 9.50, which amounts to a gender wage gap in favor of men of 8.9%. Yet, since the wage increase for men is smaller than the wage cut for women, the employer saves on labor costs and increases her/his profits by discriminating against women. Clearly, forgoing this opportunity of raising profits would come at a competitive disadvantage for the employer, and one should thus expect her/him to engage in monopsonistic gender wage discrimination—even in the absence of prejudices against women.

Since the reasoning behind monopsonistic wage discrimination abstracts from productivity differences across workers, it provides a neat explanation for unexplained wage differentials, that is, wage differentials that prevail after accounting for differences in worker and workplace characteristics. Under monopsonistic wage discrimination, these unexplained gaps originate from differences in workers' wage sensitivity when supplying labor to a single employer, with the less wage-elastic groups obtaining lower wages, all else being equal.

## What is known about monopsonistic gender wage discrimination?

### *How to assess monopsonistic wage discrimination?*

Empirically, the scope of monopsonistic wage discrimination, as an explanation for the unexplained gender wage gap, hinges on two questions: (i) are low-paid women less wage-elastic when supplying labor to a single employer than high-paid men?; and (ii) if so, is the gender difference in the wage elasticity large enough to account for the unexplained gender wage gap in the data? To answer these two questions, the typical study on monopsonistic gender wage discrimination proceeds in three steps:

- To obtain gender-specific estimates of the wage elasticity of workers' labor supply to a single employer, the study employs an estimation approach that builds on data on workers' job separations (i.e. worker quits) and measures how the separations vary with the wage paid by employers [3]. Intuitively, the larger the response of job separations to wages, the harder it is for employers to retain workers when cutting wages, and the lower is their monopsony power.
- Based on these gender-specific elasticity estimates, the study predicts the gender wage gap that would prevail under monopsonistic wage discrimination.
- To assess how well monopsonistic wage discrimination performs in accounting for the unexplained gender wage differential, the study compares the predicted wage gap under monopsonistic wage setting to the unexplained wage gap in the data.

Whereas this approach seems straightforward at first glance, it is a hard task to obtain credible estimates of the wage elasticity of workers' labor supply to the single employer in the first step. Naively, one could hope to come up with an estimate of the wage elasticity by relating how employers' employment levels vary with their wages. Such an approach, however, would confuse workers' labor supply decisions with changes in the employer's demand for labor, for example, wage and employment drops spurred by deteriorating demand for the employer's goods. The crucial task, then, is to isolate the supply-side response of employment to varying wages.

The solution to this problem, chosen by existing studies, involves estimating how workers' job separations vary with the wages paid by employers, that is, it relies on an estimate of the wage elasticity of workers' job separations. Yet obtaining such an estimate is again far from trivial. Obviously, workers' separation decisions depend on their current wage level relative to the wage they could earn from working for alternative employers, and one has, therefore, to account adequately for worker and workplace characteristics that determine workers' alternative wages [3]. Doing so requires very rich data and may yield biased elasticity estimates if relevant characteristics are missing.

### ***Evidence on monopsonistic gender wage discrimination***

A growing number of recent contributions have adopted this methodology to investigate the case for monopsonistic gender wage discrimination (Figure 1). Apart from the German

Figure 1. Evidence on monopsonistic gender wage discrimination

<i>Study</i>	<i>Sample</i>	<i>Estimated wage elasticity of workers' labor supply to the single employer</i>	<i>Predicted/unexplained gender wage gap (%)</i>
[4]	German social security data, 2002–2004	Men: 3.66 Women: 2.59	8.9/14.3
[5]	Data from a US chain of grocery stores, 1977–1982	Men: 3.02 Women: 2.11	10.2/23.8
[6]	US social security data, 1990–2008	Men (average): 1.09 Women (average): 0.94	7.6/23.1
[7]	Australian HILDA survey data, 2001–2007	Men: 0.76 Women: 0.61	14.0/14.7*
[8]	Italian social security data, 1985–1996	Men: 0.94 Women: 0.71	17.0/30.4
[9]	Norwegian social security data, 1989–1997	Low-skilled men: 1.49 Low-skilled women: 1.14 High-skilled men: 1.18 High-skilled women: 1.09	12.3/19.0 4.0/23.6

*Notes:* Estimates shown are selected results from the respective study. \* denotes that the study only reports a descriptive gender wage gap.

*Source:* Hirsch, B., T. Schank, and C. Schnabel. "Differences in labor supply to monopsonistic firms and the gender pay gap: An empirical analysis using linked employer–employee data from Germany." *Journal of Labor Economics* 28:2 (2010): 291–330 [4]; Ransom, M. R., and R. L. Oaxaca. "New market power models and sex differences in pay." *Journal of Labor Economics* 28:2 (2010): 267–289 [5]; Webber, D. A. "Firm-level monopsony and the gender pay gap." *Industrial Relations* 55:2 (2016): 323–345 [6]; Booth, A. L., and P. Katic. "Estimating the wage elasticity of labour supply to a firm: What evidence is there for monopsony?" *Economic Record* 87:278 (2011): 359–369 [7]; Sullis, G. "What can monopsony explain of the gender wage differential in Italy?" *International Journal of Manpower* 32:4 (2011): 446–470 [8]; Barth, E., and H. Dale-Olsen. "Monopsonistic discrimination, worker turnover, and the gender wage gap." *Labour Economics* 16:5 (2009): 589–597 [9].

study mentioned above [4], there exists supportive evidence on monopsonistic gender wage discrimination for the US [5], [6], Australia [7], Italy [8], and Norway [9].

Whereas the magnitude of the elasticity estimates varies over countries and samples, all these studies unequivocally find that women are markedly less wage-elastic than men in their labor supply to the single employer. With the exception of highly-skilled women in Norway, for whom this prediction is smaller in magnitude, the estimates predict unexplained gender wage gaps ranging from 7.6% to 17.0%. Consequently, these studies show that monopsonistic wage discrimination can account for a considerable part of the unexplained gender wage gap in the data.

### ***Reasons for women's lower wage sensitivity***

What are the possible explanations for why women are less sensitive to wages paid by a single employer? As a case in point, domestic responsibilities may prevent women from following monetary considerations when choosing their employers, they may instead care more about the job's location (e.g. low commuting time or near a nursery school) or the working hours offered (e.g. the possibility of working part-time) [4]. In a similar vein, women with more domestic responsibilities may also show limited geographic mobility that reduces the breadth of their job search and thus the number of job offers available to them. This contrasts to men, who are typically not subject to such constraints in their mobility and job search behavior.

There are several pieces of evidence suggesting that these potential drivers of women's lower wage sensitivity actually matter. First, job mobility patterns differ significantly between men and women and point at lower competition among employers for female workers. Studies for the UK and the US [3], and Germany [10], document that hiring a woman less often involves a job-to-job move than hiring a man. Yet the higher the share of hires coming from employment (as opposed to non-employment), the more likely incumbent workers are wooed away by competing employers, and thus the more competitive the labor market is [3]. Hence, the lower share of hires from employment for women indicates that labor market competition is less pronounced for women. Intuitively, lower employer competition for female workers means that women find it harder to move up the wage distribution through job-to-job moves from low-paying to high-paying employers, and are thus less sensitive to wages when supplying labor to a single employer.

Second, all the studies on monopsonistic wage discrimination identify the wage elasticity of workers' labor supply to the single employer from the wage sensitivity of workers' job separations [4], [5], [6], [7], [8], [9]. Hence, women's lower wage elasticity reflects that their job separations are less responsive to wages. Put differently, women appear to be less driven by monetary factors than men when deciding on whether to stay with their current employer or to switch jobs. This finding is further backed up by survey evidence for the UK that women are less motivated by money when considering job-to-job moves, are more likely to quit existing jobs on account of domestic responsibilities, and have lower commuting times, particularly when they are married or have children [3].

What fits nicely into this picture is that the gender difference in the wage elasticity of workers' labor supply to the single employer in Norway is smaller for highly-skilled than for low-skilled workers [9]; highly-skilled women are arguably more career-oriented than women with fewer qualifications. Under monopsonistic discrimination, the predicted

gender wage gap for highly-skilled workers is just 4.0%, whereas it amounts to 12.3% among the low-skilled. Furthermore, evidence from the US shows that workers' marital status, and the presence of children in workers' households, can account for roughly 60% of the gender difference in the wage elasticity [6]. All these findings underscore the fact that domestic responsibilities are likely to be one of the key drivers behind women's lower wage sensitivity.

### ***Direct evidence on monopsonistic gender wage discrimination***

One of the key deficiencies of the standard approach to monopsonistic wage discrimination is that one cannot be sure that gender differences in the wage elasticity really translate into gender wage gaps. In other words, it is not known whether employers actually exploit their more pronounced monopsony power over women and engage in monopsonistic gender wage discrimination.

Clearly, it is hard to spot direct evidence of discriminatory behavior in the data. Reassuringly, one study for the US provides neat indirect evidence on this issue [5]. The data used in this study come from a regional chain of grocery stores for the years 1977–1982. In 1984, the firm lost a class-action lawsuit initiated by some of its female workers and was found guilty of discriminatory behavior in job assignments and promotion decisions. This suggests that at least a part of the gender wage differential in this firm actually reflects discriminatory practices.

## **LIMITATIONS AND GAPS**

Overall, the empirical literature on monopsonistic gender wage discrimination demonstrates that imperfect competition in the labor market can account for a substantial part of the unexplained gender wage gap. That said, existing studies identify the wage elasticity of workers' labor supply to the single employer from the wage sensitivity of workers' job separations. Since job separations depend on workers' wages relative to the wages they could earn at alternative employers, these studies are prone to missing relevant worker or workplace characteristics related to workers' alternative wages, and may therefore provide biased estimates of workers' wage elasticities.

In addition, there is still a lack of compelling evidence that gender differences in workers' wage elasticity actually *cause* gender differences in wages. In other words, it is not clear whether employers actually exploit their different monopsony power over workers or whether, for example, labor market institutions, such as collective bargaining or worker codetermination, prevent employers from doing so.

Moreover, existing studies have not yet been able to pin down *why* men and women differ in their wage elasticities. Admittedly, there exists suggestive indirect evidence that more domestic responsibilities and worse search prospects of women play a role. Yet decisive evidence on the causes of the gender difference in the wage sensitivity of workers' labor supply to a single employer is still missing.

## **SUMMARY AND POLICY ADVICE**

A growing number of international studies have recently found that imperfect competition in the labor market can account for a large part of the unexplained wage gap. In imperfect



labor markets, employers can save on labor costs by engaging in monopsonistic wage discrimination against women who are less sensitive to wages when supplying labor to a single employer. Since this kind of wage discrimination raises employers' profits, employers have a strong incentive to engage in such discriminatory practices. For this reason, monopsonistic gender wage discrimination is likely to be widespread and to persist in the long term—even in the absence of prejudices against women.

Fighting monopsonistic gender wage discrimination, in turn, requires policymakers to prevent employers from following these incentives to discriminate against female workers. One way of reducing monopsonistic discrimination could be the implementation of equal pay legislation. If gender wage gaps were the result of employers' more pronounced wage-setting power over women, enforcing equal pay is expected to raise women's relative wages to men without harming their employment, as doing so simply removes wage differences unrelated to worker productivity. This expectation clearly contrasts with competitive labor market theory where wages reflect worker productivity, and such wage rises are expected to harm women's employment. Remarkably, the introduction of the Equal Pay Act in the UK in the 1970s substantially raised women's relative wages without detrimental effects on their employment, and thus arguably lowered employers' monopsony power over women [11].

Yet whereas equal pay legislation may be helpful to some extent, it does not eliminate employers' incentive to engage in discriminatory practices. For this reason, it is unlikely to completely remove monopsonistic gender wage discrimination on its own. To reduce monopsonistic discrimination effectively, policymakers should also address the likely sources of women's limited wage sensitivity when supplying labor to a single employer. Removing obstacles to employer competition for female workers includes many "non-controversial" policy options. To name but a few, fighting monopsonistic discrimination could involve providing additional and better childcare or enforcing more flexible working time arrangements. Such changes are likely to reduce the impact of domestic responsibilities on women's supply decisions and to widen the scope of their job search, and would thus be expected to increase employer competition for female workers.

## Acknowledgments

The author thanks an anonymous referee and the IZA World of Labor editors for many helpful suggestions on earlier drafts. Previous work of the author (together with Thorsten Schank and Claus Schnabel) contains a larger number of background references for the material presented here and has been used intensively in all major parts of this article [4], [10].

## Competing interests

The IZA World of Labor project is committed to the *IZA Guiding Principles of Research Integrity*. The author declares to have observed these principles.

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### Further reading

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