Wage Transparency and the Gender Pay Gap
A Survey
Bennedsen, Morten; Larsen, Birthe; Wei, Jiayi

Publication date:
2022

License
Unspecified

Citation for published version (APA):

Link to publication in CBS Research Portal
Wage Transparency and the Gender Pay Gap: A Survey

Morten Bennedsen
Birthe Larsen
Jiayi Wei
Wage Transparency and The Gender Pay Gap: A Survey

Morten Bennedsen

Birthe Larsen

Jiayi Wei

February 15, 2022

Abstract

We survey the small but growing literature on how wage transparency affects the pay gap between men and women in comparable jobs. Pay transparency reforms are implemented in many countries and we categorise these policy reforms according to their content and coverage. Evidence from Denmark, Canada, and UK document that transparency reforms causally reduce the gender wage gap. The main channel is through reducing the growth of male wages and less through increasing female wages. Finally, we discuss implementation costs related to the different categories of policy reforms.

KEYWORDS: Wage Transparency, Gender Pay Gap, Policy Reforms

JEL Codes: J16, J31, J38

1 We thank JiYoung Kim, Aremis Chung, Maithili Dipak Modi, Jihye Jang, and Mengqi Li for excellent research assistance. We also thank our co-authors for use of published articles and working papers and seminar participants at Copenhagen Business School, INSEAD and University of Copenhagen. We are grateful for financial funding from the Danish National Research Foundation (Niels Bohr Professorship) and the Danish Finance Institute.

2 Niels Bohr Professor, University of Copenhagen, and André and Rosalie Hoffmann Professor, INSEAD. Email: morten.bennedsen@insead.edu.

3 Copenhagen Business School. Email: bl.eco@cbs.dk.

4 INSEAD. Email: Jiayi.wei@insead.edu.
1. Introduction

Differences in wage categories based entirely on gender exist in most countries around the world. In 2018 Eurostat estimated the gender wage gap to vary from 3 pct in Romania to 22.7 pct Estonia, with an average level of 14.8 pct for the 27 member countries of the European Union. In the United States, women earn between 80 and 82 cents per hour for every dollar made by a man (Bennedsen et al. 2018). The American Association of University Women has estimated that black women on average earn 63 pct of what white men make, native American women bring home 57 pct, and finally, Hispanic women only make slightly above half of white men’s earnings, namely 54 pct.

Purely gender based pay inequality is not fair and many governments and supranational institutions have proposed reforms and policy agendas to reduce or eliminate it. Central to these reforms is transparency about gender-based wages in firms, public organizations, industries and countries. An underlying theme behind such initiatives is that more wage transparency in itself reduces the existing gender wage gap and potentially also increases labour productivity. In this survey, we investigate the research and policy-based literature on the effect of increased wage transparency on the gender wage gap and other outcomes including labour absenteeism, social equality, and labour productivity.

Underlying the notion that wage transparency can reduce the gender wage gap is the premise that salary information, in general, is undisclosed. This is confirmed in multiple studies. For example, the Institute for Women’s Policy Research’s study on wages finds that, in general, private sector employers in the US try to control access to wage information. In the survey, around 60 pct of employees in private companies report that wage and salary information is confidential. About half of all employees state that the discussion of wage and salary information is either discouraged or prohibited and/or could lead to punishment. Given the general lack of transparency in wages, it is clear that they also lack transparency on gender-based differences in wages. In the public-sector, information about wages is more transparent but only a few governments provide gender-based wage information. (Institute for Women’s Policy Research, 2014).

Academic research extracts evidence about the impact of transparency on gender wage gap and more generally on wages and labour productivity through analysing country specific policy reforms or by conducting randomized controlled experiments. The extension and coverage of such reforms vary significantly across countries and time.
We mainly zoom in on EU countries because we have detailed evidence for both benefits of transparency and the cost of implementing policy proposals. EU has categorized policy programs into five categories that differ in the amount of information required and to whom and under what circumstances information is given.

We survey the young and growing literature that use policy reforms to measure the impact of transparency on the gender wage gap. Our main insight is that several recent studies show that increased transparency causally reduce the gender wage gap. It is documented in Denmark, Canada and UK that policy reforms that provide more transparency has caused the gender wage gap to be reduced. In addition, these studies also document that the effect is mostly through a stall in men’s wage increase than because women get higher salaries.

Beyond closing the gender wage gap, wage transparency has also been shown to motivate lower income groups to find better jobs, help firms with building better public image, aid governments with detecting tax evasion, and it may even promote the working efficiency of certain groups of employees.

Academic literature ignore completely the implementation costs of transparency reforms. Thus, even though our survey confirm that transparency reforms decrease the gender wage gap it is suspicious to use this conclusion as a policy advice without discussing the implementation cost of transparency reforms. The costs involved are not insignificant. Specifically, it increases the administrative cost burden on employers, reduces working proficiencies or well-being levels of some employees due to unnecessary peer comparisons, gets in conflicts with the privacy laws in certain countries or violates cultural norms where people are reluctant to talk about salaries ("salary taboo").

The rest of this survey is organized as follows: We provide a brief introduction to the literature on how to measure the gender wage gap in Section 2. In Section 3, we describe some of the policy reforms that have been implemented to increase gender wage transparency. In Section 4 we discuss research-based evidence for the impact of transparency. The first part focuses on the impact on the gender wage gap. The second part focuses on broader implications of wage transparency. In Section 5 we summarize evidence for the cost of implementing wage transparency reforms.
2. Measuring Gender Wage Gap

As mentioned in the introduction there is a consensus about the existence of gender-based differences in wages in most countries around the world. In short, men earn more than women for comparable jobs.

This raises the question of how to measure gender-based differences in pay? What if men and women have different jobs? And, how do we control for important characteristics that both are correlated with wages and gender such as work hours, tenure and education? In this section, we provide a short introduction to the measurement of the gender wage gap. In parts, we follow Plantenga and Ramery (2006) closely.

The gender pay gap refers to the differences between the wages earned by women and men in comparable jobs. On the surface this sounds like a clear and uncontroversial definition; however, taking this definition to data is less straightforward. We highlight three fundamental challenges here.

The first challenge is to define the appropriate wage concept. In order to take differences in working hours and the impact of the income tax system into account, most estimates are based on differences in gross hourly wages. The gender pay gap is then calculated as the ratio of women’s average gross hourly wage to men’s average gross hourly wage. Alternatively, as the difference between men’s and women’s gross hourly wage as a percentage of men’s average gross hourly wage.

The second challenge is how to define comparable jobs. It is common to adjust the pay data for differences in job characteristics. Therefore, to make a more reasonable comparison, researchers introduce variables such as industries, occupation codes and firm size. But there is an ongoing debate regarding whether gender differences in these variables are pure productivity differences or are partly driven by discrimination itself. As already mentioned by Oaxaca (1973: 699), the controls for occupation “eliminate some of the effects of occupational barriers as sources of discrimination. As a result, we are likely to underestimate the effects of discrimination”. On the other hand, the level of discrimination may be overestimated if not all productivity related variables are included. In sum, most studies do indeed control for industry, occupation, and firm size.

Finally, the third challenge is to control for individual characteristics and individual choices that are correlated with productivity. These can be education or job-tenure. Some studies go beyond these basic individual traits and include family structures and
compositions and variables such as having children, being married or divorced etc. The extent to which such variables are purely productivity related or if they also reflect outcomes of discrimination is still unclear. Where to draw the line between variables that should be in or out of the regression is debatable.

In practice, the literature has developed from the influential papers by Blinder (1973) and Oaxaca (1973). As a starting point, researchers introduce a gender dummy in a standard wage regression model. This dummy captures both the effects of gender but also everything that has not otherwise been controlled for. Following Blinder/Oaxaca, the gender gap is then decomposed into an explained and an unexplained part. In this procedure, as a first step, wages are estimated separately for men and women. The total wage differential between men and women can then be decomposed into an explained part $E$ due to differences in characteristics and an unexplained residual $U$, often referred to as the discrimination effect, which is due to both unobservable differences and the differences in rewards for identical characteristics. Discrimination in this approach is thus defined as the difference between the observed ('unadjusted') gender pay difference and the gender pay difference that would prevail if men and women were paid according to the same criteria (see Rice, 1999; Rubery et al., 2002; Weichselbaumer and Winter-Ebmer, 2005).

Given the challenges in estimating the explained and unexplained part of the gender wage gap, it is not surprisingly that estimates of the gender pay gap differ widely, depending on the data available, the specific sample, and the method used. For instance, we mentioned in the introduction that Eurostat has estimated an average gender wage gap of 14.8 pct with wide differences across the European countries. Figure 1 illustrates these differences. The largest gender wage gaps are identified in Estonia, Germany, Check Republic and United Kingdom, whereas the lowest gender wage gaps are observed in Romania, Luxembourg and Italy.
Research has documented that sorting between jobs is an important factor to explain the gender wage gap. For instance, Palladino et al. (2021) documents that firm pay premiums contribute meaningfully to the gender wage gap and that this is largely driven by sorting women into lower paying firms rather than within firm gender differences in pay premiums.

There is now a consensus of studies that document the stagnation of the reduction in the gender wage gap since 1980. Studies have shown that there has been a clear reduction in the gender wage gap from World War Two (WW2) to the 1980s in most countries. However, the reduction in the gender wage gap has stalled since - this is documented in several studies, among other the Weichesbaumer (2005) survey in this journal. The US gender pay ratio also caught up other OECD countries during this period, climbing from 62.5 pct (US) vs. 71.2 pct (other OECD) around 1980 to 76.3 pct vs. 77.8 pct around 1998. The narrowing in the U.S. gender pay gap decelerated in the 1990s.

While the precise estimate of the unexplained part of the gender wage gap differs across countries, time, data samples and research methodologies, there are some general insights that are worth underlining. First, the explained and unexplained gender wage gap exist in all countries. It varies across countries and regions, being lowest in some Eastern European countries and Scandinavia. Second, from a long run perspective, the gender wage gap has been reduced after WW2, but the narrowing of the gender wage
gap has stalled in the last decades. In particular, several studies have shown that a large chunk of the gender wage gap is explained by women working fewer hours – especially women who have families and kids (Gallen et al., 2019). However, the unexplained gender wage gap is still significant and the size has been almost constant in many countries since the 1980s. (Børnheim et al., 2020; Gallen et al., 2019). Third, the gender wage gap in most countries is significantly lower in the private sector than in the public sector. Fourth, in comparison to a random sample of the total population, the gender pay gap is much lower if only a sample of new entrants in the labor market is investigated; the gender pay gap thus tends to widen with age. Finally, personal traits matter for the size of the gender wage gap, for instance it is lower for single women than for married women.

3. Types of transparency reforms

Putting an end to pay disparity between genders is long pursued by many countries across the world. And yet, to date, only a few countries are ultimately achieving equality in this area. In this Section, we provide a short overview of recent policy reforms.

Government-mandated reporting of gender pay discrepancies has been a subject of much debate. Governments often propose transparency as a tool to encourage firms to reduce the wage gap between men and women. Unions and employee groups representing women also seem to believe that secrecy on pay contributes significantly to unequal pay for women. Opponents of pay transparency argue that disclosing gender pay information comes as a challenge to firms as it lacks practical utility, increases administrative burden and violates employee privacy. Until recently, there has been no strong evidence to support either side.

Academic research extracts evidence about the impact of transparency on gender wage gap and more generally on wages and labour productivity through analysing country specific policy reforms or by conducting randomized controlled experiments. Transparency in wages can take many forms, thus in practice, policy reforms can vary significantly, and it is often hard to extract the external validity of controlled experiments. As we will see in the next sections, even though academic research can provide evidence on the impact of transparency on wages, general policy recommendations from these studies is challenging.
We focus on EU countries (and Canada and UK) because we have detailed evidence for both benefits of transparency and the cost of implementing policy proposals. This is discussed further in Section 5. In the present section, we survey the content of policy reforms.

EU Pay Transparency Program launched back in 2014 with the purpose of promoting pay transparency and decreasing pay gaps among different groups. Both “equal pay to equal value work” (Article 4 of the Directive 2006/54/EC) and Commission Recommendation directive 2014/124/EU completed in 2014 are targeted at the fulfilment of these goals. Before the implementation of the policy in 2014, EU’s average gender pay gap remains around 14.1 pct. While the number for United States is around 21.4 pct and Canada 13.8 pct during the same period.

EU has categorized policy programs into five Categories that differ in the amount of information required and to whom and under what circumstances information is given.

Category 1: Right to (request) information on pay for same category of work - individual request. This is considered the weakest category, because it is up to individual employees to request information.

Category 2: Regularly inform employees, workers’ representatives and/or social partners of the average remuneration by category of employee or position, broken down by gender. This category requires employers to provide information on a regular basis.

Category 3: Obligation to organize pay audits on the number of men and women (overall and as per categories of employees), the gender pay gap (overall and as per categories of employees) an analysis of the job evaluation and classification. This category is stronger than Category 2 because it involves an external auditing process.

Category 4: Social partners obliged to bargain over pay equality. This means that the information is both provided and used for negotiations between employers and employees.

Category 5: Proposals that prevent gender pay gap to arise. These are cases such as providing information at job hiring interviews about salary levels for men and women. This category has a different dimension than the other four categories, because it aims at preventing gender wage gap to develop and not to reduce or remove existing gender wage gaps.

This “preventing” strategy has both benefits and costs. The application range of this Category is rather limited due to its violation of “salary taboo” and privacy protection
law in some specific countries. Besides, unlike Category 3, it doesn’t provide employees with opportunities to learn about intrinsic reasons (ability, experience, skills, etc.) that cause real structural salary differences among peers. However, the upside is also significant.

On the bright side, it prevents salary discrimination from happening from the very beginning. In some countries, taking United States as an example, the National Labor Relations Act contains a provision that gives all employees the right to "engage in concerted activities", including the right to discuss their terms and conditions of employment with each other. The Equality Act 2010 in UK also outlines that it is unlawful to prevent employees from disclosing a difference in salary if they are trying to understand whether it is an equal pay issue between male and female workers that exists. Such policies provide a solid foundation for carrying out of Category 5 which makes salary transparent to all. Making salary information public greatly reduces the possibility of a gender pay gap forming during the discreet salary negotiation process.

Next, we describe some country specific reforms, focusing on those that have been analysed in academic research.

**Austria:** In 2011, two mechanisms have been implemented to promote pay transparency in Austria: (1) to state the minimum wage in job vacancy advertisements and (2) to present income-reports for companies employing a pre-determined number of workers. This reform would mostly fit into Category 5 above. Its primary goal is to avoid gender-based wage gap during hiring process and, to a lesser extent, to eliminate existing gender wage gaps.

**Canada (2018):** In Canada, there have been several pay transparency reforms during the last decade. For the entire labor market, there is a Pay Transparency Act recently introduced in Ontario that: (a) requires all publicly advertised job postings to include a salary range, (b) prohibits employers from asking about past compensation, and (c) mandates that employers report gender earning gaps to the Province. This reform would be in both Category 2 and 5 above and is pending the final approval in the parliament.

On regional levels pay transparency reforms for university employees have been rolled out. In 1996, British Columbia, Manitoba and Ontario implemented the first reforms. In each case, the government mandated disclosure of all university salaries exceeding a certain threshold—$50,000 in British Columbia, $50,000 in Manitoba, and $100,000 in Ontario.

**Denmark (2006):** The Equal Pay Act was agreed upon in 2006 and implemented from 2008. Employers with at least 35 employees should provide gender-disaggregated pay
statistics for groups of minimum 10 persons of each gender with the same function to
the employee representative. Alternatively, employers can agree with employees to
draw up a report on equal pay, describing factors and initiatives (for a period of 1-3
years). Lack of compliance may result in fines.

**Germany (2017):** In 2017, Germany adopted The Transparency Pay Act. The
government implemented a gender wage transparency reform in which, an employee in
workplaces with more than 200 employees has the right to information. This right
means that individual employees have the right to receive specific wage information
for a group of colleagues with opposite gender and same type of work or who works
with the same value. It is estimated that 40 pct of the female labour force has this right.

The law adds, in particular, a procedure for individuals to obtain information on pay
levels (for employees in companies with 200 employees and more). It also adds an
obligation for companies with 500 and more employees to report the gender pay gap
and measures on equality between men and women and to tackle gender discrimination.
Finally, the law includes an optional clause for companies with 500 and more
employees to carry out a pay audit, setting out some minimum procedures in the case
that it is carried out.

**Great Britain (2017):** Employers with more than 250 employees must publicize
statistics on how men and women are paid on average. To be specific, employers must
report the gender-based difference in average and median hourly wage and average and
median bonus. This reform covers 41 pct of all employees in the labour market.

**Iceland (2015):** Workplaces with at least 25 employees are obliged to achieve a wage
equality certification. This certification documents that they pay the same wage for the
same kind of work and for work of the same value. Work of same type and value is
determined through employers, and they are obliged to classify all work tasks against
each other. Around 2/3 of the labour market is covered by this law.

These country examples reveal that the focus varies across countries. Germany and
Iceland emphasize that there shall be equal pay for work of same value. In Great Britain,
the motivation is to create equal pay within a generation. In Iceland, the certification
process focuses on trying to make pay equal in practice and not just documenting
whether or not there exists a gender pay gap.

**Eurofound Survey (2021) has compared the reforms across the EU member countries.**
In summary, many reforms belong to Category 1 and 2 above by either giving
individuals right to get information or demand employers to deliver this information.
This include reforms in Denmark, Austria, Germany, Spain, France, Italy, Finland and
Czech Republic. Stronger reforms are implemented in Iceland with a certification process. Aspects of Category 4 can be found in reforms in Denmark, France, Italy, Portugal and Netherlands.

To sum up, we highlight the key issues in designing gender wage transparency reforms.

First, whether the reforms focusing on collective or individual rights. For instance, the certification process in Iceland and the reforms in Denmark and UK require all employers meet the defined standards to publish transparency information. On the other hand, the reform in Germany is criticized for putting the responsibility on the individual employees who need to take action to receive information.

Second, the threshold value for number of employees. Threshold values vary across reforms. From 25 employees in Iceland to 250 employees in UK. Arguments for a high threshold value often include that in small firms the implementation cost is too high, that it is impossible to estimate relevant metrics for gender-based wage comparison and that it is impossible to preserve individual data protection as required by law. Arguments for lower threshold values are often centring on having the biggest possible share of the labour market covered by the reforms.

Third, voluntary or compulsory reforms. Historically, most gender wage transparency reforms have been voluntary. This in general means low participation rate. Thus, the novel reforms described above are all compulsory.

Fourth, defining comparison groups. In all types of reforms, there is an element of comparing gender-based wages across groups of workers with the same type of job or jobs of the same value. As we saw in the previous Section it is complicated to measure the real gender wage gap and there is significant discretion in what to control for and what the right counterfactuals are. Moreover, this must be done within a single workplace.

4. Research based evidence on the impact of transparency:

In this Section, we survey the academic literature on how transparency in wage setting impacts the gender wage gap. A young and recent literature has evaluated policy reforms in different countries to understand to what extent these reforms have been able to reduce the gender wage gap. Beyond these specific studies there is a broader labour literature of the consequences of more transparency on wages in general and on labour productivity. We begin with the specific studies.
4.1: Evidence of transparency on the gender wage gap

Bennedsen et al (2022) is the first to analyse the impact on transparency on the gender pay gap. They analyse the 2006 Act on Gender Specific Pay Statistics in Denmark which requires companies with more than 35 employees to report on gender pay gaps. The paper use difference-in-differences estimation and compare pay data for companies with 35-50 employees who are firms that must report wage data to a control group of non-reporting firms of similar size with 25-34 employees.

It is shown that from 2003 to 2008, the gender pay gap at mandatory reporting firms shrank 7 pct, from 18.9 pct to 17.5 pct, while the gap at control firms stayed steady at 18.9 pct. These findings suggest that governments can indeed take effective steps to address gender wage disparities by making it mandatory for firms to provide data showing discrepancies in gender pay.

The study also revealed a number of additional effects. It increased the number of women being hired, indicating that the supply pool of female employees increases as gender pay transparency improves. It also increases the number of female employees being promoted from the bottom of the hierarchy to more senior positions.

Wage transparency is not without cost, however. All employees’ remuneration increased during the period, but the wages of men working in mandatory reporting firms increased by less than those in the control group. Furthermore, mandatory reporting firms experienced a significant 2.5 pct decline in productivity relative to the control group. However, by the end of the analysed time window, the mandatory reporting firms’ overall wage bills were 2.8 pct lower than those of the control firms. Thus, the decline in productivity is fully offset by the saved wage cost, i.e., the increased transparency did not impact firms’ net income.

Transparency had a greater impact on the wages of low and intermediate level employees and had no significant effect on the pay of managers at the top of the corporate hierarchy. Low-level female employees in firms that reported their gender pay gap were also more likely to get promoted to higher levels after the passage of the law. Furthermore, mandatory reporting companies hired 5 pct more women in the

---

intermediate and lower hierarchy levels than the control firms, suggesting firms are able to attract more female employees in positions where they offer fairer compensation.

The study identified specific mechanisms that increased the impact of transparency. First, the improvement in the pay gap was most prevalent in firms where male managers had more daughters than sons. In these companies, female wages rose 5 pct more than the rest of the mandatory reporting group, closing the gender pay gap by a further 2.4 pct – further support for an argument that men with diverse home lives are more progressive about bringing diversity and equality into the workplace. Second, industries which had higher disparities in pay between men and women prior to implementation the laws saw a greater shrinking of the gender wage gap.

The authors provide additional evidence for a causal interpretation of the results. First, they estimate the effect of the law by year and find no evidence of pre-treatment trends. Second, they explore whether a contemporaneous factor other than the aforementioned law drives the results. Third, they find no significant effects in placebo tests using alternative employee size cut-offs to define treatment and control groups. Finally, they use hourly wages as a compensation measure to secure that the results are not driven by gender differences in hours worked.

In sum, the evidence from Bennedsen et al (2022) confirms that wage transparency reduces the gender wage gap. It is worth remarking that that the Danish reform is relatively small and in addition Denmark has a strong record on supporting women in the workforce even prior to the reform. Thus, it is possible that a mandatory wage transparency reform covering all firms would provide even larger reduction in the gender wage gap as would reforms in other less egalitarian countries.

The evidence from the Danish policy reform has been confirmed by a similar study on the pay transparency reform in Canadian Universities, in Baker et al (2022). As described in Section 3, the Canadian public-sector university transparency laws enable public access to the salaries of individual faculty if they exceed specified thresholds. These laws were introduced at different times in different states. The author use detailed administrative data covering the majority of faculty in Canada, and an event-study research design that exploits within-province variation in exposure to the policy across institutions and academic departments.

The setting using academic faculty is ideal for this topic as gender gap has always been pervasive in academic institutions in Canada. For example, only 36 pct of associate professors and 22 pct of full professors are women, albeit they account for half of all
assistant professors (Council of Canadian Academies, 2012). In terms of salary, with experience and other individual characteristic factors controlled, men’s salaries are higher at all faculty ranks (Boyd et al., 2012). Similar to the Danish evidence, Baker et al (2022) finds that the transparency laws in Canadian Universities reduced the gender pay gap between men and women by approximately 20-40 pct.

Blundell (2020) studies the impact of the 2017 UK pay transparency reform, in which employers are mandated to publicly report simple measures of their gender pay gap each year. This means that each year since 2018, more than 10,000 UK firms have been required to disclose publicly their gender pay gap and gender composition along the wage distribution. Following the earlier papers discussed above, the author identifies a discontinuous size threshold in the policy’s coverage and applies a difference-in-differences strategy using linked employer-employee payroll data. The results confirm that pay transparency reduces the gender wage gap. He finds that the introduction of reporting requirements led to a 1.6 percentage point narrowing of the gender pay gap for affected employers. This is equivalent to approximately a 20 pct reduction in the wage gap and thus consistent with the evidence from Denmark and Canada. Again, it is noted that the effect is primarily due to a decline in male wages within affected employers. However, the author does not find any evidence for a change in the composition of the workforce.

More details of the impact on the UK transparency reform on the gender wage gap is provided by Duchini et al. (2020). They also test the impact of the transparency reform using difference-in-differences strategies and confirm that the policy reform reduced the gender wage gap with 15 pct through reducing the growth of male wages. In addition, they find that pay transparency increases women's probability of working in above-median-wage occupations by 5 pct compared to the pre-policy mean.

The authors investigate deeper into the impact on hiring by combining the register data with textual analysis of job listings. This provides suggestive evidence that treated firms adopt female-friendly hiring practices in ads for high-gender-pay-gap occupations. Finally, they show that the public posting of firms that do worse on gender wage gap has a strong impact on reputation. Moreover, publicly listed firms experience a 35-basis-point average fall in cumulative abnormal returns in the days following their publication of gender equality data.

To sum up, there is now a broad body of evidence from Denmark, Canada and UK confirming that pay transparency shrinks the gender wage gap. It is important to notice that the evidence shows that the gender wage gap falls due to a decrease in the growth of male wages and not due to an increase in the growth of female wages.
As we discussed in Section 3, policy reforms vary in design and target groups across countries. Thus, it is remarkable that the evidence from all three countries seem to be consistent with each other. However, given the variety of reforms across countries, it is not a given that all reforms reduce the gender wage gap. This is confirmed by two studies on the Austrian pay transparency reform. In 2011, Austria introduced a gender pay transparency law requiring companies with more than 1,000 employees to inform their workers about the average pay for each gender and employment group. Firms with 500, 250 and 150 employees were subject to this requirement in later years. In two very similar papers, Boheim et al. (2020) and Gulyas et al. (2020), also use a difference-in-differences methodology to estimate the effect of the Austrian reform. Neither paper finds any significant impact of the Austrian transparency reform in reducing the gender wage gap nor on any other labor composition outcomes. One reason for this could be that the Austrian reform does not require any public announcement of the gender wage composition.

4.2 Evidence of transparency on wage setting and productivity:

Beyond the specific impact of pay transparency on the gender wage gap, research in labour economics has studied the impacts of pay transparency on other labour market outcomes.

Gomez and Wald (2010) evaluate the impact of the Public Sector Salary Disclosure Act in the province of Ontario. They find that salaries of university presidents in the province increased 2.5 pct after disclosure relative to the average public-sector salary. The disclosure also led to higher growth in average professorial salaries in Ontario relative to other provinces.

In a field experiment paper, Cullen and Perez-Truglia (2018) studied a multibillion-dollar corporation with 2,060 employees which reports salaries of peers and managers. They find a strong incentive effect on labour effort: higher perceived peer salary lowers employee effort. However, higher perceived manager salary increases employee effort. Employees tend to spend 4.3 pct more hours in the office, send 1.85 pct more emails, and sell 4.4 pct more when they learn about their managers’ salaries. And this effect becomes even more significant when they are only a few steps away from a managerial position.

Similar results are found in Breza et al. (2018). They find that the ability of Indian manufacturing workers to learn about their peers’ salaries led to lower productivity.
The effect of transparency on pay equity is studied in Mas (2017). This paper exploits a law change in California which required online disclosure of municipal salaries. Mas finds that the increased transparency induces a significant compression in salaries. Among top managers, disclosure led to approximately 7 percent average compensation declines. Mas contends that there are mainly two underlying reasons for pay transparency policy changing compensation structure in organizations, namely (1) greater accountability and (2) public aversion to salaries perceived as excessive. Cullen and Pakzad-Hurson (2019) develop a dynamic bargaining model and test the equilibrium predictions regarding the introduction of pay transparency using data from an online labor market. They find that higher transparency lowers wages on average, but leads to less wage dispersion across workers.

A few studies focus on examining the connection between pay transparency and well-being. Card et al. (2012) use a randomized information experiment to show that pay transparency reduced the well-being of university faculty in departments where they earned below median pay in California. For staff or faculty whose salaries are lower than the median in their unit and occupation, the point estimate for their happiness index is -6.3, which implies a 1/10 of a standard deviation shift in index relative to control groups.

Similarly, Perez-Truglia (2020) finds a reduction in well-being following a reform in Norway that made the entire population’s tax records publicly accessible online. Using the accessibility of Norwegian tax records as a natural experiment setting, Prez-Truglia (2020) finds that pay transparency significantly cause a 29 pct increase in the income-based happiness gradient and 21 pct increase in the income-based life satisfactory gradient based on a study carried out in Norway.

5. Implementation costs of pay transparency policy reforms:

In Section 3 we briefly introduced examples of pay transparency reforms and outlined the categorization of reforms within the EU. In Section 4 we surveyed the academic research that has used these reforms to analyse the implications of transparency on the gender pay gap. However, academic research often ignores the cost of implementing pay transparency reforms. Costs can take a variety of forms from setting up administrative systems to measuring wages, making reports and arranging informational meetings and channels. Costs can be levied on firms, employees and institutions such as employer organizations. In this Section, we briefly discuss implementation costs related to the different EU pay transparency categories.
**Category 1: Right to (request) information on pay for same category of work-individual request**

Category 1 entails employees to enable employees to ask for anonymous income information of same working level and employers’ explanation for differences in pay. Under this condition, employers would need to provide information on pay levels by different levels of employment. Intuitively, employees would gain more rights in the job market and become more capable of making transparent and equal conversations with employers concerning income, which is the benefit brought by Category 1. However, getting to know peers’ or colleagues’ income levels may dispel workers’ enthusiasm for the job due to unnecessary comparison, which may further lead to efficiency reduction of employees (Breza et al., 2018; Perez-Truglia, 2019; Card et al., 2012; Cullen et al., 2018), inviting in potential cost for firms. Studies supporting this statement claims that relative ranking of salary among peers, rather than absolute values of income, is more influential in determining people’s self-valuation. Therefore, a higher level of pay transparency are likely to induce unnecessary peer pressure or stress and further severely affect actual work utility or subjective well-being level (Kandel and Lazear, 1992).

**Category 2: Regularly inform employees, workers’ representatives and/or social partners of the average remuneration by category of employment or position, broken down by gender**

Category 2 requires employers to report salaries on an annual basis or to inform employees, other stakeholders and social partners about the pay level or pay structure of firms. This obligation would cause direct administrative and compliance costs and indirect costs for evaluating “equal work” and building up systems to protect employees’ income information privacy. To be more specific, the administrative costs can be divided into two separate parts, namely the first-time costs when starting the pay reports program and the annual costs for yearly iterations thereafter.

From the employers’ perspective, the measures of making pay reports inevitably increase the administrative burdens through prolonging the administrative and compliance chains, including equality plans, salary records, pay audits, complaints dealing, etc. Since there are significant fixed costs in setting up these systems, medium smaller firms will have an extra burden in building pay audit systems, hiring external experts and making pay reports.

Costs of implementing Category 2 policy reforms include:
- Cost of extra salary paid to administrative staff to collect and collate salary data.
- Compliance costs including equality plans, salary records, pay audits etc.
- Cost of hiring external experts for analyzing data and forming reports.
- Cost of developing and upgrading software for evaluating gender pay gap.
- Cost of training.

For the Category 2 reforms, there exist a number of country specific estimations of implementation costs. Veldman (2017) summarized in an EU cross-country analysis report that United Kingdoms, Cyprus, Spain, Hungary and Germany all suffered from administrative burdens or costs caused by pay transparency measurements.

First, the Swedish Agency for Public Management (the Government’s organization for analysis and evaluations of state and state-funded activities) estimated the yearly cost for pay audits to be SEK 800 (80 euro) per employee in 2011. A government report estimated the yearly cost for pay audits to be SEK 230 (23 euro) per employee in small companies. For companies with more than 500 employees, the corresponding number was SEK 60 (6 euro) (EU Equal Pay Studies).

Second, in Germany it is estimated that firms that live up to the 2017 reform, spend around 100,000 EUR on hiring external experts. It is also estimated that it takes around 45 man-hours to collect and analyse the relevant wage data (EU Equal Pay Studies).

In a survey of Austrian firms, the time for pay reports is estimated to be on average 90 minutes for information gathering, 180 minutes for calculation, 120 minutes for preparing reports, and 20 minutes for sending reports to working councils or making it accessible for all employees, which adds up to 7 hours per company (EU Equal Pay Studies).

One big challenge deriving gender based pay data is to define “equal work”. Based on the definition, equal value of work refers to “employees who perform substantially the same kind of work which requires same kind of skills, efforts and responsibilities in the same establishment under same working conditions.” (Equality and Human Rights Commission). We saw in Section 2 how this is done in the academic literature but that is not an option for an individual firm. In praxis, firms will be guided to use some form of ISCO code categorisation. This is easiest to do in large firms but will be challenging for small and medium sized firms due to the lack of individuals of both gender when work group definitions are too narrow.
Category 3: Obligation to organize pay audits on the number of men and women (overall and per category of employee), the gender pay gap (overall and per category of employee) & an analysis of the job evaluation and classification

For a start, Category 3 requires at the minimum firms to produce same kind of pay reports as in Category 2. In addition, firms need to deliver information and reports to independent auditors to conduct an in-depth analysis of the information on pay levels and pay differentials by gender on aspects such as the proportion of women and men in each category of employees doing the same work (or work of equal value), on the gender neutrality of job evaluation and classification systems used and on the determinants of pay differentials.

Category 3 differs from Category 1 and 2 such that, it not only provides information on gender relevant items but beyond that also puts more focus on providing criteria used to establish pay systems and explaining differences in pay.

Category 3 already pays attention to gender equality by making information available to workers’ representatives at the company level as well as to labour inspectorates or equality bodies upon request. Additional costs arise from the chosen auditing or certification processes. In addition, more information also implies that it is more likely to be used in legal actions. Thus, costs of legal actions will be part of the cost of implementation Category 3 programs. In some countries, Denmark as an example, the government has decided that employees do not pay charges for bringing a complaint before the Equal Treatment Board. However, there are still several countries that charge the party who failed to win. In sum, the cost of bringing equal pay claims which tend to be complex and very long (over 10 years to resolution in several cases) mean that even better-off individuals may be unable to pursue litigation. (EU Equal Pay Studies).

Category 4: Social partners obliged to bargain over pay equality

In this Category, pay equality is discussed during salary and job negotiations. It serves also as a preventive procedure, which may effectively reduce the rise of gender pay gaps and hence lower the occurrence probability of disputes concerning income. For this reason, there is an overlap between Categories 4 and 5.

Requiring corrective measures for equal pay to be included in the collective bargaining agenda and making analysis of job evaluation (grading systems) for gender bias will raise the costs of human resources in charge of negotiating and making fair salary. It puts more pressure on social partner groups, making them consume more energy and time to establish pay principles and solve payment dissatisfaction cases.
As we have seen above, the coverage and complexity of pay transparency programs across EU countries vary significantly. This implies that the cost born by different stakeholders are difficult to compare. However, there are some general observations. The main stakeholders include the national administration, workers, social partners, and firms.

From the perspective of national administration, Category 3 is relatively cost-heavy as they need to draw up standards for pay audit reports. For employees, the legal proceeding costs remain stable across different levels, while the costs for acquiring and gathering salary information is significantly higher in Category 1 than in Category 2 and Category 3 - where standard information is provided on a yearly basis. Social partners including workers’ representatives or unions, on the other hand, have more responsibility and thus higher costs in Category 3 and Category 4, since they are engaged directly with other parties. The main firm level cost has been detailed above. To sum up the cost analysis, the Eurofond Survey concludes that overall costs for implementing pay report measurements is relatively low for all involved.

6. Conclusion
The existence of the gender pay gap has generated an important debate both in academic studies and in political circles. Recently, governments around the world have proposed transparency as a tool to nudge firms to reduce the wage gap between men and women. As we have shown this is a key focus of the EU gender wage policy and there have been implemented many policy reforms aiming at increasing gender wage transparency both with in EU countries and in countries outside EU.

Empirically investigating the effect of gender pay transparency as a measure to reduce gender pay discrimination within firms is challenging because it requires finding both exogenous variation in transparency and detailed information on employee wages. A number of studies have focused on policy reforms in Denmark, Canada, UK and Austria. These studies derive causal evidence using regression discontinuity and/or difference in differences estimation comparing firms covered by a reform with firms not covered.

Our main insight is that several recent studies show that increased transparency causally reduce the gender wage gap. It is documented in Denmark, Canada and UK that policy reforms that provide more transparency has caused the gender wage gap to be reduced. In addition, these studies also document that the effect is mostly through a stall in men’s wage increase than because women get higher salaries.
Academic literature ignore completely the implementation costs of transparency reforms. Thus, even though our survey confirm that transparency reforms decrease the gender wage gap it is suspicious to use this conclusion as a policy advice without discussing the implementation cost of transparency reforms. The costs involved are not insignificant. Specifically, it increases the administrative cost burden on employers, reduces working proficiencies or well-being levels of some employees due to unnecessary peer comparisons, gets in conflicts with the privacy laws in certain countries or violates cultural norms where people are reluctant to talk about salaries (“salary taboo”).
Reference


National Labor Relations Act (1935) [https://www.nlrb.gov/guidance/key-reference-materials/national-labor-relations-act]


