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STICKY FLOORS OR GLASS CEILINGS? THE ROLE OF HUMAN CAPITAL, WORKING TIME FLEXIBILITY AND DISCRIMINATION IN THE GENDER WAGE GAP

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ABSTRACT/ RESUME

Sticky floors or glass ceilings? The role of human capital, working time flexibility and discrimination in the gender wage gap

Despite changes in social norms and policies, on average across 25 European countries, there remains a gap of around 15% in hourly earnings between similarly-qualified men and women. This raises inequality and limits growth by preventing women from reaching their full labour market potential. Using individual-level data, this paper quantifies the main drivers of gender wage gaps with a view to devising effective policies to reduce them. The findings suggest that, on average, “sticky floors” related to social norms, gender stereotyping and discrimination account for 40% of the gender wage gap, while the “glass ceiling” related to the motherhood penalty accounts for around 60%. The importance of the “glass ceiling” is especially large in most Northern and Western European countries, while “sticky floors” explain the major part of the gap in most Central and Eastern European countries. These results imply that most Northern and Western European countries need to prioritise policies to address the motherhood penalty, such as further promoting flexitime and telework and supporting early childcare. Most Central and Eastern European as well as Southern European countries, where “sticky floors” are more important, additionally need to prioritise equal pay and pay transparency laws, measures to address gender stereotyping, competition in product markets, as well as higher wage floors where they are currently low.

JEL classification codes: J16, J24, J78

Keywords: gender wage gap, motherhood penalty, discrimination

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Planchers collants ou plafonds en verre? Le rôle du capital humain, de la flexibilité du temps de travail et de la discrimination dans l'écart salarial entre les sexes

Malgré les changements dans les normes sociales et les politiques, en moyenne dans 25 pays européens, il subsiste un écart d'environ 15% de salaire horaire entre des hommes et des femmes de qualification similaire, ce qui augmente les inégalités et limite la croissance en empêchant les femmes d'atteindre leur plein potentiel sur le marché du travail. À l'aide de données individuelles, ce document quantifie les principaux facteurs des écarts de salaire entre les sexes en vue de concevoir des politiques efficaces pour les réduire. Les résultats suggèrent qu'en moyenne, les « planchers collants » liés aux normes sociales, aux stéréotypes de genre et à la discrimination représentent 40% de l'écart salarial entre les sexes, tandis que le « plafond de verre » lié à la pénalité de maternité représente environ 60%. L'importance du « plafond de verre » est particulièrement importante dans la plupart des pays d'Europe du Nord et de l'Ouest, tandis que les « planchers collants » expliquent la majeure partie de l'écart dans la plupart des pays d'Europe centrale et orientale. Ces résultats impliquent que la plupart des pays d'Europe du Nord et de l'Ouest doivent donner la priorité aux politiques de lutte contre la pénalité de la maternité, telles que la promotion de l'horaire flexible et du télétravail et le soutien à la garde des jeunes enfants. La plupart des pays d'Europe centrale et orientale ainsi que des pays d'Europe du Sud, où les «planchers collants» sont plus importants, doivent en outre donner la priorité aux lois sur l'égalité de rémunération et la transparence salariale, les mesures visant à lutter contre les stéréotypes de genre, la concurrence sur les marchés de produits, ainsi que les planchers salariaux plus élevés où ils sont actuellement faibles.

Classification JEL: J16, J24, J78

Mots Clés: écart salarial entre les sexes, sanction de la maternité, discrimination

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Sticky floors or glass ceilings? The role of human capital, working time flexibility and discrimination in the gender wage gap

By Gabriele Ciminelli, Cyrille Schwellnus, Balazs Stadler[1]

1. Introduction

1. Despite changes in social norms, policy reforms, and the introduction of equal pay and pay transparency laws, in most OECD countries hourly earnings of women continue to be lower than those of men with similar qualifications and experience (OECD, 2018[1]). Gender wage gaps raise equity concerns and may reduce overall economic prosperity, as low wages reduce incentives to participate in the labour market and invest in human capital.[2] The ongoing COVID-19 crisis highlights the urgency to address such concerns, with initial evidence suggesting that in a number of countries women may be bearing the brunt of the crisis in terms of higher unemployment and lower labour force participation (Alon et al., 2020[2]; Adams-Prassl et al., 2020[3]; Farré et al., 2020[4]; Lemieux et al., 2020[5]). Adverse short-term employment effects as women delay labour market entry or interrupt their careers may translate into negative long-term wage effects, potentially scarring a generation of female workers (Davis and Von Wachter, 2011[6]).

2. This paper quantifies the drivers of the gender wage gap across 25 European countries, which is a pre-condition for designing effective policies. The focus is on the gender gap in hourly earnings between women and men with similar level of educational attainment and labour market experience, and on three deep drivers that have been emphasised in previous research. Firstly, women may take up jobs with lower wages but with specific non-wage characteristics, such as higher working time flexibility or shorter commuting times, that allow them to spend more time in unpaid home work. The prioritisation of unpaid

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[2] Cavalcanti and Tavares (2016[46]) find in a calibrated growth model that raising the ratio of female to male wages in the United States to the ratio in Sweden (roughly a 30% increase) would increase US output per capita by around 7% through increased female labour market participation alone. Additionally allowing for negative effects of the gender wage gap on female education outcomes would likely result in even larger effects (Greenwood et al., 2016[57]).

home work by women, particularly after the birth of the first child, reflects to a large extent social norms and gender stereotypes that shape individual preferences (Bertrand, 2020[7]). Secondly, female career paths may not allow them to accumulate human capital at the same rate as men, e.g. because they interrupt their careers after childbirth, spend less time at the workplace than their male peers or forego promotions. These two sets of explanations suggest a child penalty for women that hinders their career and wage progression ("glass ceiling"). A third explanation could be that employers discriminate against women because of conscious or unconscious biases, or because they perceive the average woman to be less productive than the average man. According to this explanation, the gender wage gap would reflect "sticky floors", i.e. persistent disadvantages over women's working lives from labour market entry to retirement.

3. The appropriate policy mix to address the gender wage gap depends on its precise source. While career choices that lead to compensating wage differentials and slowed human capital accumulation may partly reflect individual preferences, they are shaped by social and cultural norms, as well as public policies. Part-time work, for instance, may partly reflect women's individual preferences, but may also be influenced by a social norm that women shoulder a greater share of childcare responsibilities. Making part-time work and flexible work schedules more widely accepted by employers and reducing disincentives for second earners in the tax code may promote a more equal sharing of such working arrangements between men and women, and thus reduce their adverse consequences for female wages. The importance of childcare-related career interruptions and occupational choices for human capital accumulation could be mitigated by harmonising parental leave policies for men and women and reducing effective marginal tax rates for secondary earners. Gender-based discrimination could be addressed by a combination of stricter pay transparency laws, stronger product market competition, as discrimination reduces firms' profits (Black and Brainerd, 2004[8]; Hirsch, Oberfichtner and Schnabel, 2014[9]), and higher wage floors as women tend to be over-represented at the bottom of the wage distribution.

4. Whereas previous work has generally focused on single drivers or country case studies, the contribution of this paper is to analyse the various drivers of the gender wage gap in a unified framework across a range of countries.[3] The main approach is based on the assumption that each of the potential drivers implies a different life-cycle profile of the gender wage gap. Compensating wage differentials imply that women take an immediate wage penalty at birth of the first child; slower human capital accumulation implies that the gender wage gap gradually widens over women's working lives; while discrimination implies that women face a wage penalty upon labour market entry that is unrelated to childbirth. The life-cycle approach attributes the initial gender wage gap and its widening over women's working lives to its deep drivers by combining estimated age-specific gender wage gaps with age-specific fertility rates in an accounting framework. A complementary approach relates the gender wage gap directly to its proximate drivers, such as part-time work or occupation.

5. The main findings are as follows.

- On average across countries, the "glass ceiling" related to the child penalty accounts for around 60% of the gender wage gap, with "sticky floors" related to discrimination accounting for the remaining 40%.

[3] Recent country case studies include: on compensating wage differentials Goldin (2014[11]) and Bøler, Javorcik and Ulltveit-Moe (2018[14]); on slow skill accumulation Angelov, Johansson and Lindahl (2016[17]) and Xiao (2019[18]); and on discrimination Reuben, Sapienza and Zingales (2014[24]) and Moss-Racusin et al. (2012[21]).

- Child penalty-related explanations account for 75% of the gender wage gap in Northern and Western European countries, but only around 70% in Southern European and 40% in Central and Eastern European ones.[4]
- The policy mix needs to be tailored to the sources of the gender wage gap. Northern and Western European countries need to prioritise policies to address the child penalty, such as further promoting flexitime and telework and supporting early childcare. Central and Eastern European countries as well as Southern European ones additionally need to prioritise measures to address gender stereotyping, the enforcement of equal pay and pay transparency laws, competition in product markets, as well as higher wage floors where they are currently low.

6. The remainder of the paper is structured as follows. Section 2 develops a conceptual framework to think through the deep drivers of the gender wage gap and reviews the relevant literature. Section 3 describes the different empirical approaches used to quantify these deep drivers, as well as their relation to proximate drivers such as working-time status. Section 4 describes the Eurostat Structure of Earnings Survey that is the main source of data for the empirical analysis, and provides a number of stylised facts on gender wage gaps across countries, education and age. Section 5 reports the empirical results. The final section draws the policy implications and concludes.

2. Framework and past findings

2.1. Framework

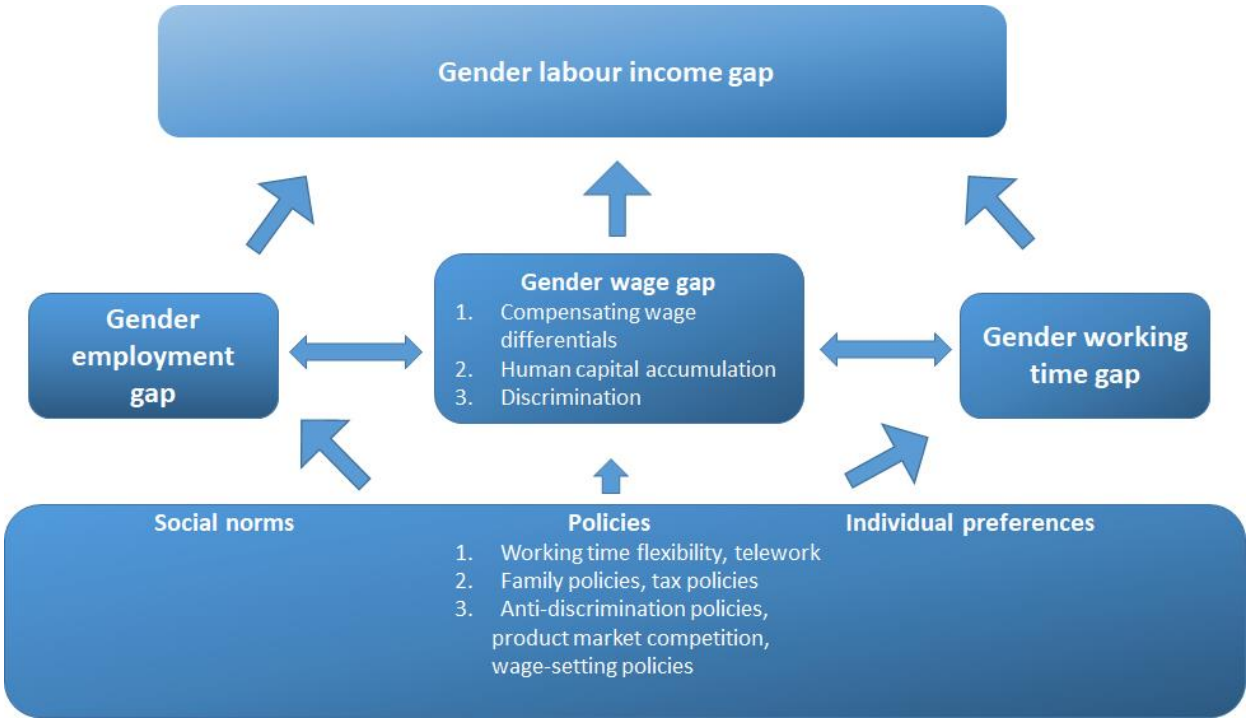
7. Women face a range of constraints in the labour market that manifest themselves in gaps in employment (participation and unemployment rates), wages, working time, and ultimately average earnings relative to men (Figure 1). Gender wage gaps interact with gender gaps in participation and working time. For instance, part-time work is generally associated with lower hourly wages, and temporary moves out of the labour force are associated with slower wage progression after re-entry. Gender gaps partly reflect differences in social norms, e.g. the expectation that women shoulder a greater share of childcare and household tasks than men, or individual preferences, e.g. for physically less demanding jobs. These factors may lead women to opt out of the labour market altogether, choose part-time work or lower-paid occupations and employers to compensate for specific non-wage job characteristics, such as high working time flexibility or low commuting times (compensating wage differentials). Social norms and individual preferences may also nudge women towards career paths that limit the development of their human capital and constrain their productivity, for instance by choosing part-time work or foregoing promotions after childbirth (slowed human capital accumulation). Moreover, some employers may discriminate in hiring against women, thereby depressing their employment, working time and wages (Becker, 1971[10]).

8. Understanding the sources of the gender wage gap is a pre-condition for devising effective policies. A large role for compensating differentials in explaining the overall gender wage gap may partly reflect social norms and individual preferences but may also be the consequence of policies that put a premium on full-time work and physical presence. Tax policies, such as joint taxation of married couples, and family policies, such as support for early childcare and parental leave, in turn affect the demand for part-time and flexible work arrangements, and the extent to which women develop the skills and professional networks that allow them to develop their careers and climb the wage ladder. Equal pay and

[4] Northern and Western European countries include: Belgium, Denmark, Finland, France, Germany, Luxembourg, Netherlands, Norway, Sweden and the United Kingdom. Central and Eastern European countries include: Bulgaria, Czech Republic, Estonia, Hungary, Poland, Latvia, Lithuania, Romania, the Slovak Republic and Slovenia. Southern European countries include: Greece, Italy, Portugal, Spain and Turkey.

pay transparency laws, the level of competition in product markets and wage-setting institutions directly affect firms' incentives and scope to discriminate against specific groups of workers, including women.

Figure 1. Gaps in women's labour market outcomes



Source: OECD.

2.2. Past findings

2.2.1. Compensating wage differentials for non-wage job characteristics

9. One explanation of the gender wage gap suggests that women earn less than men because they tend to accept lower wages in return for the non-monetary benefits of flexible working arrangements, which allows them to spend more time in unpaid home work. Consistent with this explanation, in the United States, occupations with short and flexible working time and few personal contacts (e.g. technology-related occupations) tend to display lower gender wage gaps than occupations in which personal contacts and long, inflexible working hours are key job characteristics (e.g. business, health and law-related occupations) (Goldin, 2014[11]). The US evidence further suggests that the gender wage gap is larger in occupations where workers have less working time flexibility, measured as the share of workers who work during core business hours (German, Chinhui and Silos, 2019[12]). Moreover, experimental evidence suggests that women have a higher willingness-to-pay for flexible work arrangements than men, with this difference explaining about 30% of their estimated gender wage gap (Wiswall and Zafar, 2018[13]).

10. Empirical results from other countries are consistent with the US evidence. For instance, evidence from Norway suggests that the gender wage gap is particularly large in exporting firms, as workers need to work long hours or during non-standard times to interact with business partners in different time zones (Bøler, Javorcik and Ulltveit-Moe, 2018[14]). A study using German data suggests that women tend to sort into firms that offer working time flexibility in return for lower pay (Heinze, 2011[15]).

2.2.2. Slow human capital accumulation due to career interruptions

11. Another explanation for the gender wage gap is that after the birth of the first child women tend to take maternity leave and transition to part-time work in a larger proportion than men. As a consequence, they may not develop the skills and professional networks that would allow them to climb the wage ladder. Indeed, informal interactions between workers and their managers appear to be key a factor in promotions, and disproportionately benefit men (Cullen and Perez-Truglia, 2019[16]). In Sweden, for instance, within couples of similarly qualified men and women, wages and wage progression are similar at the initial career stages but women's wage growth falls behind after childbirth (Angelov, Johansson and Lindahl, 2016[17]). According to this study, the gradual decoupling of women's wages from those of men after childbirth account for the overwhelming part (around 90%) of the gender wage gap, with similar results obtained for Finland and the Netherlands (Xiao, 2019[18]; Rellstab, 2020[19]). Evidence from Denmark suggests that productivity differences explain the gender wage gap for women with children (Gallen, 2018[20]).

2.2.3. Discrimination and "soft" skills

12. Previous studies further suggest that labour market discrimination against women contributes to the gender wage gap. The best available evidence is generally based on audit studies, in which job applications of men and women are matched on a range of worker characteristics, with the only difference visible to the potential employer being the gender of the applicant. These studies generally show that women with otherwise identical resumes are less likely to be hired and are offered lower wages (Moss-Racusin et al., 2012[21]; Correll, Benard and Paik, 2007[22]; Neumark, Bank and Van Nort, 1996[23]; Reuben, Sapienza and Zingales, 2014[24]).[5] Gender-based discrimination may reflect employers' dislike of female employees or unconscious biases (taste-based discrimination);[6] employers' perception that women are on average less productive than men (statistical discrimination);[7] or women's relatively inelastic labour supply compared to men, which allows employers to "mark down" their wages (monopsonistic discrimination).[8]

13. Demand-side gender discrimination in hiring by employers is difficult to distinguish empirically from supply-side differences in behaviour of male and female applicants. A number of recent studies have focused on the role of "soft" skills, such as negotiation behaviour, propensity to compete or risk aversion, in explaining the gender wage gap. While experimental evidence suggests that there are significant differences in "soft" skills between women and men, wage regressions including survey-based measures of "soft" skills generally find limited effects on the gender wage gap. According to most studies, these factors explain only around 10% of the gender wage gap after controlling for other worker and job

[5] Consistent with this evidence, introducing blind auditions has greatly increased hiring and promotions of women in orchestras in the United States (Goldin and Rouse, 2000[47]). However, some audit studies find no evidence for discrimination or find evidence for discrimination against men (Bertrand and Mullainathan, 2004[48]; Booth, Leigh and Varganova, 2012[49]; Kuhn and Shen, 2013[50]).

[6] This is consistent with surveys suggesting that most people have at least one bias against women (UNDP, 2020[58]).

[7] The perception of lower average productivity of women may partly be related to motherhood. For instance, the reduction in the year 2006 of generous maternity leave that large German employers were obliged to pay reduced the gender wage gap by about 20% (Jessen, Jessen and Kluve, 2019[51]). The fact that equally productive men and women receive different wages in Denmark partly reflects employers expecting motherhood to make women less productive but being unable to adjust wages downward due to rigidities (Gallen, 2018[20]).

[8] A number of studies suggest that the firm-level labour supply elasticity is lower for women than men (Hirsch, Oberfichtner and Schnabel, 2014[9]; Barth and Dale-Olsen, 2009[52]). This may be explained by the fact that women are less geographically mobile than men (Jacob et al., 2019[53]), which could in turn partly reflect the fact that women are "tied movers" in the sense that women restrict job search to the geographical area of their partner's employer (Lundborg, Plug and Rasmussen, 2017[54]).

characteristics (Nyhus and Pons, 2012[25]; Semykina and Linz, 2007[26]; Reuben, Sapienza and Zingales, 2015[27]). Moreover, differences in survey-based measures of "soft" skills between women and men are small relative to within-gender differences and may partly be driven by the anticipation of discrimination in hiring or social norms (Bertrand, 2020[7]). For instance, women may bargain less vigorously over wages than men because employers respond negatively to female wage demands. Indeed, the evidence suggests that returns to "soft" skills, such as bargaining and propensity to compete, are lower for women than men.[9]

3. Empirical setting

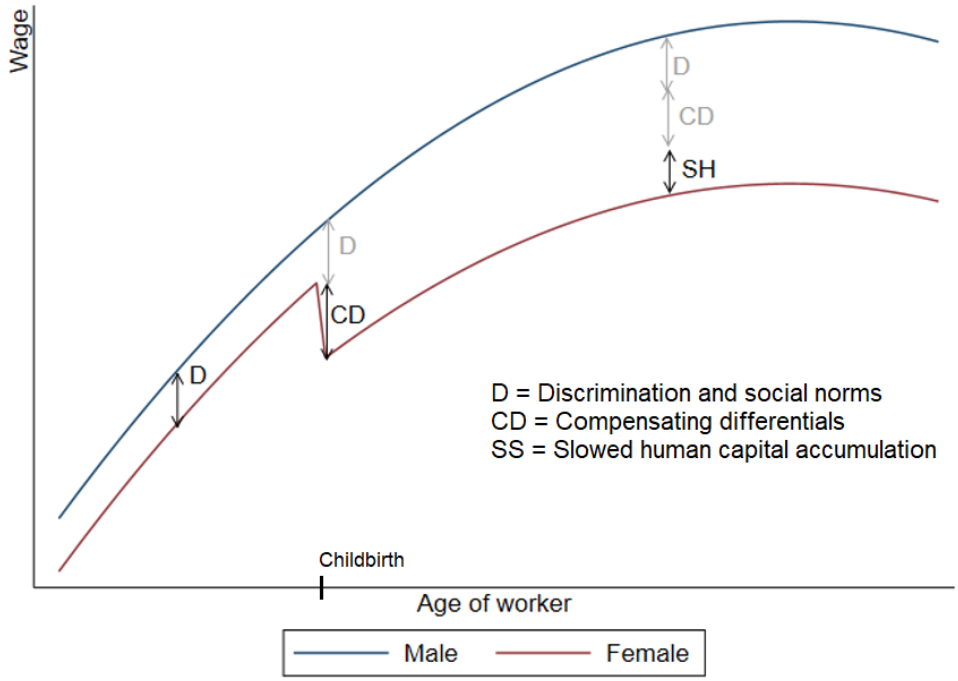
14. Given that compensating wage differentials, slow skill accumulation and discrimination may be interrelated, empirical decompositions of the gender wage gap face a number of challenges. For instance, compensating wage differentials related to part-time work or other flexible work arrangements may not reflect innate preferences but instead deep-seated social norms or stereotypes according to which women are expected to shoulder a larger share of childcare responsibilities than men. Such differentials may also reflect the expectation by women of being discriminated against in terms of career progression, which may discourage them from choosing more demanding and higher-paying jobs. At the same time, part-time work and other flexible work arrangements may not only lead to compensating wage differentials but also to slow human capital accumulation if full-time work or long working hours are a precondition for career progression.

15. Bearing in mind these caveats, this paper adopts two complementary approaches to carry out the empirical analysis. First, it follows a range of previous studies that use the life-cycle profile of women's wages relative to men's to decompose the gender wage gap into its deep drivers (Angelov, Johansson and Lindahl, 2016[17]; Xiao, 2019[18]; Kleven et al., 2019[28]). Second, it complements this life-cycle accounting approach by relating the gender wage gap to its proximate drivers, such as part-time status, industry and occupation.

16. The life-cycle accounting approach is based on the following assumptions. First, explanations related to social norms and discrimination are assumed to be reflected in gender wage gaps before birth of the first child. In this stage of the life cycle, the child penalty is unlikely to play a significant role but social norms and stereotypes that influence education and career choices, as well as taste-based and statistical discrimination against women should already be relevant (Figure 2). Second, compensating wage differentials are assumed to induce a wage penalty for women around the time of birth of the first child, with the penalty remaining broadly constant over their working lives. Third, slow human capital accumulation is assumed to lead to a gradual widening of the gender wage gap following the birth of the first child as women interrupt their careers and/or reduce their working time to raise children, which, on top of leading to compensating wage differentials, reduces opportunities for skill and career development.

[9] A related literature suggests that in some occupations there is a gender gap in productivity that may be related to "soft" skills. For instance, some evidence suggests that male lawyers earn higher wages because they perform better than women in terms of billing more hours and bringing in more clients (Azmat and Ferrer, 2017[55]). Other evidence suggests that female Uber drivers drive more safely and refuse to take rides from areas with higher crime rates, in both cases preferring safety over earnings (Cook et al., 2020[56]).

Figure 2. Drivers of the gender wage gap in the life-cycle accounting framework



Note: The chart compares the theoretical evolution of women's and men's wages over the working life-cycle, according to the life-cycle accounting framework. Wage levels are shown on the y-axis, while the x-axis depicts the age of workers. Women start with a lower salary relative to men due to discrimination, experience a one-off increase at time of childbirth due to compensating differentials and keep gradually falling behind during childrearing due to slow human capital accumulation relative to men.
Source: OECD.

17. While the life-cycle accounting approach has the benefit of allowing a transparent decomposition of the gender wage gap, the underlying assumptions cannot be verified with the available data, which suggests a degree of caution in interpreting the empirical results. For instance, the gender wage gap before childbirth could be an over-estimate of social norms and discrimination if women sort into low-wage occupations based on innate preferences for specific non-wage job characteristics, or it could be an under-estimate if women experience discrimination at later stages in their careers, e.g. in terms of promotions. Moreover, any potential narrowing of the gender wage gap at older ages is attributed to faster human capital accumulation by women relative to men rather than the reversal of compensating differentials as women return to full-time work or less flexible work arrangements when they become less constrained by childcare responsibilities at older ages.

18. Given the unavailability of individual-level data that would allow following women over their working lives and the date of childbirth on a cross-country basis, the empirical analysis relies on a cross-sectional approach and pools different survey waves.[10] Gender wage gaps are first estimated by age and then related to age-specific fertility data. The estimating equation for gender wage gaps by age is as follows:

[10] Ideally, gender wage gaps would be estimated from administrative linked employer-employee data that follow workers over time. However, harmonised administrative linked employer-employee data are generally not available on a cross-country basis. The OECD LinkEED project is constructing a harmonised cross-country dataset of linked employer-employee data that will be used to complement the analysis reported in this paper.

$$\log(w_i) = \sum_{j=14-19}^{50-59} (\beta_{F,j} female_i \times age_{i,j} + \beta_{e,j} education_{i,e} \times age_{i,j}) + X_i\gamma + year_i + \varepsilon_i \quad (1)$$

where w_i is the wage of individual *i;* $female_i$ is a dummy variable for women; $age_{i,j}$ are dummy variables for age bracket j (where j is equal to 14-19, 20-29, 30-39, 40-49 and 50-59); and $education_{i,e}$ are education dummies, one for each level of educational attainment *e*, with returns to education allowed to vary with age. X_i is a vector of additional individual-level controls, including tenure in the firm; apprentice and casual worker dummies (defined as individuals working less than 20% of full-time hours), included to control for potential compositional differences among employees in the 14-19 age bracket; as well as a cohort dummy that enters the estimating equation independently and as an interaction with the female dummy in order to control for cohort effects in wages and the gender wage gap.[11] $year_i$ is a dummy capturing the survey wave's year; and ε_i is the error term. $\beta_{F,j}$ are the coefficients to be estimated, measuring age-specific gender wage gaps. The overall gender wage gap is obtained as the weighted mean of the age- and cohort-specific gender wage gaps, where the weights are the number of workers in each age bracket and cohort as a share of all workers in the sample. Equation (1) does not include controls for part-time work, industry, occupation and firm, since the deep drivers of the gender wage gap (discrimination, compensating wage differentials and slow skill accumulation) are expected to partly operate through the differential sorting of women and men across these job dimensions.[12]

19. Age-specific coefficients are then combined with fertility data to get a sense of the importance of the deep drivers of the gender wage gap. This is done according to the system of equations described in Box 1. In short, discrimination is assumed to occur before the birth of the first child and to remain constant thereafter, with the contribution to the overall gender wage gap approximated by the gender wage gap among the youngest available age bracket (age 14-19), for which fertility rates are negligible.[13] The contribution of compensating differentials is given by the gender wage gap around the birth of the first child. This is measured as the increase in the gap when moving between two age brackets (e.g. 14-19 to 20-29) weighted by the first-child fertility rate in the second age bracket (e.g. 20-29), where the choice of age brackets is dictated by availability in the Eurostat Structure of Earnings Survey.[14] The intuition is that

[11] In cross-sectional data, age-specific gender wage gaps are indistinguishable from cohort-specific gaps since age and date of birth are perfectly collinear. However, in repeated cross-sections, the same cohort is observed at different ages, which, in principle, allows disentangling cohort effects from pure age effects. In the Eurostat Structure of Earnings data, a given cohort is observed over 12 years, and age generally varies by 10-year age brackets, which limits the number of cohort dummies that can be included without inducing collinearity with the age variable. The approach taken in this paper is to (1) exclude all workers born before 1950 from the sample and (2) divide the remaining workers into two groups depending on whether the oldest person in their age bracket was born before or after 1970 (for instance those who were between 30 and 39 years old in the 2006 wave are assigned to the first group, while those between 20 and 29 are assigned to the second group). The results are robust to choosing different cut-off dates, and allowing for 3 rather than 2 cohort dummies.

[12] For instance, industry or occupation effects may reflect discrimination against women in specific industries or occupations while effects of part-time work may be explained by compensating wage differentials. Controlling for these effects would limit the explanatory power of the life-cycle accounting approach to gender wage gaps within working time status, industry, occupation and firm rather than the overall gender wage gap both within and between these categories.

[13] While the dummies for apprentices and casual workers included in Equation (1) control for compositional effects so that, for instance, male high-school drop-outs are not inadvertently compared with female apprentices, it cannot fully be excluded that the wage gap for this age group systematically differs from the one in the rest of the population (e.g. because of binding minimum wages).

[14] First-child fertility rates are given by the ratio of first births to the number of women in the age bracket in a given year.

the increase in the gender wage gap due to compensating differentials increases with the share of women having their first child in that age bracket. Finally, the contribution of slow human capital accumulation is allowed to vary in the years following childbirth. In practice, it depends on all gender wage gap coefficients and fertility rates.

Box 1. The life-cycle accounting framework

An empirical decomposition of the gender wage gap can be carried out by assigning the $\beta_{F,j}$ coefficients (where j denotes age brackets) estimated from Equation (1) to discrimination, compensating differentials and slower human capital accumulation in the following way:

- $\boldsymbol{\beta_{F,14-19} = D}$ **(2a)**
- $\boldsymbol{\beta_{F,20-29} = \beta_{F,14-19} + f_{20-29}CD}$ **(2b)**
- $\boldsymbol{\beta_{F,30-39} = \beta_{F,20-29} + f_{20-29}SH_1 + f_{30-39}CD}$ **(2c)**
- $\boldsymbol{\beta_{F,40-49} = \beta_{F,30-39} + f_{20-29}SH_2 + f_{30-39}SH_1}$ **(2d)**
- $\boldsymbol{\beta_{F,50-59} = \beta_{F,40-49} + f_{20-29}SH_3 + f_{30-39}SH_2}$ **(2e)**

where f are yearly first-child fertility rates; D and CD respectively denote discrimination and compensating differentials; while SH_1, SH_2 and SH_3 are, respectively, the effects of slower human capital accumulation one, two and three decades after the birth of the first child.

Discrimination is approximated by the gender wage gap of workers aged 14-19, since only a very small fraction of women have children at this age in the countries analysed in this paper.[1] Compensating differentials are assumed to have immediate, one-off effects on women's wages upon the birth of the first child, either at age 20-29 or 30-39.[2] By contrast, slower human capital accumulation affects the gender wage gap only in the age brackets after the birth of the first child, the idea being that its effects on wages are gradual rather than immediate. These effects are allowed to evolve up to three decades after the birth of the first child.[3]

The system of Equations (2a)-(2e) can be solved for *D*, *CD* and *SH* (the sum of SH_1, SH_2 and SH_2), allowing to obtain an estimated decomposition of the gender wage gap into its deep drivers (Annex A).

Notes:

1. First-child fertility rates in the 14-19 age bracket average 0.5% in the countries covered in the analysis and first-child births in this same age bracket only account for about 5% of the total.
2. Given extremely low fertility rates in the 40-49 age bracket (less than 0.1% on average), the effect of compensating differentials in this age group is assumed to be 0.
3. If $SH_2<SH_1$ and/or $SH_3<SH_2$ the pace of slowed human capital accumulation related to childbirth slows over time. If $SH_2<0$ and/or $SH_3<0$, the effects of slowed skill accumulation can even be reverse at older ages.

20. A complementary approach that allows shedding more light on the results of the life-cycle accounting approach is to directly relate the gender wage gap to its proximate drivers observed in the data. For instance, part-time work may be a proximate measure of compensating wage differentials if women accept lower wages in return for shorter working hours. In order to open the "black box" of the life-cycle accounting approach and analyse the role of differential sorting of women and men across different job characteristics, the empirical analysis implements a number of exercises in which the baseline wage Equation (1) is gradually augmented as follows:

$$\log(w_i) = \sum_{j=14-19}^{50-59} (\beta_{F,j} female_i \times age_{i,j} + \beta_{E,j} education_{i,e} \times age_{i,j}) + X_i\gamma + \mathrm{Z}_i\delta + year_i + \varepsilon_i \quad (3)$$

where the notation is as in Equation (1), and Z_i are job characteristics such as dummies for part-time status, public sector job, industry, occupation or firm that measure sorting of women into lower-wage segments of the labour market as opposed to within-segment gender wage gaps. The contribution of worker and job characteristics to the gender wage gap is calculated by subtracting the gender wage gap estimated from a specification of Equation (3) including additional variables in the vector Z_i from the gap estimated from the baseline specification (Equation 1).[15]

4. Data and stylised facts

21. The dataset covers 23 European OECD members (Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Turkey and the United Kingdom) as well as 2 European countries that are not members of the OECD (Bulgaria and Romania).

4.1. Data

22. The main source of data is the Structure of Earnings Survey (SES), a 4-yearly survey that underpins Eurostat's aggregate earnings statistics and contains worker-level information on earnings, hours worked, contract type and demographic characteristics, as well as a firm identifier. The first survey was conducted in 2002. At the time of writing, data from the 2018 wave were not yet available so that the analysis draws from the 2002, 2006, 2010 and 2014 waves. While workers and firms cannot be followed across waves and the coverage is limited to European countries, the high-quality information on working time and demographic characteristics allows constructing gender gaps in hourly wages for similarly-qualified women and men across a broad range of countries.

23. SES data are generally obtained from tailor-made questionnaires conducted by national statistical agencies through a two-stage random sampling approach. First, a random sample of enterprises/local units is selected. Then, a sample of employees within the selected enterprise/local unit are surveyed. Occasionally, existing surveys and/or administrative data are also used. The target population is composed of all enterprises and institutions in the private and public sectors.[16] Although the share of employees surveyed varies widely across countries, the SES is representative. In the average country, the employees surveyed in the 2014 wave accounted for about 12% of total employment, with this share ranging from around 0.5% in the United Kingdom to over 50% in Norway (Figure B.1).

24. The main variables of interest relate to earnings and hours worked. The key earnings variable measures average remuneration during the reference month (generally October) before taxes and

[15] When the contributions are positive (meaning that they reduce the gender wage gap), they are set to 0. The order in which variables are added to equation (1) matters for the exact contribution of each characteristic that is estimated. For instance, including part-time status before industry implies that part-time status captures both within-industry effects and the sorting of women into industries with a high prevalence of part-time work. The precise order of inclusion into equation (3) reported below is: (i) part-time status, (ii) industry, (iii) occupation and (iv) firm.

[16] Some sampling differences across countries exist. Not all countries sample micro units (up to 9 employees) or entities in the NACE Rev. 2 O section (Public administration, defence and compulsory social security). For the 2014 wave, Luxembourg did not sample micro units, while Belgium, Greece, Luxembourg, Portugal, Norway and Turkey did not sample entities in the O section.

employer social security contributions. It accounts for all standard payments, such as regular and overtime earnings as well as special payments for shift work, whereas it does not cover non-standard payments, such as 13th or 14th month payments, one-off bonuses and payments in kind. An additional variable, measuring the total annual value of one-off bonuses, is also available.[17] Turning to data on hours, the SES provides information on total hours actually paid during the reference month, including regular and overtime hours as well as hours paid but not worked, such as paid sick leave, annual leave and national holidays. Finally, a separate variable measuring overtime is also available.

25. Using the data described above, an overall hourly earnings variable, encompassing basic and overtime earnings as well as special payments for shift work and bonuses, is constructed. To do so, first the monthly equivalent of annual bonuses is added to standard monthly earnings (including basic pay, overtime earnings and shift work pay). Second, the resulting value is divided by monthly hours worked. This variable is then winsorised in order to deal with potential measurement error that could bias the empirical estimates.[18]

26. Besides data on earnings, the SES contains harmonised data on demographic and job characteristics, such as gender, age, educational attainment, length of service (tenure) in the firm, occupation, type of contract (permanent, fixed-term or apprentice, full- or part-time). For confidentiality reasons, the age of workers is converted into a categorical variable by Eurostat, denoting six- or ten-year brackets (e.g. 14-19, 20-29, 30-39, 40-49 and 50-59). Education levels are harmonised over the waves to three levels (primary of lower secondary, upper secondary, tertiary). Finally, information on occupations are available at either the 2- or 3-digit level following either the ISCO-88 or ISCO-08 classification, depending on the particular country-year survey wave. To ensure comparability, an additional variable defining 2-digit level occupations is constructed. Other relevant variables include an employer identifier, 1-digit industry classification as well as a dummy denoting public control.

27. Aside from SES data, data on births by birth order and mother's age, and on the total population by age and gender are sourced from Eurostat. These data are used to create a variable measuring first child fertility rates, defined as the sum of births of first children by mothers in a given age bracket divided by the number of women in that age bracket and to be used to decompose drivers of the gender wage gap into compensating differentials, slower skill accumulation and discrimination. Finally, variables on the number of employed individuals and populations by age bracket and gender are sourced from the OECD Labour Force Statistics database in order to study gender employment rate gaps (Box 2).

4.2. Stylised facts

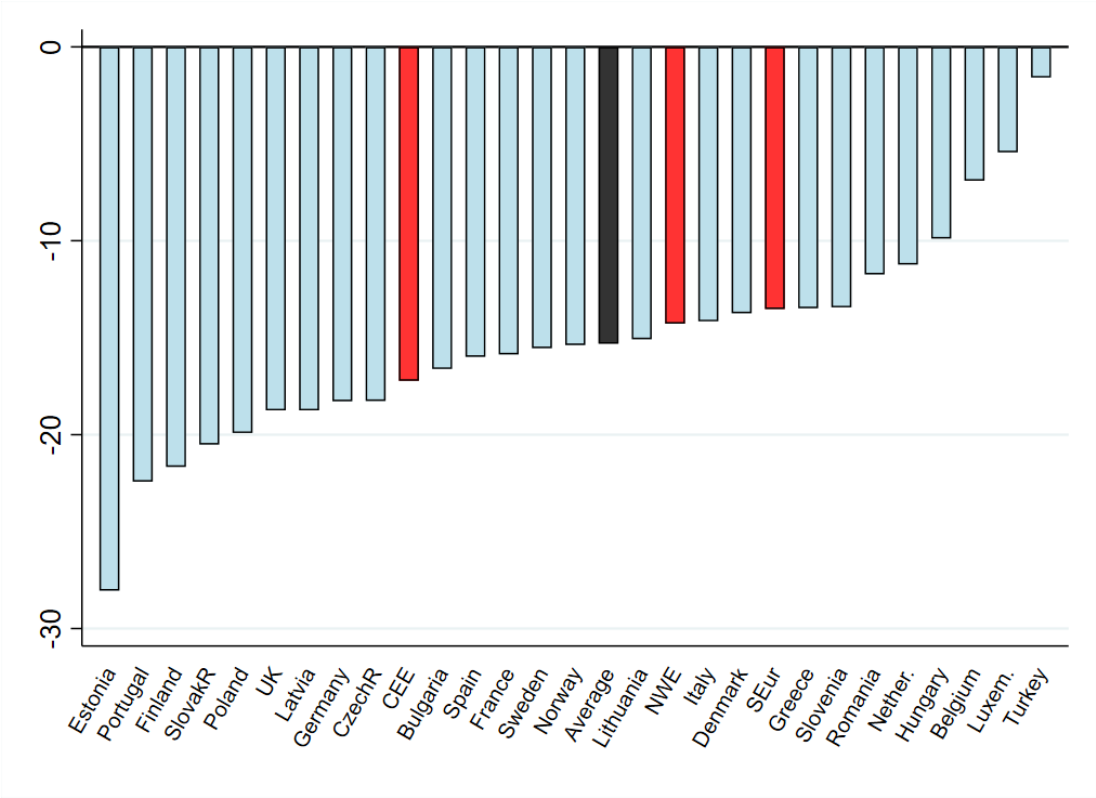
28. On average across countries, in the 2014 wave of the SES, women earn about 15% less than men with similar qualifications and experience for each hour worked (Figure 3). There are important differences across individual countries, with the gender wage gap ranging from below 10% in Hungary, Belgium, Luxembourg and Turkey to over 20% in Estonia, Finland, Portugal and Slovak Republic. However, despite large differences between individual countries, differences in the gender wage gap between broad geographical country groups are limited, ranging from about 14% in Northern, Western and Southern Europe to more than 17% in Central and Eastern European countries.

[17] The earnings variables are cleaned by censoring observations (i) with negative values, (ii) in which overtime earnings or special payments for shift work are larger than overall earnings, and (iii) with value larger than the 99.9 or lower than the 0.01 percentiles of the country-year distribution.

[18] More specifically, where a national hourly minimum wage exists, the series is winsorised at 80% of its value to allow for some differentiation of minimum wages (e.g. for youth). Where a national minimum wage does not exist, the series is winsorised at 25% of the median wage, which allows for slightly more wage dispersion than in countries with national minimum wages (the average ratio of minimum wages to median wages being around 40%). The results below are robust to alternative thresholds.

Figure 3. Women earn about 15% less than men for each hour worked on average across countries

Hourly earnings, women – men, controlling for age and education, %, 2014



Note: The chart presents log-percent differences in average hourly earnings per hour worked of women relative to men with the same level of educational attainment, age and tenure. These statistics are obtained estimating, separately for each country, the following regression specification: $\log(w_i) = \beta_F female_i + X_i\beta_1 + \varepsilon_i$, where log denotes the log operator, w_i is hourly earnings of individual *i*, $female_i$ is a 0/1 gender dummy, X_i is a vector of control variables, including age-by-education dummies, tenure and two dummies for apprentices and casual workers, and ε_i is the error term. The equation is estimated on the 2014 sample. Bars denoted by "CEE", "SEur" and "NWE" report, respectively, averages for Central and Eastern, Southern, and Northern and Western European countries.
Source: Eurostat Structure of Earnings Survey and OECD calculations.

29. Limited regional differences in the estimated gender wage gap could partly reflect differences in labour force participation and working time across country groups (Box 2). Female participation rates are high in Northern and Western European countries, but high participation is partly achieved through a high incidence of part-time work among women, which may drive down their hourly wages. By contrast, in Southern European countries women tend to either work full-time or not at all, which may result in the selection of only the highest-earning women into the labour force. In Central and Eastern European countries, both employment and working time gaps are fairly limited.

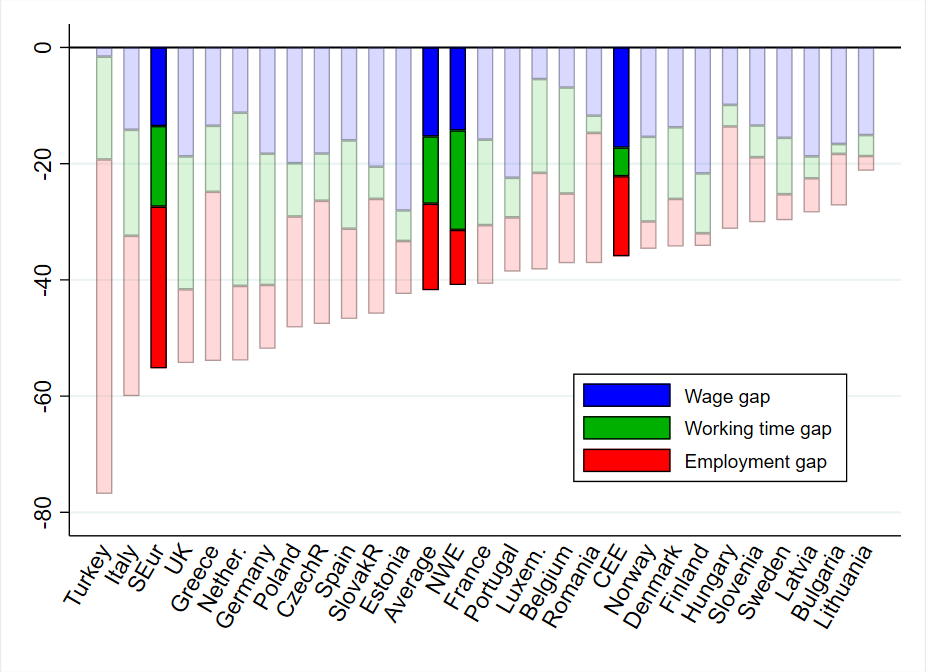
Box 2. Gender wage gaps in the broader context of gender gaps in labour market outcomes

The gender wage gap is just one aspect of gender differences in labour market outcomes, along with gaps in working time and employment rates. Together, these gaps determine differences in labour income between women and men.

On average across countries, labour income of women is about 40% smaller than that of men (Figure 4). The labour income gap tends to be largest in Southern European countries, mainly due to large employment gaps, which are in turn driven by substantial gaps in labour force participation rates. Labour income gaps tend to be smaller in Central and Eastern Europe (around 35% on average), mostly due to limited employment and working time gaps. In Northern and Western Europe, female employment rates are well above the sample average but women tend to work significantly fewer hours.

Figure 4. Cross-country differences in gender wage gaps are limited compared to other gaps

Hourly earnings, working time and employment rates, women – men, %, 2014



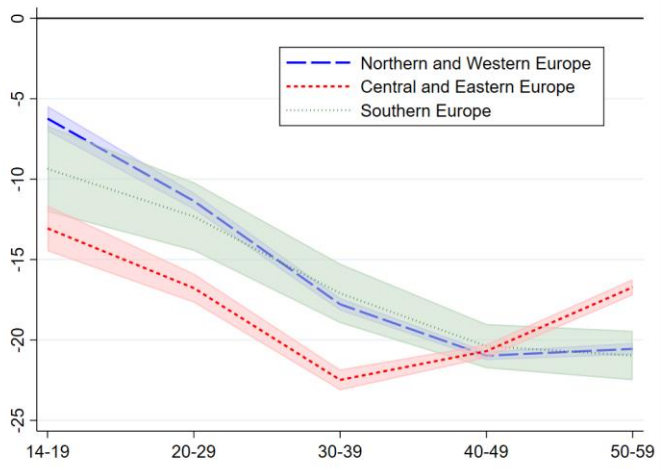
Note: The chart shows percent differences in female hourly earnings, hours worked and employment rates relative to men, the sum of which yields the labour income gap. The hourly earnings gap is estimated from SES data and refers to women and men with similar qualifications and experience (see notes to Figure 3). The working time and the employment rate gaps are computed using data from the OECD Labour Force Statistics database. Bars denoted by "CEE", "SEur" and "NWE" report statistics for, respectively, the average Central and Eastern, Southern and Northern and Western European country. All statistics are for the year 2014.
Source: OECD calculations based on Eurostat Structure of Earnings Survey and OECD Labour Force Statistics database.

Over all, this box highlights the need to assess gender differences in hourly earnings in the broader context of gender gaps in labour market outcomes. For instance, in a number of Northern and Western European countries, including Germany, the Netherlands and the United Kingdom, gender gaps in working time are well above the sample average. However, large gender gaps in working time appear to be the flipside of high female employment rates. Moreover, in a number of Southern European countries, including Greece, Italy and Turkey, limited gender wage gaps appear to be the flipside of large gender employment gaps. While the gender wage gap among the selected group of women who enter the labour market is similar to the sample average, many women do not enter the workforce in the first place.

30. A clear geographical pattern in the gender wage gap emerges when considering its evolution over the life cycle. Before birth of the first child, the gender wage gap is larger in Central and Eastern European countries (13%) than in Southern European (9%) and Northern and Western European (6%) ones. In Northern and Western European countries, and to a slightly lesser extent in Southern Europe, the gender wage gap increases throughout most of the life-cycle and only stabilises at around 20% in the 50-59 age bracket, which suggests an important role for the child penalty in these countries. By contrast, in Central and Eastern European countries, wage differences between men and women widen when moving from young to middle ages but largely revert to their initial levels at older ages, which could reflect a more rapid pace of human capital accumulation as women with grown-up children invest more time in their careers.[19] The larger gender wage gap before birth of the first child (age 14-19) in the average Central and Eastern suggests that discrimination may be playing an important role in these countries.

Figure 5. Gender wage gaps tend to increase over the life cycle

Hourly earnings, women – men, %



Note: The chart compares gender wage gaps over the working life-cycle across different country groups. It shows log-percent differences in women's hourly earnings relative to men with the same level of educational attainment and tenure by age group for the average Northern and Western (blue long-dashed line), Central and Eastern (red short-dashed line) and Southern European country (dotted green line). The statistics are obtained estimating the $\beta_{F,j}$ coefficients from equation (1). Shaded areas are 2 standard errors confidence bands.
Source: OECD calculations based on the Eurostat Structure of Earnings Survey.

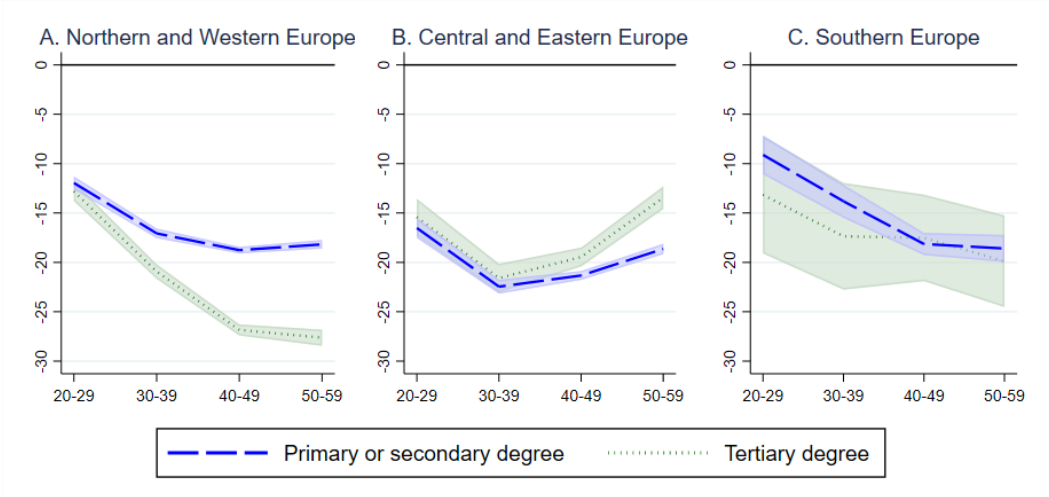
31. Distinguishing between employees with a low (primary or secondary degree) and a high level of educational attainment (tertiary degree) uncovers significant differences in Northern and Western European and Central and Eastern European countries (Figure 6). In Northern and Western European countries, the gender wage gap among the highly educated increases faster than among the low educated over the life-cycle, possibly reflecting barriers to career progression of highly-educated women related to childcare responsibilities (Blau and Kahn, 2017[29]). This points to an important role of compensating wage differentials and human capital accumulation in driving the gender wage gap in these countries. By contrast, in Central and Eastern European countries the gender wage gap among the highly educated

[19] The V-shaped pattern of the gender wage gap over the life cycle in Central and Eastern European countries raises the question whether it may partly reflect cohort effects. This would be the case if older generations who entered the labour market before the fall of the Iron Curtain started their working lives with lower gender wage gaps than younger generations who joined the labour market after the transition. However, this does not seem to be the case. The specification that is estimated includes the interaction of the female dummy with another, taking value 1 for the older cohort (those born before 1970), and this interaction takes a negative value for Central and Eastern European countries. This is in line with Northern and Western as well as Southern European countries, and suggests that, if anything, gender wage gaps before the fall of the Iron Curtain were larger than after the transition.

tends to be lower than among the low educated, suggesting a more limited role of child penalty-related explanations in these countries. Instead, larger gender wage gaps among low-skilled workers could reflect relatively lower wage floors that may allow employers to set particularly low wages for low-skilled women. In Southern European countries there are no significant differences in the gender wage gap across high and lower-educated workers.

Figure 6. Gender wage gaps among the highly educated evolve very differently across countries

Hourly earnings, women – men, %



Note: The chart compares the working life-cycle evolution of the gender wage gap of the highly educated (tertiary degree) against that of the low educated (primary or secondary degree) for each country group. It shows log-percent differences in hourly earnings relative of low (long-dashed blue lines) and highly educated women (short-dashed green lines) relative to their men counterparts with the same tenure, by age group in the average Northern and Western (Panel A), Central and Eastern (Panel B) and Southern European country (Panel C). The statistics are obtained estimating the $\beta_{F,j}$ coefficients from an augmented specification of Equation (1) in which the $female_i \times age_{i,j}$ interaction is further interacted with coarse education dummies (as is the cohort interacted with the female dummy). Estimates for the 14-19 age bracket are not shown since they are not available for individuals with post-secondary degree. Shaded areas are 2 standard errors confidence bands.
Source: OECD calculations based on Eurostat Structure of Earnings Survey.

5. Empirical results

5.1. Decomposition of the gender wage gap: Life-cycle accounting approach

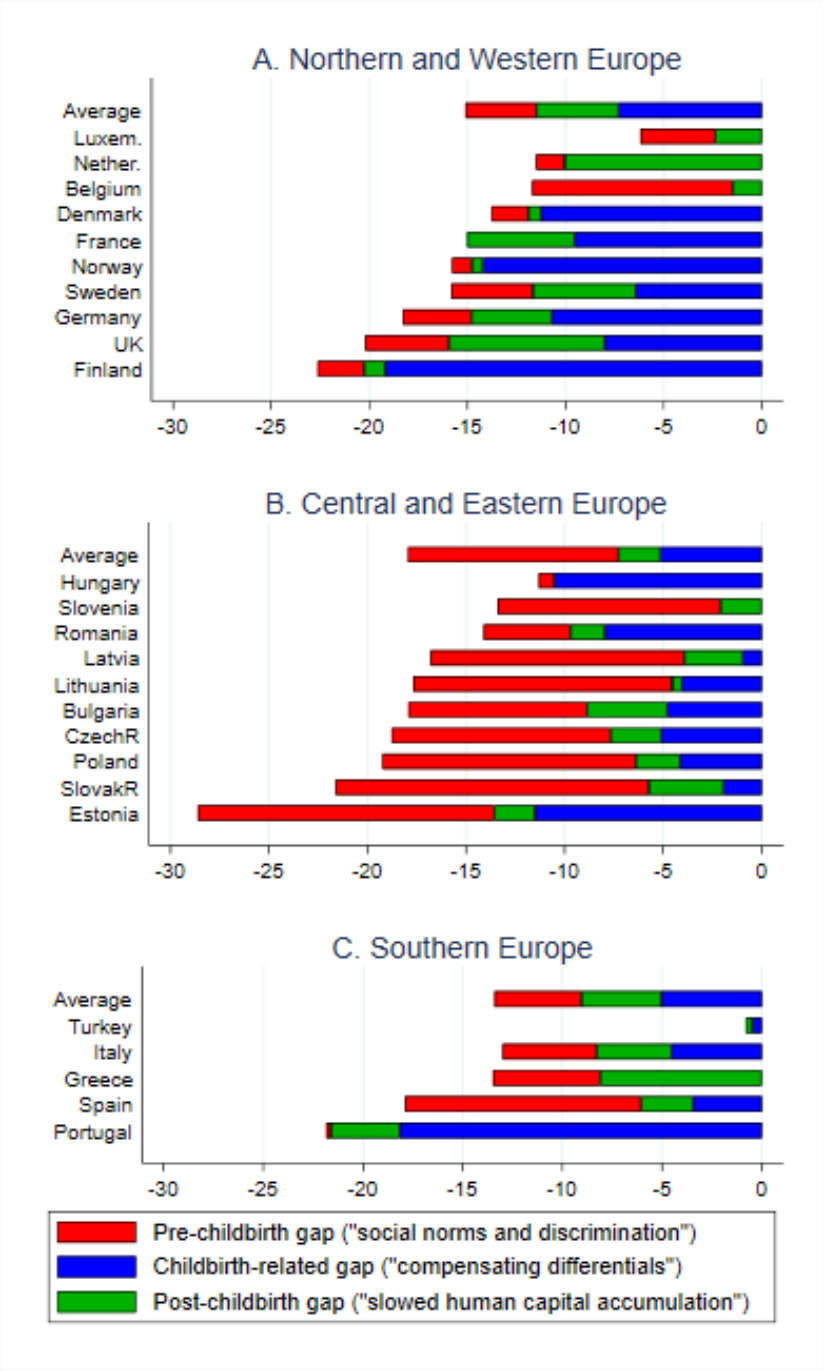
32. On average across countries, around 40% of the gender wage gap precedes the birth of the first child ("social norms and discrimination"), while around 60% occurs around the date of childbirth ("compensating differentials) and in the years following it ("slowed skill accumulation") (Figure 6). The child penalty appears to be particularly large in Northern and Western European countries, explaining around 75% of the gender wage gap. A notable exception is France where the child penalty appears to explain the entire gender wage gap since the gap among the 14-19 old is close to 0. This may, in turn, reflect the fact that the wage is set administratively for a large share of workers in this age bracket.[20] While on average across countries childbirth ("compensating differentials") is about twice as important as the widening gap post-childbirth ("slow human capital accumulation"), in the group of Nordic countries (Denmark, Finland,

[20] In France, teenage workers are often hired as apprentices, with little or no discretion for employers to set differentiated wages for men and women as wages are set administratively. The minimum wage for apprentices is typically much lower than the standard minimum wage, which results in the minimum to median wage ratio being 1.45 for workers aged 14-19.

Norway and Sweden) childbirth appears to be particularly important, explaining around 75% of the overall gender wage gap.

Figure 7. The deep drivers of the gender wage gap across countries

Contributions, % points



Note: The chart shows drivers of the gender wage gap for each country, as estimated from the life-cycle accounting approach. Blue, green and red bars respectively report the contributions of compensating differentials, slowed human capital accumulation and discrimination. Contributions are obtained combining the $\beta_{F,j}$ coefficients estimated from Equation (1) with first child fertility rates and population weights for the different age groups, according to Equation (6) in Annex A, and using the solutions reported in Equations (4a)-(4e) in Annex A to the system of Equations (2a)-(2e).

Source: OECD calculations based on the Eurostat Structure of Earnings Survey.

33. The pre-childbirth gap accounts for almost 60% of the overall gender wage gap among Central and Eastern European countries and 30% among Southern European ones. Notable exceptions are Hungary, Portugal and Turkey, where the pre-childbirth gap, measured as the gender wage gap among 14-19 years old is close to 0. In Turkey, this could partly reflect the fact that the minimum wage is binding for a large proportion of 14-19 year olds, which mechanically narrows wage differences between women and men, whereas in Hungary and Portugal social norms and discrimination genuinely do not appear to contribute to wage gaps between young women and men.[21]

34. The country pattern emerging from the life-cycle accounting approach is consistent with the evolution of gender wage gaps over women's working lives across geographical country groups (Figure 5). The large share of compensating differentials in Northern and Western European countries is driven by the steep increase in the gender wage gap when moving from age 14-19 to 20-29, while the low contribution of slow human capital accumulation among Central and Eastern European countries reflects the V-shaped evolution of the gender wage gap over the life-cycle.[22] Differences in the contribution of social norms and discrimination across the three country groups (large in Central and Eastern Europe, average in Southern Europe and small in Northern and Western Europe) follow from differences in the pre-childbirth gender wage gap (measured as the gap among the 14-19 age group), which the life-cycle accounting approach attributes entirely to social norms and discrimination against women.

35. On average across countries, including industry dummies specific to the 14-19 age bracket reduces the pre-childbirth gender wage gap by around 25%, suggesting that sorting into low-wage industries only accounts for around one-quarter of the pre-childbirth gender wage gap (Figure B.2). To some extent, the pre-childbirth gender wage may reflect sorting of women into industries with lower wages based on innate preferences or social norms rather than pure discrimination by employers. Including industry dummies in the equation for the pre-childbirth gender wage gap allows accounting for such sorting. In line with the evidence on differences across broad geographical country groups from the life-cycle accounting approach, industry sorting accounts for over 45% of the pre-childbirth gender wage gap in Northern and Western Europe, whereas it accounts for only around 15% in Central and Eastern Europe and Southern Europe. These results suggest that pure discrimination by employers may be an important factor driving gender wage gaps, especially in Central and Eastern Europe and Southern Europe.

5.2. Dissecting the "child penalty" and discrimination: Proximate drivers of the gender wage gap

36. This subsection presents evidence directly relating worker and job characteristics to the gender wage gap in order to complement the life-cycle accounting analysis. The purpose is not to assign such proximate drivers of the gender wage gap to its deeper determinants (compensating differentials, slowed skill accumulation, discrimination), as this would be fraught with difficulties. For instance, the prevalence of women in lower-paid occupations could reflect compensating wage differentials (as women may be constrained to accept lower pay in return for specific non-wage characteristics); slow human capital accumulation (which prevents women from progressing to higher-paid occupations over their careers); or

[21] In Turkey, the minimum wage is 1.33 times larger than the median wage among 14-19 olds, suggesting that it is binding for a large proportion of workers in this age bracket. By contrast, the ratio of the minimum to wage the median wage among 14-19 year olds is significantly lower in Portugal (0.87) and Hungary (0.63).

[22] This is because the life-cycle accounting approach attributes widening gaps between age brackets 20-29 and 30-39 partly to slow human capital accumulation. Instead, a narrowing of the gender wage gap at later stages of women's careers is only possible in case of faster human capital accumulation than men (possibly due to catch-up effects due to reduced childcare responsibilities), which reduces the overall contribution of slow human capital accumulation.

social norms or gender-based discrimination in hiring and/or promotions (as employers in specific occupations may have a preference for male employees).

37. The empirical analysis in this section estimates the gender wage gap adding additional controls to the baseline specification in the following order: (i) part-time status, (ii) private or public sector status, (iii) industry, (iv) occupation and (v) firm.[23] The controls introduced at later stages measure their effects net of sorting along the previously introduced controls. For instance, the industry dummies measure industry effects net of sorting into part-time status.

5.2.1. Part-time status explains 20% of the gender wage gap in Northern and Western Europe

38. Part-time work may involve a voluntary choice to forego a higher hourly wage in exchange for the non-monetary benefits of shorter working time in order to deal with childcare responsibilities. Indeed, basic descriptive statistics suggest that part-time work is associated with lower hourly wages and that a higher share of women than men transition from full- to part-time work during childbearing ages (Figures B.3 and B.4).[24] This is particularly true in Northern and Western European countries, where the life-cycle accounting approach suggests that compensating differentials explain the largest share of the gender wage gap.

39. Working time status explains a relatively large share of the gender wage gap in Northern and Western European countries (more than 20% in the average country), while it has a more limited impact in Southern Europe and, especially, in Central and Eastern Europe (Figure 7). With the exception of the Netherlands, countries with large contributions of working time status to the gender wage gap are generally those with large estimated compensating differentials from the life-cycle approach, suggesting that in most countries the role of part-time status can be viewed as a compensating wage differential. Analysing the life-cycle profile of overtime earnings across geographical country groups supports the view that women choose to work fewer hours during peak childbearing ages, especially in Northern and Western European countries (Figure B.5).

40. Similarly, the choice of working in the public sector or in other particular industries may partly be driven by working time flexibility considerations, as industries differ significantly in terms of such flexibility and women tend to sort into industries that are more likely to offer flexible working arrangements (Figure B.6).[25] Consistent with this conjecture, the contribution of both the public sector dummy and industry dummies to the gender wage gap is highest in Northern and Western European countries. But the fact that such public sector and industry dummies also contribute significantly to the gender wage gap in Central and Eastern European countries, where the life-cycle accounting approach points to a large contribution of discrimination, suggests that their effects may partly pick up social norms or discrimination in hiring rather than compensating differentials.

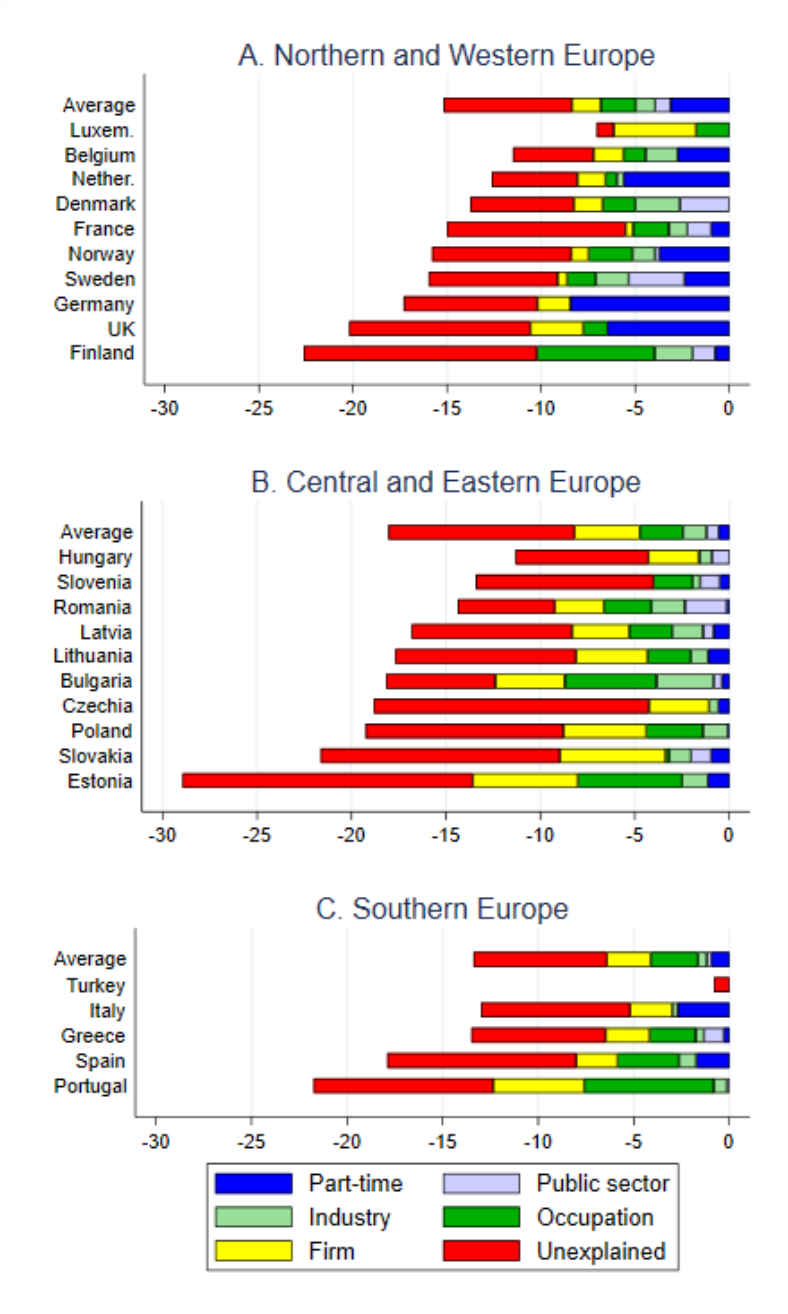
[23] Public sector jobs are defined as those in publicly-owned entities in the Public Administration and Social Security, Health and Education industries. For the 2014 wave of the SES, Belgium, Greece, Luxembourg, Portugal, Norway and Turkey did not sample workers in the Public Administration and Social Security industry and Turkey did not provide information on ownership of entities. Hence, the estimated contribution of public or private sector status in the gender wage gap for these countries is artificially lower.

[24] The part-time and industry dummies are just rough proxies for working time flexibility and there exist other working time flexibility measures such as flexitime, telecommuting or condensed schedules that are not captured by these variables.

[25] Indeed, women tend to sort into industries where the prevalence of part-time work among men is high (Figure B.5).

Figure 8. Proximate drivers of the gender wage gap across countries

Contributions, % points



Note: The chart reports estimates of the contribution of worker and job characteristics to the gender wage gap, obtained estimating different specifications of Equation (3) in which the different worker and job characteristics Z_i are sequentially added on top of each other to the baseline gender wage gap Equation (1). The precise characteristics considered are, in this order, (i) a part-time contract dummy, (ii) industry dummies, (iii) industry-occupation dummies, and (iv) firm dummies. Contributions to the gender wage gap are calculated by subtracting the weighted mean of the β_F^i coefficients estimated from the baseline (Equation 1) and the augmented specifications (Equation 3). The unexplained component is the gender wage gap estimated after controlling for (i)-(iv). Bars are stacked on top of each other to show the overall gender wage gap. The contribution of firm dummies in Finland and Turkey is 0 by construction since the employer identifier is not available for these countries and hence firm dummies cannot be included in the regression. Bars denoted by "average" report country group averages.
Source: OECD calculations based on the Eurostat Structure of Earnings Survey.

5.2.2. Occupation and firm could reflect any of the deep drivers of the gender wage gap

41. On average across countries, occupation dummies explain over 10% of the gender wage gap (Figure 7). Occupation may reflect compensating wage differentials as women may choose lower-paid occupations in return for non-wage job characteristics (horizontal occupational sorting). It may also reflect slow human capital accumulation as women spend less time on the job due to childcare responsibilities, and thus may have less opportunities for on-the-job learning and building up the professional networks that would allow them to progress to higher paying occupations (vertical occupational sorting). However, these interpretations are not supported by the country pattern of the life-cycle analysis, which suggests that the child penalty plays a large role in Northern and Western European countries, despite small occupation effects. Consequently, the role of occupation as a proximate driver of the gender wage gap may be explained by discrimination in hiring and promotions in specific occupations, or by women choosing occupations based on cultural and social norms.[26]

42. On average across countries, firm fixed effects account for almost 15% of the gender wage gap, with the contribution being significantly larger in Southern European countries (20%). This suggests that after controlling for worker and job characteristics women tend to systematically sort into lower-paying firms (Card, Cardoso and Kline, 2016[30]; Goldin et al., 2017[31]). This could partly reflect compensating wage differentials as women choose low-wage firms in return for non-wage job characteristics, slowed human capital accumulation that prevents women from moving to high-wage firms, or discrimination by specific employers.

5.2.3. The remaining gender wage gap after controlling for worker and job characteristics is large

43. Even after controlling for firm fixed effects, around 50% of the gender wage gap remains. This unexplained share is smaller in Northern and Western Europe (40%) than in in Central and Eastern Europe (55%) and Southern Europe (60%). Both the average unexplained gap and its relative importance across broad geographical country groups are consistent with the importance of social norms and discrimination estimated from the life-cycle approach. However, the unexplained gender wage gap after controlling for worker and job characteristics cannot directly be interpreted as discrimination. On the one hand, some observable worker and job characteristics included in the regression analysis, such as industry and occupation, may partly reflect social norms or discrimination, which may introduce a downward bias in estimates of discrimination based on the residual. On the other hand, observable job and worker characteristics may only incompletely capture compensating differentials and slow skill accumulation. For instance, part-time or public sector employment represents only a small share of compensating differentials, with other forms of working time flexibility or commuting times likely playing an important role as well.

44. The fact that in all countries there is a substantial gender wage gap of 14-19 year olds and a large contribution of the residual to the gender wage gap is difficult to reconcile with child penalty-based explanations. Moreover, in a number of countries, especially in Central and Eastern Europe, the gender wage gap is significantly larger in state-owned enterprises that typically have a “soft” budget constraint than in private firms that may be less able to forego profits due to discriminatory hiring practices, suggesting a non-trivial role for discrimination (Box 3).

[26] Unreported results suggest that both explanations are relevant, since occupation both explains a significant part of the gender wage gap among the 14-19 age bracket and the contribution of occupation increases over the life-cycle.

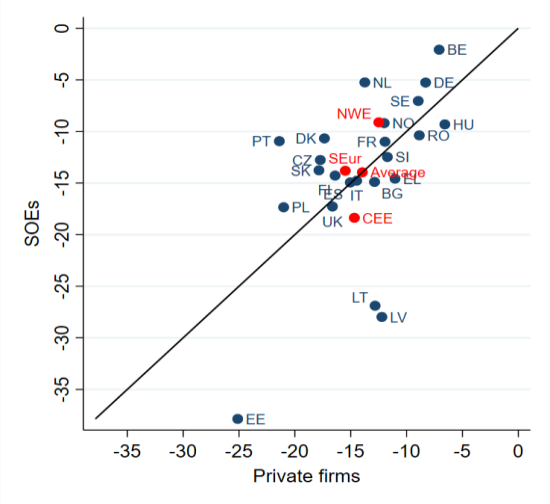
Box 3. Gender wage gaps in state-owned enterprises and private firms

The discrimination component of the gender wage gap may partly be driven by discriminatory preferences against women among employers, co-workers and consumers that drive down the demand for female workers and their average wages relative to their male peers (Becker, 1971[10]). However, employers who discriminate against women compete against non-discriminating employers who can reduce costs by employing larger shares of lower-paid women, suggesting that preference-based discrimination can only occur in product markets with limited competition. Previous empirical work finds strong support for the hypothesis that increased product market competition drives out costly discrimination in the long run (Black and Brainerd, 2004[8]; Hirsch, Oberfichtner and Schnabel, 2014[9]). This box analyses the plausibility of this hypothesis using differences in the gender wage gap across private-sector firms and state-owned enterprises (SOEs) in the same industry.1 If state-owned enterprises face a "soft" budget constraint and deviate from profit maximisation, they would be expected to display larger wage gaps.

In Northern and Western European countries as well as Southern Europe, gender wage gaps in SOEs are generally smaller or similar as those in private firms, but they are significantly larger in Central and Eastern European countries (Figure 8). These results are consistent with the view that gender wage gaps in Central and Eastern European countries may partly be explained by discrimination. The smaller gender wage gaps in SOEs compared to private firms in Northern and Western European countries as well as Southern Europe could reflect more intense scrutiny of gender wage gaps in firms under direct government control in these countries, potentially related to the stricter enforcement of equal pay and/or pay transparency laws.[2]

Figure 9. Gaps in state-owned enterprises are large in Central and Eastern European countries

Difference in women's hourly earnings relative to men, %, 2014



Note: The chart compares gender wage gaps in state-owned enterprises relative to privately-owned firms. It shows log-percent differences in women hourly earnings relative to men with the same level of educational attainment, age and tenure, in these two broad sectors. Gaps are obtained estimating, separately for each country, the following regression specification: $\log(w_i) = \beta_F female_i + X_i\beta_1 + I_i + \varepsilon_i$, where log denotes the natural log operator, w_i is hourly earnings of individual *i*, $female_i$ is a 0/1 gender dummy, X_i is a vector of control variables, including age-by-education dummies and two dummies for apprentices and casual workers, I_i are 2-digit level industry dummies and ε_i is the error term. The specification is estimated separately over the two restricted samples of state-owned enterprises and privately owned firms. State-owned enterprises are defined as firms under public control. The Health, Education and Public Administration sectors are excluded from the sample. The equation is estimated on the 2014 sample. Dots denoted by "CEE", "SEur" and "NWE" report statistics for, respectively, the average Central and Eastern, Southern and Northern and Western European country.
Luxembourg and Turkey are excluded since information on public control is not available.
Source: OECD calculations based on the Eurostat Structure of Earnings Data.

Notes:

1. SOEs are defined as firms under government control in industries excluding the public sector (education, health, government). On average across countries, they account for 6% of total employment in the Eurostat Structure of Earnings Survey.
2. Gender wage gaps are generally smaller in the public sector than in the private sector despite soft budget constraints but to a lesser extent so in Central and Eastern European countries than elsewhere (Figure B.7).

6. Policy implications and concluding remarks

45. The results in this paper suggest that explanations based on the child penalty ("glass ceilings") and discrimination ("sticky floors") both have some validity in explaining the gender wage gap. On average across countries, the increase in the gender wage gap around the birth of the first child and in the following years is larger than the gap before childbirth, which the life-cycle accounting framework developed in this paper attributes to social norms and discrimination, but there are large differences across countries. On average across Northern and Western European countries, explanations based on the child penalty appear to play a dominant role (explaining around 75% of the gender wage gap), while across Central and Eastern European ones explanations based on social norms and discrimination appear to be more important (explaining around 60% of the gender wage gap). On average, Southern European countries fall between these polar cases but even within country groups there is significant heterogeneity, suggesting that the policy mix to address the gender wage needs to be tailored to each individual country's circumstances rather than one policy mix fitting a broad range of countries.

46. In countries where compensating wage differentials are an important driver of the gender wage gap, one focus of public policy could be to make non-wage job characteristics that are particularly valued by women more widely accepted by employers. The share of part-time work is currently higher among women than men and part-time workers face a significant wage penalty in most OECD countries (Figure B.4), which contributes to gender wage gaps. Making voluntary part-time work more widely accepted, including by giving workers the right to request a reduction in working time (or flexible working time) – with a pro rata reduction in monthly earnings but without re-negotiating the existing employment contract – could contribute to reduce this important source of gender wage gaps (OECD, 2016[32]). In Denmark, for instance, where this right was introduced in the year 2002, a large proportion of both women and men work part-time and there is no wage penalty for part-time work.[27] Women also tend to take up jobs with lower wages to compensate for shorter commutes (Le Barbanchon, Rathelot and Roulet, 2021[33]). Promoting telework could reduce this source of the gender wage gap, and would require strengthening digital infrastructure to increase network access and speed for all workers as well as digital adoption by firms; enhancing workers' ICT skills through training; as well as raising employers' management capabilities through the diffusion of managerial best practices (Nicoletti, von Rueden and Andrews, 2020[34]; OECD, 2020[35]).

47. The downside of making voluntary part-time work, flexitime and telework more widely accepted is that it may limit women's opportunities for skill accumulation and career progression. Part-time work, flexitime and telework risk reducing exposure to more experienced and higher-skilled co-workers, as well as opportunities for building up professional networks, e.g. if flexitime implies working outside core business hours, which may limit wage progression. Quasi-experimental evidence from Chinese call

[27] In other countries that have such legislation in place, such as Germany and the Netherlands, the part-time penalty is high from a cross-country perspective, suggesting that measures to make part-time work more widely accepted need to be complemented with measures to promote human capital accumulation, including lifelong learning.

centres, for instance, suggests that people on telework are less likely to be promoted than their physically-present peers (Bloom et al., 2015[36]).

48. Normalising voluntary part-time work and telework should therefore be complemented with measures to reduce the need for women to opt for these working arrangements rather than full-time jobs with physical presence, especially in countries where slowed skill accumulation is an important driver of the gender wage gap. This includes family policies such as the provision of universal childcare and the harmonisation of parental leave for men and women. The evidence suggests that early childhood spending raises both female labour supply and their wages relative to men (Olivetti and Petrongolo, 2017[37]). A number of countries, including Finland, Iceland, Norway and Sweden, have introduced non-transferable leave for the father, which may raise female labour supply and wage progression over their working lives.[28] Reducing effective marginal tax rates on second earners would also promote female labour market participation and human capital accumulation, as low-paid second earners often take home less than 50% of their gross earnings, including in Belgium and Germany (OECD, 2016[38]). Evidence from Canada, Ireland and Sweden suggests that the partial or complete individualisation of income taxation significantly raises the employment rate of married women (Doorley, 2018[39]; Selin, 2014[40]; Crossley and Jeon, 2007[41]).

49. While addressing the drivers of the child penalty would substantially reduce the gender wage gap in most Northern and Western European countries, in many Central and Eastern European countries additional measures to address discrimination against women may be needed. This includes promoting pay transparency; strengthening competition in product markets; raising wage floors where they are currently low; and combating gender stereotyping.

- Evidence from Canada, Denmark and Switzerland suggests that pay transparency laws tend to reduce gender wage gaps (Baker et al., 2019[42]; Bennedsen et al., 2019[43]; Vaccaro, 2017[44]).
- Strengthening product market competition – which tends to be weaker in Central and Eastern as well as Southern European countries than in Northern and Western ones – would make discriminatory hiring practices less viable. Stronger product market competition would reduce employers' ability to afford foregoing profits from hiring lower-paid women, which would in turn raise the market-level of female wages relative to those of men (Becker, 1971[10]). The evidence suggests that stronger product market competition tends to reduce the gender wage gap (Black and Brainerd, 2004[8]; Hirsch, Oberfichtner and Schnabel, 2014[9]).
- Centralised wage-setting institutions, such as collectively-agreed wage floors or statutory minimum wages, raise the relative wages of those near the bottom of the distribution. If women are overrepresented at the bottom of the wage distribution, then raising wage floors may raise women's wages relative to men. Indeed, the evidence suggests that differences in wage compression explain a significant part of differences in the gender wage gap across countries and within countries over time (Kahn, 2015[45]).
- Gender stereotypes in the media and in the materials that parents and educators use to raise children may influence educational and occupational sorting, and thereby the gender wage gap (Bertrand, 2020). A number of European countries, including Belgium, Finland, France, Norway and the United Kingdom, have introduced legislation that aims to limit the use of gender stereotypes in advertising.

[28] While a number of studies find that such reforms reduce the gender wage gap (Johansson, 2010; Andersen, 2018; Druedahl et al., 2019), others find no significant effects (Ekberg et al., 2013).

50. In some countries, the COVID-19 crisis has lent policies to reduce the gender wage gap particular urgency. On average across the countries covered in this paper, the decline in women's employment and hours worked has been similar to the one of men, but in a number of countries (including most Central and Eastern European countries, Belgium, France, Denmark, Greece and Turkey) declines in total hours worked have been particularly pronounced for women (Box 4). In these countries, declines in employment and hours worked risk reducing women's earnings relative to men in the long term, with the evidence suggesting that job losses during recessions lead to scarring and permanent earnings losses (Davis and Von Wachter, 2011[6]). This risks reversing the narrowing of the gender wage gap over the past two decades (Figure B.8). Combining policies to reduce the child penalty and "glass ceilings" with measures to address discrimination and "sticky floors" will be paramount to avoid such reversal.

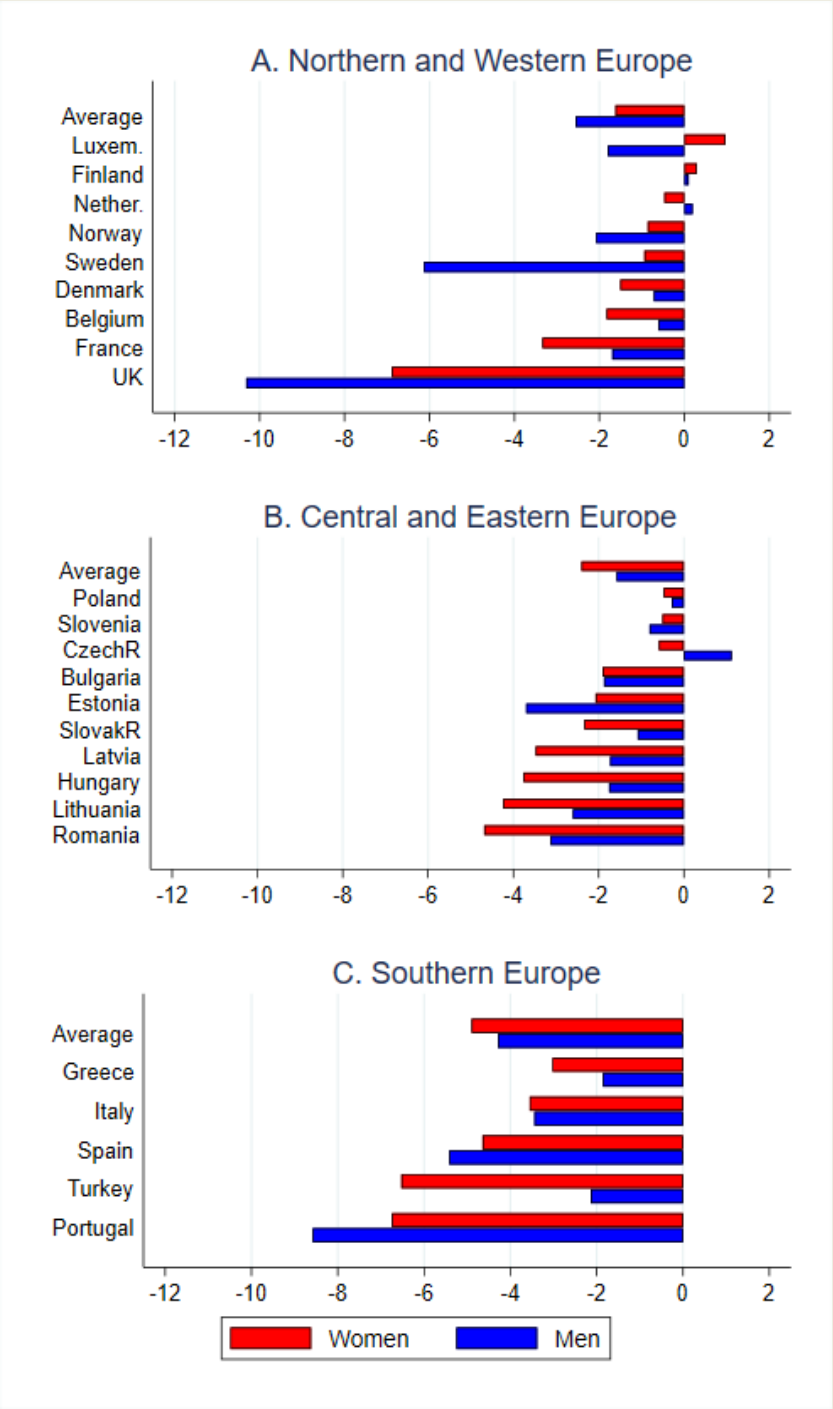
Box 4. Does the COVID-19 crisis risk widening gender wage gaps?

The economic crisis triggered by the COVID-19 pandemic has quickly been labelled a "she-cession", as initial analyses pointed to the fact that furloughs and dismissals were concentrated in sectors typically dominated by women, such as hospitality, retail trade and education (Alon et al., 2020[2]; Lemieux et al., 2020[5]; Farré et al., 2020[4]; Adams-Prassl et al., 2020[3]). This could reverse years of narrowing gender gaps in labour market outcomes, including gender wage gaps.

In contrast to initial studies that relied on data collected through ad-hoc surveys specifically conducted during the March-April 2020 lockdowns, official data for the third quarter of 2020 suggest that, on average across countries, the COVID-19 crisis has affected women's and men's labour market activity to a similar extent (Figure 10). Total hours worked in the third quarter of 2020 fell relative to the last quarter of 2019 in almost all countries covered by the analysis but, on average across countries, the decrease was similar for men (-2.5%) and women (-2.6%), as large female employment losses in the hospitality and education sectors were mirrored by large employment losses among men in the manufacturing and construction sectors (Figure B.9). However, in a number of countries, including most Central and Eastern European countries, Belgium, France, Denmark, Greece and Turkey, total hours worked fell more for women than men, raising the risk of widening gender wage gaps due to prolonged non-employment spells or reduced working time.[1]

Figure 10. Hours worked fell similarly for men and women following the COVID-19 shock

Change in total hours worked in the main job, 2020Q3 – 2019Q4, %



Note: The chart shows percent changes in total hours worked (seasonally adjusted) in the main job in the third quarter of 2020 relative to the last quarter of 2019 across countries and for women and men. Germany is excluded due to data unavailability.
Source: Eurostat (Index of total hours worked in the main job by sex and age group).

Of course, statistics on labour market activity do not account for the sharing of non-market work within households, including increased childcare responsibilities due to school and day-care closures. If additional non-market work mainly falls on women rather than men, women's professional development could be slowed, which could lead to widening gender wage gaps even in countries where women's labour market activity has thus far been less affected than that of men.

Notes:

1. This pattern is robust to considering the series of employment and average hours worked separately; considering the unemployment rate rather than the employment rate; or focusing on the more immediate effects of the lockdowns in the second quarter of 2020 rather than overall effect over the second and third quarters. The difference between women and men is somewhat more pronounced when the focus is on the second quarter of 2020 (decline of total hours worked for women of 15.5% vs 13.8% for men) but the fact that the gap between women and men disappeared after the lockdowns suggests that scarring has thus far been limited. Moreover, even in countries where total hours worked declined by more for women than men, the difference is generally too small to imply large effects on the gender wage gap in the medium term. Assuming that employment losses during the COVID-19 crisis reduce wages by 10% in the medium term, a 1 percentage point gender differential in employment losses (around the average in this group of countries in the third quarter of 2020) would translate into a 0.1 percentage point widening of the gender wage gap.

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Annex A. Solving the life-cycle accounting framework

The system of Equations (2a-2e) can be solved for *D*, *CD*, SH_1, SH_2 and SH_3 as a function of the $\beta_{F,j}$ coefficients and first child-fertility rates f_j, where the subscript *j* indicates age groups:

$$\boldsymbol{D = \beta_{F,14-19}} \tag{4a}$$

$$\boldsymbol{CD = \frac{\beta_{F,20-29} - \beta_{F,14-19}}{f_{20-29}}} \tag{4b}$$

$$\boldsymbol{SH_1 = \frac{\beta_{F,30-39} - \beta_{F,20-29}}{f_{20-29}} - f_{30-39}\frac{\beta_{F,20-29} - \beta_{F,14-19}}{f_{20-29}^2}} \tag{4c}$$

$$\boldsymbol{SH_2 = \frac{\beta_{F,40-49} - \beta_{F,30-39}}{f_{20-29}} - f_{30-39}\frac{\beta_{F,30-39} - \beta_{F,20-29}}{f_{20-29}^2} + f_{30-39}^2\frac{\beta_{F,20-29} - \beta_{F,14-19}}{f_{20-29}^3}} \tag{4d}$$

$$\boldsymbol{SH_3 = \frac{\beta_{F,50-59} - \beta_{F,40-49}}{f_{20-29}} - f_{30-39}\frac{\beta_{F,40-49} - \beta_{F,30-39}}{f_{20-29}^2} + f_{30-39}^2\frac{\beta_{F,30-39} - \beta_{F,20-29}}{f_{20-29}^3} - f_{30-39}^3\frac{\beta_{F,20-29} - \beta_{F,14-19}}{f_{20-29}^4}} \tag{4e}$$

The overall gender wage gap is the weighted average of the age-specific gaps ($\beta_{F,j}$s):

$$\boldsymbol{\beta_F = w_{10}\beta_{F,14-19} + w_{20}\beta_{F,20-29} + w_{30}\beta_{F,30-39} + w_{40}\beta_{F,40-49} + w_{50}\beta_{F,50-59}} \tag{5}$$

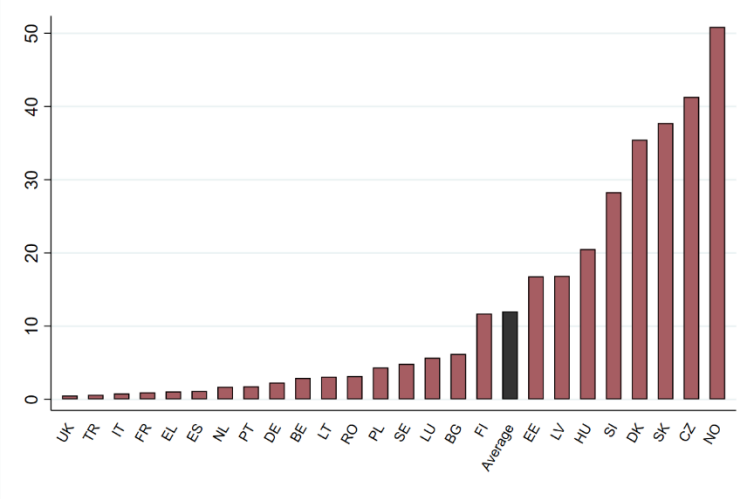
where the weights are the number of workers in each age bracket as a share of all workers in the sample. Substituting Equations (2a) - (2e) into Equation (5) and rearranging, the gender wage gap as a function of its three contributions is given by:

$$\begin{aligned}\boldsymbol{\beta_F} = &\underbrace{\boldsymbol{(w_{10} + w_{20} + w_{30} + w_{40} + w_{50})D}}_{\textbf{contribution of discrimination}} + \\ &+ \\ &\underbrace{\boldsymbol{\left(f_{20-29}(w_{20} + w_{30} + w_{40} + w_{50}) + f_{30-39}(w_{30} + w_{40} + w_{50})\right)CD}}_{\textbf{contribution of compensating differentials}} + \\ &+ \\ &\underbrace{\begin{aligned}&\boldsymbol{\left(f_{20-29}(w_{30} + w_{40} + w_{50}) + f_{30-39}(w_{40} + w_{50})\right)SH_1} + \\ &+ \\ &\boldsymbol{\left(f_{20-29}(w_{40} + w_{50}) + f_{30-39}(w_{50})\right)SH_2} + \\ &+ \\ &\boldsymbol{\left(f_{20-29}(w_{50})\right)SH_3}\end{aligned}}_{\textbf{contribution of slow human capital accumulation}}\end{aligned} \tag{6}$$

Annex B. Supplementary Figures

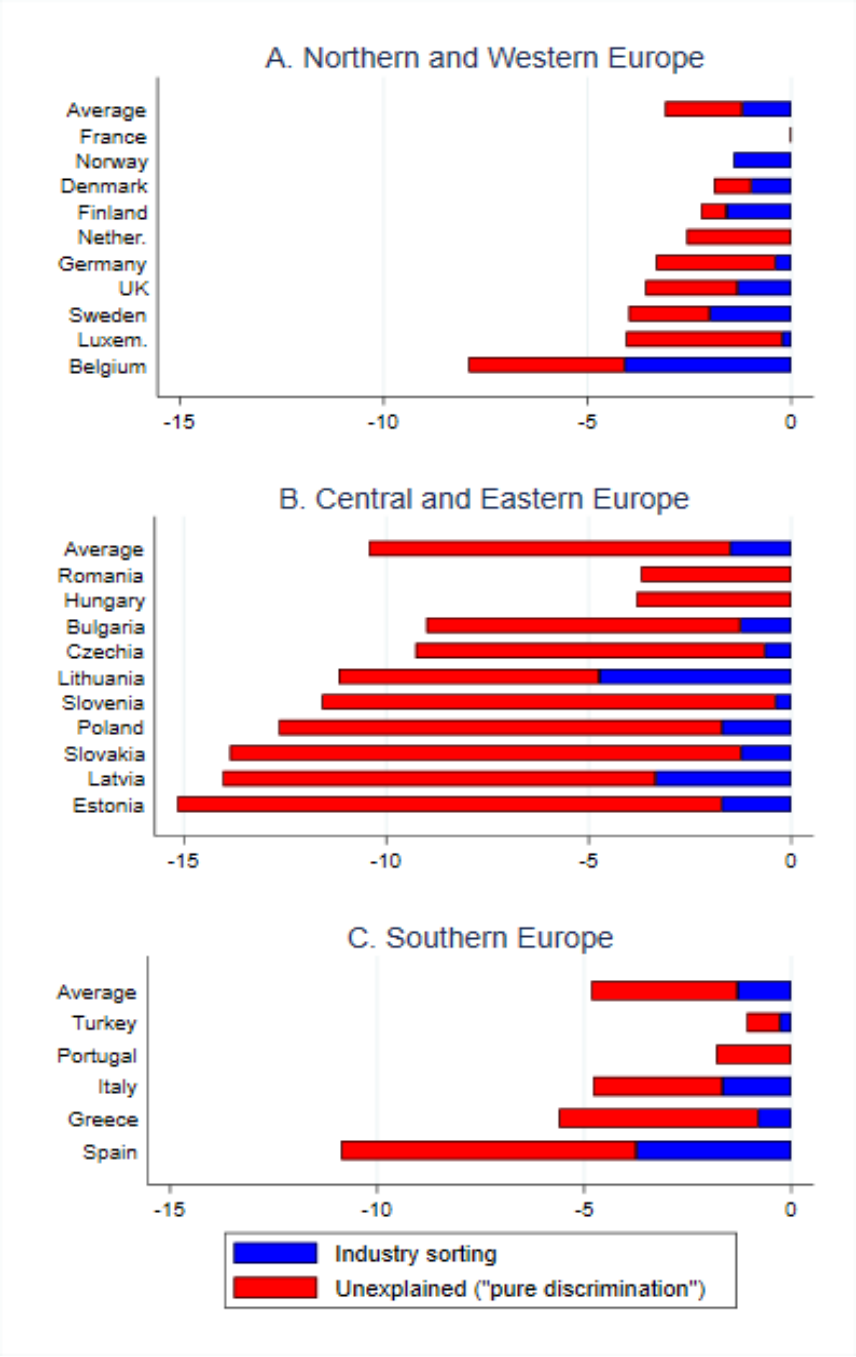
Figure B.1. Sample coverage

Surveyed employees as a share of total employment (2014, %)



Source: OECD calculations based on the Eurostat Structure of Earnings Data.

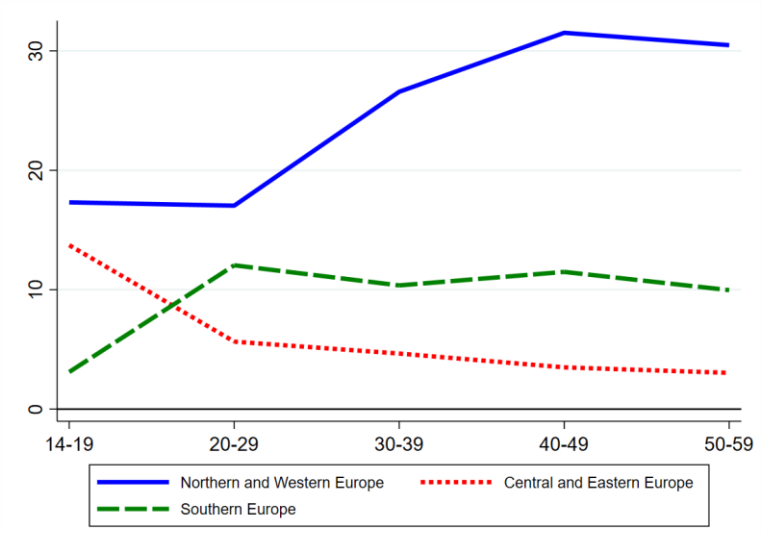
Figure B.2. Industry sorting explains about 20% of the gap before childbirth on average



Note: The chart shows the gender wage gap before childbirth (14-19 age bracket) for each country, decomposing it into "industry sorting" (blue bars) and "pure discrimination" (red bars). The contribution of industry sorting is obtained taking the difference in the unconditional gender wage gap and the gender wage gap conditional on controlling for industry dummies for the age 14-19 category. The contribution of pure discrimination is obtained as the conditional gender wage gap estimated from the specification just described.
Source: OECD calculations based on the Eurostat Structure of Earnings Survey.

Figure B.3. Women transition to part-time jobs in Northern and Western Europe

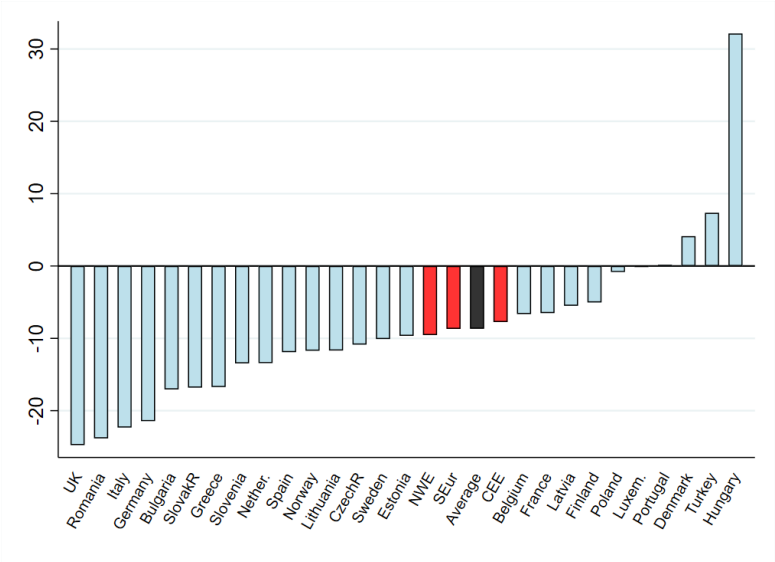
Share of part-time work, women-men, % points, 2014



Note: The chart depicts differences in the share of women relative to men working part-time by age group and for the average Northern and Western (blue solid line), Central and Eastern (red short-dashed line) and Southern European country (green long-dashed line). The statistics refer to the year 2014.
Source: OECD calculations based on the Eurostat Structure of Earnings Data.

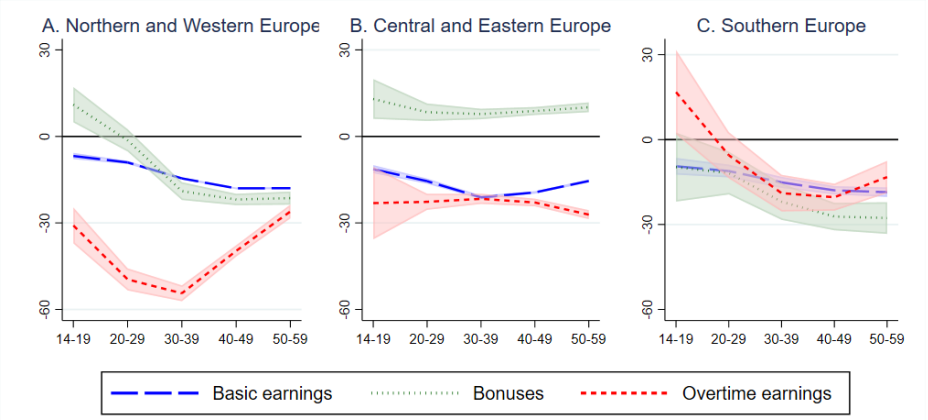
Figure B.4. Part-time penalty across countries

Difference in wages between part-time and full-time workers, %, 2014



Note: The chart shows log-percent differences in the average wage of a part-time relative to a full-time worker, controlling for basic worker's characteristics, such as gender, level of education attainment and tenure. Differences are obtained estimating the φ coefficient from the following specification: $\log(w_i) = \beta_F female_i + X_i\beta_1 + \varphi pt_i + \varepsilon_i$, where log denotes the natural log operator, w_i is hourly earnings of individual *i*, $female_i$ is a 0/1 gender dummy, X_i is a vector of control variables, including age-by-education dummies and two dummies for apprentices and casual workers, pt_i is a part-time dummy and ε_i is the error term. The equation is estimated on the 2014 sample. Bars denoted by "CEE", "SEur" and "NWE" report statistics for, respectively, the average Central and Eastern, Southern and Northern and Western European country.
Source: OECD calculations based on the Eurostat Structure of Earnings Survey.

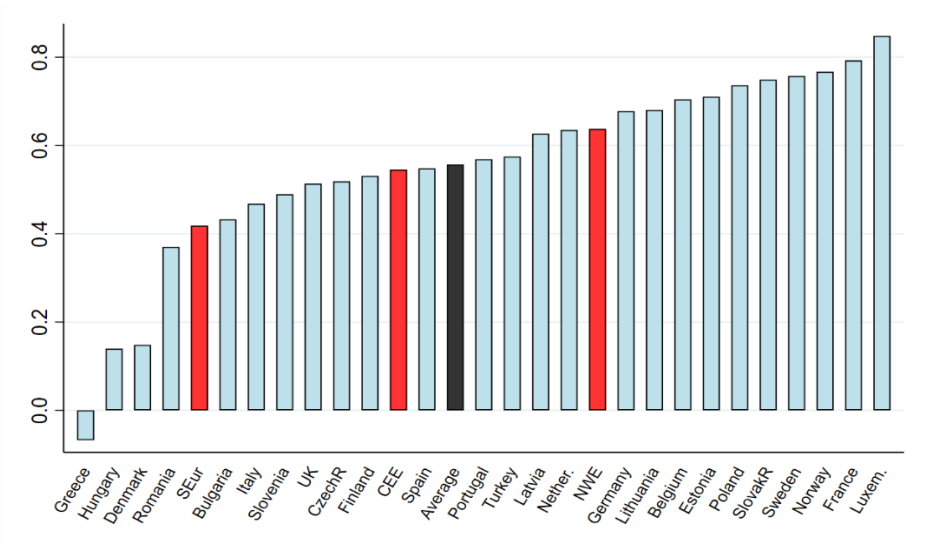
Figure B.5. Gaps in overtime earnings widen during peak childbearing age



Note: The chart decomposes differences in women's hourly earnings relative to men over the life cycle into three broad components: differences in basic hourly earnings (blue long-dashed line), differences in bonuses (green short-dashed line) and differences in hourly overtime earnings. The statistics are obtained estimating the β_F^i coefficients from alternative specifications of Equation (1), in which the dependent variable (w_i) is replaced with three alternative ones, constructed as follows. Basic hourly earnings are equal to the difference between the main earning variable and the sum of overtime earnings and special payments for shift work, divided by overall hours worked. Bonuses are equal to the monthly value of annual bonuses divided by overall hours worked. Overtime hourly earnings are equal to the sum of overtime earnings and special payments for shift work divided by overall hours worked. Estimates are for the average Northern and Western, Central and Eastern and Southern European country. Shaded areas represent 2 standard errors confidence bands.
Source: OECD calculations based on Eurostat Structure of Earnings Survey.

Figure B.6. Women sort in industries with a high prevalence of part-time work among men

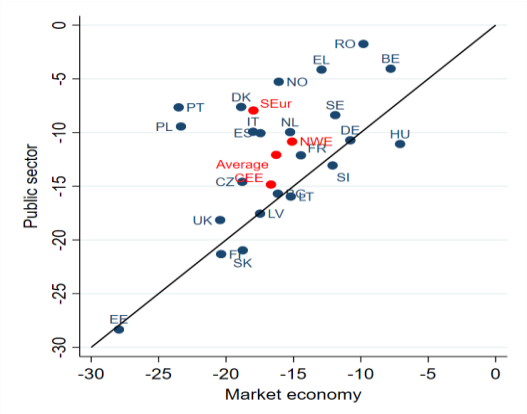
Cross-industry correlation of female employment share and share of part-time among men, 2014



Note: The chart shows the cross-industry correlation between the share of women employed in a given industry and the share of men in that industry working part-time, for each country in the sample. Bars denoted by "CEE", "SEur" and "NWE" report statistics for, respectively, the average Central and Eastern, Southern and Northern and Western European country. The statistics refer to the year 2014.
Source: OECD calculations based on the Eurostat Structure of Earnings Data.

Figure B.7. Gender wage gaps in the public sector are smaller than in the market economy

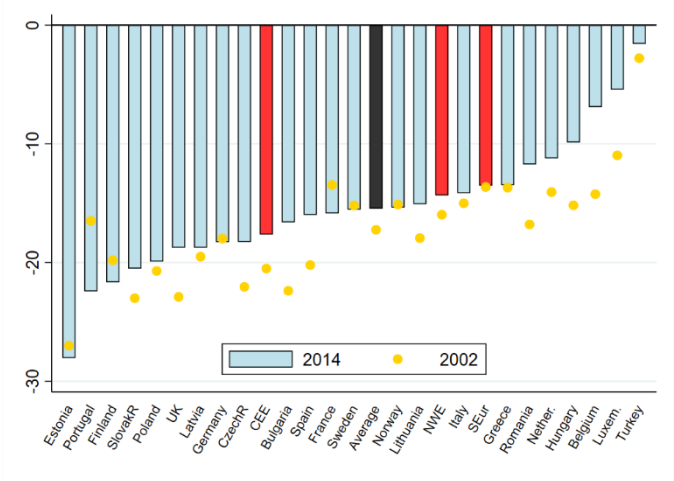
Difference in women's hourly earnings relative to men, in the public sector and the market economy (2014, %)



Note: The chart compares gender wage gaps in the public sector relative to the market economy. It shows log-percent differences in women hourly earnings relative to men with the same level of educational attainment, age and tenure in these two broad sectors. Gaps are obtained estimating, separately for each country, the regression specification described in the note to Figure 3. The specification is estimated separately over the two restricted samples of the public sector and the market economy. The public sector is composed of all entities in the Health, Education and Public Administration sectors that are under public control, while the market economy is composed of all other firms (whether under public or private control). The equation is estimated on the 2014 sample. Dots denoted by "CEE", "SEur" and "NWE" report statistics for, respectively, the average Central and Eastern, Southern and Northern and Western European country. Luxembourg and Turkey are excluded since data on public sector entities are not available.
Source: OECD calculations based on the Eurostat Structure of Earnings Data.

Figure B.8. Gender wage gaps have been decreasing over the last decade

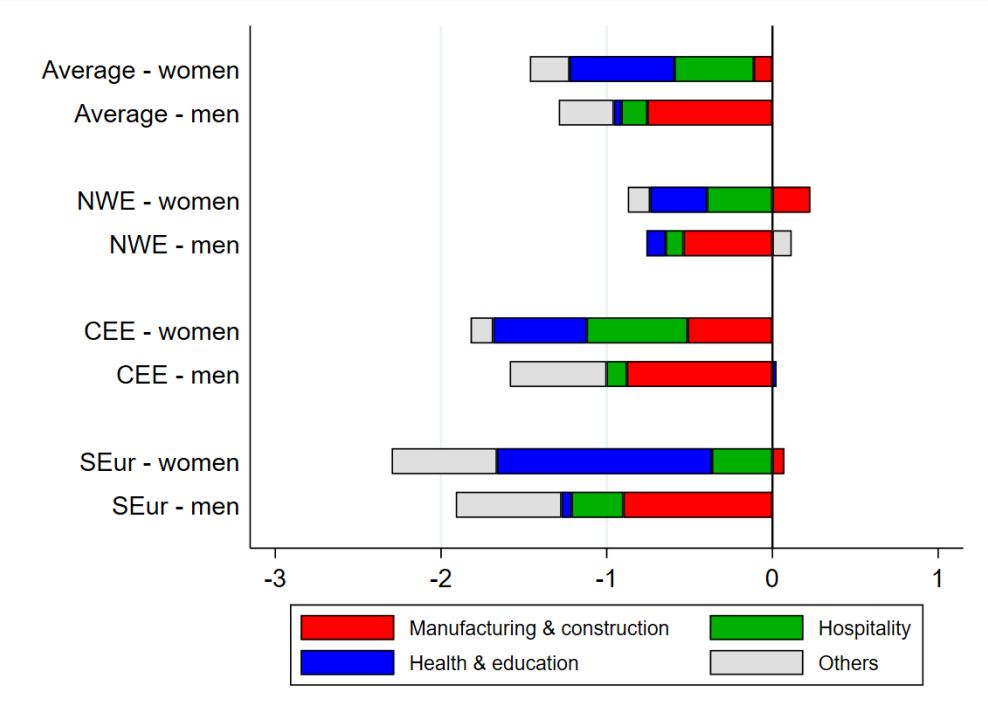
Hourly earnings, women – men, 2014 and 2002, %



Note: The chart compares the evolution of gender wage gaps from the beginning (dots) to the end of the sample (bars). Gaps are estimated from the regression specification described in the note to Figure 3. Due to data availability issues, estimates for Germany, Sweden and Turkey are for the 2006 and 2014 samples, those for the Netherlands are for the 2010 and 2014 samples. For all other countries, estimates are for the 2002 and 2014 samples. Bars denoted by "CEE", "SEur" and "NWE" report statistics for, respectively, the average Central and Eastern, Southern and Northern and Western European country.
Source: OECD calculations based on the Eurostat Structure of Earnings Data.

Figure B.9. Manufacturing and construction contributed to male employment losses

Change in employment in 2020 Q3 relative to 2019 Q4, by economic sector, %



Note: The chart depicts percent changes in the number of employed men and women, in the average country in the sample, as well as the average Northern and Western, Central and Eastern and Southern European country, in the third quarter of 2020 relative to the last quarter of 2019 in different sectors of the economy. Unadjusted data.
Source: Eurostat and OECD calculations.