RESEARCH REPORT

Eurofound

European Commission

Employment and labour markets

European Jobs Monitor 2021: Gender gaps and the employment structure

Joint report by the European Commission's Joint Research Centre and Eurofound

European Jobs Monitor 2021: Gender gaps and the employment structure

When citing this report, please use the following wording:
Eurofound and European Commission Joint Research Centre (2021), *European Jobs Monitor 2021: Gender gaps and the employment structure*, European Jobs Monitor series, Publications Office of the European Union, Luxembourg.

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Acknowledgements: Professors Daniel Oesch (University of Lausanne) and Jill Rubery (University of Manchester), Greet Vermeylen and Miguel Hernandez (European Commission – DG-JUST) and Vytautas Peciukonis (European Institute for Gender Equality (EIGE)) for participating in expert meetings to discuss preliminary findings, as well as Irene Mandl (European Labour Authority) and EIGE colleagues for detailed comments on a draft version.

Luxembourg: Publications Office of the European Union

Print:	ISBN 978-92-897-2240-7	ISSN 2363-0825	doi:10.2806/284722	TJ-AN-20-001-EN-C
PDF:	ISBN 978-92-897-2239-1	ISSN 2363-0833	doi:10.2806/16416	TJ-AN-20-001-EN-N

This report and any associated materials are available online at http://eurofound.link/ef21009

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While Eurofound acknowledges that the concepts of gender and sex are different, in this report, unless otherwise stated, gender is used to denote female and male characteristics.

The European Foundation for the Improvement of Living and Working Conditions (Eurofound) is a tripartite European Union Agency established in 1975. Its role is to provide knowledge in the area of social, employment and work-related policies according to Regulation (EU) 2019/127.

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UK	United Kingdom

Country groups mentioned in the report

Group	Composition
EU15	15 EU member countries prior to the accession of ten candidate countries on 1 May 2004: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.
EU14	EU15 minus UK

Executive summary

Introduction

One of the most striking developments in European labour markets over the last half-century has been the huge rise in women's labour market participation. Both the lengthening of working lives and migration have further boosted the EU workforce despite unfavourable demographic trends. This report analyses how these large increases in labour supply have been distributed by sector, by occupation and across the wage distribution. The focus is in particular on workforce feminisation.

Although there are many more women at work now than a generation ago, women and men continue to work largely in different types of jobs. Fewer than one in five workers are in jobs where the workforce includes at least 40% of each gender. The increase in women's employment has been seen largely in jobs where women already predominate. These include many of the sectors with the highest employment growth rates in developed economies over the last two generations and where, owing to demographic shifts, demand is likely to continue expanding in the years to come – health and residential care, for example. Structurally declining sectors – such as agriculture and manufacturing – on the other hand tend to be dominated by men. Women are also outperforming men educationally. Despite these relatively favourable developments, gender gaps in employment and wages have been contracting only gradually in recent years. This report seeks to make connections between changes in employment structure, sociodemographic trends and the persisting differences in labour market outcomes for men and women.

Policy context

Gender equality is a fundamental value of the EU, enshrined in the Treaty on the Functioning of the European Union, which set the EU the task of eliminating inequalities and promoting equality between men and women in all of its activities. More recently, the European Pillar of Social Rights, formulated in 2017, refers to the need to ensure and foster equality in the treatment of and opportunities provided to women and men in all areas, including participation in the labour market, terms and conditions of employment, and career progression. It also reaffirms that women and men have the right to equal pay for work of equal value. Delivering on the European Pillar of Social Rights' gender-related objectives, a series of measures has been undertaken. In March 2020, the Commission launched a new Gender Equality Strategy for 2020–2025. Areas of particular relevance for this report are the strategy's focus on pay transparency, closing the gender pay and employment gaps, and reducing the barriers to labour market opportunities represented by occupational/job segregation, notably by gender. The Action Plan for the European Pillar of Social Rights includes a proposed directive to strengthen the application of the principle of equal pay for equal work or work of equal value between men and women through pay transparency and enforcement mechanisms. This includes gender pay gap reporting obligations for large companies.

Key findings

- Cumulative headcount employment growth since 1998 has been 2:1 in favour of women and it has been employment growth among women that has driven increases in the employment rate. The increase has been strongest among mid-aged (30–49 years) and especially older (50+ years) women.
- The rise in women's employment has led to low-paying jobs, which were formerly dominated by men, becoming dominated by women. However, women have also benefited more than men from employment growth in well-paid jobs.
- Three predominantly state-paid sectors – public administration, health and education – account for around 60% of net recent (2011–2019) employment growth in mid- to high-paying jobs among women, but account for only very modest employment growth (<10%) among men. Men's employment growth has been mainly in other private service sectors.
- Despite closing gender employment gaps, jobs are not becoming more gender mixed. The share of gender-mixed jobs (where neither gender's share is >60%) in EU employment declined from 27% to 18% between 1998 and 2019. The largest growth in employment has occurred mainly among women and in female-dominated jobs.
- Trends in gender segregation by job differ between central and eastern European Member States and the EU14 (the EU15 minus the United Kingdom). In the former, there has been a steady increase in gender segregation since 1998, although gender segregation in employment was initially lower in these countries than in the EU14. In EU14 Member States, gender segregation has been declining since 2011.

- Female-dominated jobs are systematically different from male-dominated or gender-mixed jobs in terms of their task profile. The biggest difference lies in the 'caring' content of jobs (which is much more common in female-dominated jobs). Machine use is much more common in male-dominated work.
- Information and communications technology (ICT) use, literacy, numeracy and autonomy tend to be higher in gender-mixed jobs and much lower in gender-dominated jobs. These attributes are also associated with cognitively demanding, higher paid work.
- The gender pay gap is highest in the top job–wage quintile. This is a common pattern across Member States.
- There is a consistent pattern of greater 'returns to education' (the positive effect of education on earnings) among men than among women. This pattern becomes clearer the further up the qualification ladder one goes, and the highest levels of 'returns to education' are among those with post-tertiary qualifications.
- The reasons behind the gender pay gap remain largely unexplained. Observable characteristics such as part-time work, education and age/tenure are contributory factors to a little less than one-third of the gap.
- The immediate employment impacts of COVID-19 have been most sharply felt by low-paid workers, especially low-paid women.

Policy pointers

- Current policy targets set out in the European Pillar of Social Rights Action Plan envisage higher employment rates and reductions in the gender employment gap. To meet the target levels of a 78% employment rate and a halving of the gender employment gap (which in 2019 was 11.7 percentage points) by 2030, women's employment will have to increase at a rate at least three times faster than that of men until the end of the decade. This is a significant challenge, as the gender employment gap has been fairly stable since 2014.
- The state's role as an employer has been crucial in boosting women's employment, in particular in well-paid jobs in sectors such as health, education and public administration. Policy decisions in these sectors – namely whether to reduce or expand public expenditure on such services – have a more direct bearing on the quality and levels of women's employment than on those of men's employment.
- The persistence of gender job segregation suggests that more needs to be done through education and training systems and other incentives to encourage young men and women (15–29 years) to engage in occupations dominated by the other gender.
- The measures most effective in reducing the gender pay gap will be those targeting the much higher pay gaps in well-paid jobs, for example those that address the 'glass ceilings' hindering women's advancement or that introduce temporal flexibility into long-hours work cultures, which have tended to boost male pay premiums. However, given the fact that most women do not work in well-paid jobs, this should be accompanied by greater valorisation of work – and increased wages – in female-dominated sectors such as health, education and public administration, starting at entry level.
- From a household perspective, measures to incentivise women's employment through the involvement of men in caring responsibilities, for example effective paternity leave schemes and stopping tax incentives that favour the single breadwinner model, can contribute directly or indirectly to lowering gender gaps in both employment and wages.

Introduction

The European Jobs Monitor uses a jobs-based approach to explore changes in the employment structure by sector and occupation. It contributes to the debate about whether labour markets are polarising – a situation where employment growth is weakest in mid-paying jobs and strongest in the highest and lowest paying jobs – or upgrading – where employment growth is strongest in well-paid jobs. These are the two empirical patterns of employment change that have been most frequently observed in advanced economies in recent decades. Knowing which of the two patterns is more prevalent gives an important contextual basis to inform policymaking.

Much of the relevant employment polarisation literature (Autor et al, 2003; Goos et al, 2009) is based on analysing the shifting demands for jobs or tasks where the main factor at play is technological change, so-called 'skill-biased' or 'routine-biased' technological change. According to these analyses, the application of new technologies to work shifts demand away from either low-skilled or routine jobs to higher skilled or less routine jobs.

However, labour demand is only one of the many socioeconomic forces influencing the structure of employment. Changes in the institutional framework of the labour market are also important, including changes to collective bargaining, minimum wage systems, the taxation of labour, social welfare and active labour market policies (Eurofound, 2017). Each of these policies interacts with other structural forces to condition the demand for labour, in particular in the bottom half of the wage distribution.

The focus on technological change and labour **demand** also tends to divert attention from another important dimension, that of labour **supply**.

One of the most striking developments of the last half-century has been the huge rise in the labour market participation of women. Two out of every three net new jobs created over the last two decades in the EU were taken by women. At the same time, sharply rising employment rates among older workers due to population ageing and retirement policy changes have increased the share of older workers in the labour market. Finally, the EU has a significant net migration balance with the rest of the world and takes in more workers than it exports. Each of these factors, which add to the quantum of employment, is more sociodemographic in nature, distinct from and largely independent of technologically induced employment shifts.

This report examines the impacts of the changing contours of labour supply on job or occupational structure over the last quarter-century in Europe. The primary focus is on gender, with a secondary focus on workforce ageing.[1] The broad questions explored in the analysis can be summarised as follows.

- How has the occupational and sectoral distribution of employment changed, in particular as regards the gender composition, and to what extent are these developments attributable to the process of sociodemographic change, as opposed to technological change or globalisation?
- In what jobs and where in the job–wage distribution has the huge net expansion of women's (and older workers') employment tended to occur?

The policy relevance of these questions relates to fundamental principles going back to the origins of the EU in 1957. Equality between women and men is one of the objectives of the EU. It is also a key principle of the European Pillar of Social Rights, which has been given policy expression in the recent proposed directive on pay transparency, in targets to reduce the gender employment gap by half by 2030 and in the 2020–2025 Gender Equality Strategy's commitment to reduce workplace gender gaps (European Commission, 2017 and 2021a).

This report addresses these policy concerns by exploring the structural antecedents of gender pay and employment gaps. These can trace their roots to traditional assumptions of what tasks constitute 'men's work' and 'women's work' (physical versus nurturing roles, for example), which are then reflected in different concentrations of employed men and women across different sectors, occupations and jobs.

Women and men tend to work in different types of jobs. The majority of men and women work in sectors that are dominated by one sex (for example, construction and manufacturing sectors predominantly employ men, while personal care and education sectors predominantly employ women) (EIGE, 2021a). The increase in women's employment has, in particular, manifested itself in the growth of the 'care economy', as many care activities that were previously provided

1 There is only limited reference to the dimension of migration in this report, on the grounds that its inclusion would have overcomplicated the analysis.

informally within families have been formalised in paid jobs (Dwyer, 2013). This includes many of the sectors with the highest employment growth rates in developed economies over the last two generations and in which, owing to demographic shifts, demand is forecast to continue expanding in the years to come – health and residential care, for example. Hypotheses regarding care work underline that these developments do not fit the narratives of structural employment change determined exclusively by technology or computerisation. They are shaped more by sociodemographic vectors of change and are closely linked to political decisions.

The modest share of gender-balanced jobs in overall employment has been a persistent feature of European labour markets, despite the narrowing of the gender employment gap. Much research identifies occupational or job segregation as one of the factors strongly associated with gender pay gaps (Blau and Kahn, 2007; European Commission, 2018). For example, caring or service jobs undertaken by women are undervalued compared with jobs requiring comparable qualifications and of a comparable type (manual and non-routine jobs) undertaken by men, for example cleaners and food preparation assistants compared with lower skilled manufacturing or construction jobs, respectively. Jobs performed by women are largely found at the bottom of the wage distribution, while those performed by men are found nearer the middle. Men on average earn 14% more per hour than women in the EU, and jobs employing mainly men enjoy a wage premium over jobs mainly carried out by working women (Eurostat, 2021).

The analysis that follows provides some connecting threads linking the phenomena of sociodemographic change, changing patterns of labour force participation and various gender gaps. For reasons of data availability by country and owing to classification changes in the core occupational (International Standard Classification of Occupations (ISCO)) and sector (Nomenclature of Economic Activities (NACE)) variables, the periods covered vary across chapters, but where possible extend back to the late 1990s and cover up to 2019, with a short analysis (Box 4) of the first employment impacts of the COVID crisis (up to Q4 2020). The main source of data used is the European Union Labour Force Survey (EU-LFS).

The report is structured as follows. The first chapter provides an overview of demographic changes in the period 1995–2019 in selected EU Member States, showing how they are linked to shifts in occupational/labour market status. This sets the background for the analysis that follows and demonstrates the significance of workforce feminisation and workforce ageing over the period, and also how this varies across countries. The second chapter provides a descriptive analysis of job-level gender employment segregation in the EU, based on five job concentration categories across the spectrum, from female-dominated jobs (>80% women) to male-dominated jobs (>80% men). The third chapter differentiates between marginal changes in headcount employment at EU aggregate level (1998–2019) and at national level (2011–2019) by gender and job–wage quintile. Chapter 4 shows how job task profiles differ based on the share of men and women in the job. Chapter 5 uses Structure of Earnings Survey (SES) data to analyse how the gender pay gap varies by personal and labour market characteristics, including job–wage quintiles. The final chapter offers summary conclusions.

1 Demographic and occupational change in Europe

In this opening chapter, the interaction between demographic and occupational change is explored empirically using demographic and labour market data from a selection of EU Member States over a period of two and a half decades (1995–2019).

To begin with, it is useful to clarify the main concepts and make explicit the approach adopted in the following analyses. The **occupational structure** refers to the distribution of the working population across different occupations and sectors at a given point in time. The main mechanism determining this structure is the division of labour: human labour is much more productive if specialised, and specialised labour within an increasingly complex production and distribution process is what lies behind the phenomenal richness of our societies. In advanced market economies, this complexity is coordinated mostly by two institutions: markets and firms. Markets coordinate exchanges between firms (or productive organisations) in a decentralised way, and firms (or productive organisations) coordinate collaborative production and distribution processes in a hierarchical way. Sectors are a way of classifying productive organisations on the basis of their product and the markets on which they operate, while occupations are a way of classifying roles or positions within productive organisations on the basis of their specialisation and hierarchical position. The distribution of employment by sector and occupation (that is the **occupational** or **jobs structure**) is, therefore, a picture of the division of labour in a society at a given point in time.

The **demographic (or population) structure** refers to the distribution of the general population by age and gender at a given point in time, as is typically represented with a population pyramid. The four mechanisms determining the structure of a population are the rates of birth, death, immigration and emigration, which in turn are determined by socioeconomic factors such as economic development, health, education and the social and cultural norms surrounding family formation.

While the positions in the occupational structure (jobs) are interlinked by relations of economic exchange and subordination (primarily coordinated by markets and firms), the positions in the demographic structure (age and gender groups) are interlinked by relations of economic dependence and specialisation (primarily coordinated by states and families). However, the analogy should not be taken too far: the positions in the occupational structure (jobs) are relatively stable and have real entity (they are not just an attribute of individuals, but are roles that can be occupied by different people), whereas the positions in the demographic structure (age and gender groups) are just attributes of people (with no entity on their own), which, in the case of age, change organically as people grow old.

Both the occupational and the demographic structures are continuously changing and evolving for different reasons. In the literature, the main factors considered to be behind the change in the occupational structure are technical and organisational change, trade, the changing structure of demand, institutional change and changes in the structure of labour supply. Conversely, some of the main factors behind the change in the demographic structure are improvements in health, social and cultural changes in the norms surrounding gender roles and family formation, and education policies.

However, the most important factor for the purposes of this report is that the occupational and demographic structures are strongly interlinked, and are important drivers of change for each other. The demographic structure provides the supply of labour that fills up the positions of the occupational structure. At the same time, the occupational structure is a key determinant of the opportunities in life that are available to the different demographic groups. The occupational structure can act as a barrier or an enabler of individuals' life choices, affecting in turn fertility rates, life expectancy and/or migration trends.

For instance, the increasing labour market participation of women, which is a result of large-scale changes in gender roles in the last few decades, has contributed to the expansion of care and household service occupations. Conversely, the increasing participation of women in employment has led to their greater economic independence and freedom of choice in the domain of family formation, which is likely to have contributed to declining fertility rates and thus to an ageing at the base of the population pyramid. Complementing all of these changes is a continuing increase in life expectancy resulting from better healthcare, better nutrition and reduced mortality.

This chapter will discuss some of the arguments advanced in recent literature about how demographic and occupational changes interact with each other, and will present some new descriptive evidence of this interaction, covering six European countries over a period of two and a half decades.

Relevant literature

The transformation of Europe's population structure from 'young' to 'old' is a long-term trend, a result of the so-called 'demographic transition' initiated approximately two centuries ago. The demographic transition started around 1800 when mortality rates started to decline in northwest Europe and was followed a century later, between 1890 and 1920, by a decrease in fertility rates in most parts of Europe (Lee, 2003). As a consequence, population growth first accelerated and then slowed down with a gradual shift towards low fertility rates, longer life expectancy and population ageing. Since then, continuing sociodemographic change has had profound implications on the structure of the European labour force.

First, it has made the overall labour supply older due to the ageing of the population structure. In fact, the median age of the population living in the EU27 area rose from almost 39 years in 2000 to 44 years in 2020, and it is projected to further increase to approximately 49 years in 2070, according to Eurostat data [demo_pjanind] and [proj_19ndbi] (extracted on 20 October 2021). Second, it has made labour market participation more gender-balanced.

Demographic change and rise in the labour market participation of women

Initially, it was assumed that the historical decline in mortality and fertility rates – labelled as the 'first demographic transition' – would end when fertility reached the replacement level, conventionally considered as a total fertility rate equal to 2.1 births per woman in scenarios of low mortality. However, in the second half of the 20th century, it became clear that the decline in the fertility rates in Europe would not arrest at the replacement level but would continue to decline. As a result, today the total fertility rate of the EU27 area is well below the replacement level, and has stabilised at 1.53 children per woman, according to Eurostat data for 2019 [demo_find] (extracted on 20 October 2021).

These subreplacement fertility rates and the ensuing population decline were rooted in the changes in attitudes and norms that European society was undergoing at that time. These 'new' attitudes and norms were developing in the direction of greater 'self-actualization in formulating goals, individual autonomy in choosing means, and a claim of recognition for their realization' (Lesthaeghe, 2020).

In demographic terms, this cultural transformation – 'the second demographic transition' (Lesthaeghe and van de Kaa, 1986) – was reflected in a decline of marriages, rising ages at first marriage, increasing cohabitation, fertility postponement and increasing mean ages at parenthood, all of which contributed to structural subreplacement fertility and population decline (Lesthaeghe, 2020). The process, however, did not occur simultaneously across Europe: already by the end of the 1960s, fertility rates were below the replacement level in Czechia, Germany and Sweden and by 1975 in France and Italy; they only declined below the replacement level in 1981 in Spain, according to Eurostat [demo_find] (extracted on 5 April 2021).

The expansion of education has been considered as the driving factor of the second demographic transition, which led to an ideational change, reflected in the decline of traditional religious beliefs and the placement of greater value on personal self-fulfilment from work (Lesthaeghe and Surkyn, 1988). Among other things, education expansion has led to a higher social permissiveness in personal matters, such as abortion and contraception. As a result, women gained greater freedom and the ability to prevent unwanted pregnancies and to postpone marriage and parenthood, which, in turn, allowed them to participate more fully in the labour market and achieve economic independence. According to Goldin (2006), it is in this context that the **gender revolution** started to gain momentum and, ultimately, become itself one of the drivers of the second demographic transition.

In addition, legal barriers that served as an impediment to women's labour market participation in earlier decades have been dismantled. These include various forms of 'marriage bar' in place in many countries, whereby married women were not allowed to work in certain occupations (until 1975 for women in the public service in Ireland) or without their husband's consent (until 1977 in Germany), as well as measures restricting women's economic autonomy (women were not allowed to open their own bank accounts, for example, until 1965 in France).

As an alternative to the value-change premise of the second demographic transition, Becker's theory (Becker, 1960, 1991) posits that the changes in fertility trends are driven by the changes in income and relative prices of parental goods and child goods, not by ideational change. More specifically, in a context in which technological progress has increased the productivity of women's time in the market more than in home production, the opportunity cost of child-rearing has increased, leading to a decline in the quantity of children (Becker, 1991). In addition, under the assumption of a quantity versus quality trade-off in fertility choice, with economic development and rising income, the demand for quality of children has risen more rapidly than the demand for quantity of children (Becker, 1991). This has gradually induced parents to reallocate their increased resources towards the human capital of their child and to reduce the quantity of children as the price of child goods has risen (Galor and Weil, 2000).

The second demographic transition and Becker's economic theory of fertility offer two different theoretical foundations for explaining the gender revolution in the light of the fertility transition. There is no scientific consensus, however. The literature remains divided between 'value-change' theories – such as the second demographic transition – and structural or socioeconomic theories of the fertility transition – such as Becker's theory (Esping-Andersen and Billari, 2015; Lee, 2015).

Complementing the research on the nexus between the gender revolution and the fertility transition, the literature has identified additional drivers that have been contributing to reducing gender gaps in the labour market: among these are the rise in women's real wages (Blau and Kahn, 2017; Olivetti and Petrongolo, 2017), the greater availability of household technology (Algan and Cahuc, 2007) and demand shifts that have favoured social and cognitive over physical skills and have made both market and household productivity more gender equal (Juhn and McCue, 2017).

As a result of the above-mentioned changes, the second half of the 20th century marked the decline of the traditional 'male breadwinner–female care provider' model in Europe and gave rise to a transition towards the 'dual earner–carer' model – or the 'new gender-egalitarian equilibrium' – based on the principle of equal participation of both women and men in paid and unpaid work (Hobson, 2004; Esping-Andersen et al, 2013). The transition has not been homogeneous across Europe, but has occurred at different paces, timings and degrees: as some countries such as Denmark and Sweden have been approaching the new gender-egalitarian equilibrium, in other countries, such as Spain, certain aspects of the traditional model have still remained important (Esping-Andersen et al, 2013; Esping-Andersen and Billari, 2015). Although the transition towards the dual earner–carer model still remains incomplete in Europe, its principle of gender equality has been placed at the centre of the EU's current welfare state approach (Olivetti and Petrongolo, 2017).

Nevertheless, gender gaps in the labour market persist, as evidence in the remainder of this report confirms. Despite women's increasing labour market participation, European women are still less active on the labour market than men, receive lower wages, face occupational segregation and carry the larger share of the care burden of dependent household members (Klasen, 2019; Kleven et al, 2019; European Commission–JCR, 2020a; EIGE, 2021a).

Among the barriers that penalise women in the labour market, the most documented in the literature is the **motherhood penalty**, as motherhood not only reduces the likelihood of being employed, but also implies a wage penalty for employed mothers (Boeckmann et al, 2015; Angelov et al, 2016; Blau and Kahn, 2017; Juhn and McCue, 2017; Kleven et al, 2019). More specifically, longitudinal studies have shown that the largest effect in terms of labour market outcomes occurs immediately after the birth of the first child. At that point, men and women diverge sharply and do not converge again throughout the life course (Kleven et al, 2019). Other well-documented barriers include **hiring discrimination**, as gender preferences of employers lead to discrimination against women or men, especially for gender-stereotyped and low-paying jobs (Neumark, 2018); the **bargaining effect**, according to which women obtain worse bargaining outcomes than men (Dittrich et al, 2014; Card et al, 2016); and the **glass ceiling effect**, that reflects discriminatory promotion opportunities for women, who are less likely to be promoted to a higher salary band positions than men (Hospido et al, 2019).

Labour supply drivers of occupational change

In various studies on occupational change in Europe over the last couple of decades, Daniel Oesch has emphasised that labour supply can also be an important driver of occupational trends (Oesch and Rodríguez-Menés, 2011; Oesch, 2013; Murphy and Oesch, 2018). The availability of different types of worker in the labour market can facilitate or hinder the expansion of some types of jobs. Oesch refers to two specific factors that can at least partly explain the more or less pervasive expansion of high-paying jobs in the last few decades, as well as the less pervasive expansion of low-paying jobs in some specific countries. On the one hand, the massive process of educational upgrading that most advanced economies underwent after the Second World War, and that accelerated from the 1970s onwards, especially for women, can be plausibly linked to the more or less pervasive expansion of highly qualified occupations that occurred simultaneously in most cases. Indeed, using a simple shift-share approach, Oesch shows that occupational upgrading closely tracked educational expansion in most countries, with few exceptions (in particular, Spain and the United Kingdom (UK) saw a smaller decline of low-paying jobs than would be expected on the basis of their educational upgrading) (Oesch, 2013). On the other hand, the surges of migration in some developed economies over the last few decades facilitated an expansion of low-paying jobs (Oesch, 2013; Krings, 2020) that did not fit the educational hypothesis (Spain and the UK were among the countries that had larger migration surges, which may explain their exception).

Overall, educational expansion and migration surges could have been pull factors facilitating the relative increase of qualified occupations in most cases and the relative increase of low-paying jobs in a few cases, thus providing a supply-side explanation of the difference between cases of pure occupational upgrading and cases of job polarisation observed across European countries.

Dwyer (2013) has argued that gender has played an important role as a driver of the observed patterns of occupational change in the United States (US) since the 1990s. The underlying cause is the change in gender relations, which over the last few decades has resulted in an expanding participation of women in the labour market. This affects the occupational structure in at least two important ways: first, by altering the patterns of aggregate demand and, second, by altering the structure of labour supply.

In terms of aggregate demand, the increasing participation of women in paid employment has led to the externalisation of household tasks to the market, therefore contributing to a growing demand for reproductive and nurturant labour services (that is, services that were previously provided by domestic, mainly women's, labour). In terms of labour supply, the availability of women's labour has facilitated the expansion of reproductive and nurturant labour occupations in the labour market.[2] Both trends contribute to job polarisation, because the occupations involved tend to be either low-paying reproductive work (such as domestic or care activities) or mid- to high-paying nurturant work (such as health and education professionals and associate professionals).

It should be highlighted, however, that there are important differences between the US and Europe, especially in relation to unpaid care and paid work (for example, in terms of institutionalised parental leave schemes, social protection, and so on). Nonetheless, Dwyer's (2013) work provides a good example of the kind of feedback loop in the interaction between sociodemographic and occupational change that was briefly discussed in the introduction: a change in gender relations triggered changes in the labour supply of women, which then resulted in changes in the occupational structure that facilitated a continuing extension of the labour supply of women.

Methodological approach

The analysis in this section would be impractical if applied to all of the EU27 Member States. The six countries analysed in this chapter – Czechia, France, Germany, Italy, Spain and Sweden – were selected based on their size (they represent more than half of the working-age population of the EU as a whole), data quality (they all have large samples in the EU-LFS and include the variables necessary for this analysis) and representativity of the different EU institutional families (covering different EU regions, namely continental, southern, northern and eastern Europe).

In the case of Czechia, it is necessary to bear in mind that the period 1995–2019 corresponds to years of profound economic transformation following the demise of the state socialist regime in 1989. In addition, Czechia joined the EU in 2004, gaining access to the EU single market, unlike the remaining countries, which benefited from the access to the EU single market throughout the entire period of analysis. From a gender equality perspective, it is worth highlighting Sweden as something of an outlier as well, with its early adoption of the dual earner model and high labour market participation of women, reflected, for example, in its consistently high scores in international gender equality indices (EIGE, 2021a).

It should be stressed that the sample in this analysis is composed of the overall population, and therefore includes both native and migrant populations. The study links the overall variation in the size of each age–gender group – which is the result of the combined effect of fertility, mortality and migration rates – with occupational change. The study, hence, does not separate the effects of single demographic components – namely fertility, mortality or migration – on occupational change (see Box 1 below for a brief look at the effects of migration).

The sample used was also restricted to the working-age population (15–64 years), and the analysis was based on the (cross-sectional) comparison between the population and employment distributions in 1995 and 2019 (a period of 25 years). Because of data availability problems, the initial year of analysis for two countries was not 1995: in Sweden, the first available year was 1997, while in Czechia it was 1998. However, this should not have any significant effect on the analysis, except perhaps by making the trends slightly less obvious in the figures. The main variables used for the analysis were age, gender and education for the sociodemographic part, and economic activity, occupation and sector for the employment part.

An important analytical tool used throughout this chapter was the classification of the entire working-age population into five categories according to their economic activity, sector and occupation.

1. **Inactive**: working-age individuals who are neither employed nor unemployed. This typically includes full-time students and homemakers, as well as (pre-)retired people, among others.

2 According to Dwyer's (2013) care work classification, **nurturant care work** requires social interaction skills and knowledge about human bodies and includes occupations such as healthcare workers (such as physicians, dentists, veterinarians and licensed nurses), teaching professionals (such as early childhood teachers, elementary teachers and secondary teachers), childcare workers and teachers' aides, and social and religious professionals. **Reproductive labour jobs** also require social interaction skills, but in combination with a higher degree of physical labour; these include occupations such as housekeepers, maids, butlers, stewards, private household cleaners, waiters, cooks and kitchen workers, cleaning and building service workers, janitors, barbers, hairdressers and laundry workers.

2. **Unemployed**: working-age individuals who are not employed but are available and actively looking for work, according to the Eurostat definition.
3. **Employed in low-paying jobs**: individuals who are in paid employment in occupation–sector combinations whose average pay places them in the lowest tercile of the employment structure.
4. **Employed in mid-paying jobs**: individuals who are in paid employment in occupation–sector combinations whose average pay places them in the middle tercile of the employment structure.
5. **Employed in high-paying jobs**: individuals who are in paid employment in occupation–sector combinations whose average pay places them in the highest tercile of the employment structure.

Since the EU-LFS data does not include wages for the necessary level of detail and period, to classify occupation–sector combinations as low-paying, mid-paying or high-paying, the analysis linked external data from the 2014 European Structure of Incomes Survey (SES) for 2019 and from the European Jobs Monitor database for 1995 (see Eurofound and European Commission–JCR, 2019). The variables used for combining occupation and sector were defined at the two-digit level of ISCO, in the case of occupation, and at the one-digit level of NACE, in the case of sector. The classification of occupation–sector combinations into wage terciles was carried out separately by country and by year, so that they reflected the national wage distribution at each point in time.

For the employed population, the three terciles approach basically corresponds to the jobs methodology that has been followed for many years in the European Jobs Monitor (Eurofound and European Commission–JCR, 2019), but with an important difference that should be emphasised. In the standard jobs-based approach used in the European Jobs Monitor, the occupation–sector combinations (jobs) are classified into wage quantiles (usually quintiles, sometimes terciles) for the first year of the analysis, and then the change in headcount employment of those quantiles in a subsequent period is analysed to assess structural change in labour markets. In this type of analysis, the focus is always on marginal employment change from a baseline year when, by construction, jobs are assigned to equal employment-weighted quantiles (for example, each tercile contains jobs whose total employment equals 33.3% in a start year, rank ordered from lowest paying jobs in tercile 1 to highest paying jobs in tercile 3). These job-to-quantile assignments remain fixed for any given period. This approach highlights change but can tend to abstract the change from underlying structural differences, notably the different starting employment distributions by gender across job–wage quantiles, where women's employment is overrepresented in the low-paying quantile and men's employment is overrepresented in mid- and high-paying quantiles.

In this analysis, the classification of jobs into terciles was carried out separately for the beginning (1995) and end of the period (2019), and the analysis focused on how the sociodemographic composition of the terciles (plus the two non-employment categories of the primary classification of the working-age population) changed between the two time points. This approach has several important benefits for the analysis. First, it shifts the focus from occupational change to the demographic composition of the occupational structure, which better fits the research objectives. It allows, for example, an easy comparison of women's and men's shares of inactivity or of employment by job–wage tercile at both time points (1995 and 2019) – bringing to the fore structural imbalances in the gender employment or wage distributions – as well as illustrating how these shares have changed over time. Second, it simplified the analysis considerably, which is necessary given the complexity imposed by adding sociodemographic change into the picture. Third, it solves the problems of comparability between the underlying classifications over the 25-year period analysed (both ISCO and NACE classifications are different and incompatible between 1995 and 2019, but as the analysis was carried out at the level of wage terciles, which are constructed separately in each year, comparability is assured).

Overview of demographic and occupational change over 25 years

To give context for the analysis, it is useful to provide a brief recap of some key features of demographic and occupational change in Europe over the last 25 years. On the sociodemographic side, the key trends have been the ageing of the working-age population, the increasing participation of women in the labour market, educational upgrading and, in many cases, an increase in the migrant population. On the occupational side, against the background of generally expanding employment rates, there have been two dominant patterns of change across European countries: polarisation and upgrading, which could otherwise be described as the expansion of employment in high-paying jobs simultaneous with varying trends in mid- and low-paying jobs.

Demographically, the working-age population of six European countries was classified in six major groups on the basis of gender and age: young men (aged 15–29 years), mid-age men (aged 30–49 years), older men (aged 50–64 years), young women (aged 15–29 years), mid-age women (aged 30–49 years) and older women (aged 50–64 years). In addition, the

dimension of education and migrant status was added when necessary. Occupationally, the same working-age population was classified in five main groups: inactive, unemployed and employed in low-paying, mid-paying and high-paying jobs. Most of the analysis in this section was ultimately based on the interaction of the demographic and occupational distributions of the same working-age population in six European countries at two points in time separated by 25 years (1995 and 2019).

On the basis of the features discussed in the previous sections, this chapter explores whether the gap between men and women in the types of jobs they hold – as categorised by job–wage tercile – narrowed or enlarged with women's increasing participation in employment. Indirectly, by answering this question, this chapter will also be assessing whether, as argued by Dwyer (2013), the increase in women's employment has contributed to job polarisation.

A starting point in answering this question is understanding what the demographic and occupational structures of the six European countries was 25 years ago.

For that purpose, the analysis used a representation that, despite its complexity, directly depicts the combined analysis of demographic and occupational structures (Figure 1) or the **population–occupation pyramid** for the initial year of analysis (1995). The overall setup of the figure is similar to the standard population pyramid: in each country, the full working-age population is split by gender and five-year age bands, with each gender–age group represented with a horizontal bar in ascending order of age, and the horizontal axis representing the absolute numbers of each gender–age group in thousands. In addition, each of the bars representing the gender–age groups (men aged 15–19 years, men aged 20–24 years and so on) have been split into five categories representing their employment and occupational status. In particular, the black segments represent inactivity, the grey segments represent unemployment and the blue segments represent low-paying, mid-paying and high-paying occupations (the lighter the blue, the higher the wage level). In other words, Figure 1 simultaneously offers insights into the overall shape of the working-age population in terms of age and gender and into the employment and occupational status of each gender and age group.

First, 25 years ago there were two main types of pyramid shape in the six countries analysed (which are broadly representative of all EU countries). On the one hand, in Germany, Sweden and (to a lesser extent) France, the overall shape of the population pyramid already showed a narrowing of the base that reflects an earlier drop in fertility rates and thus incipient demographic ageing. On the other hand, in Czechia, Italy and Spain, the population structure still showed a pyramidal shape (with gradually smaller populations for older age groups), although even there the very youngest groups were already in decline 25 years ago.

Second, inactivity rates (the black segments of the bars) were much higher for the youngest and oldest (resulting in the black segments having a marked hourglass shape), but also were much higher for women than for men, especially in Italy and Spain. In fact, in Italy and Spain, economic inactivity was, in 1995, the dominant employment status for women of most age groups, in stark contrast with men.[3] In this respect, Sweden was already very close to gender parity 25 years ago, with the economic inactivity profile of women across all ages being close to that of men.[4] This should not come as a surprise, as the second demographic transition started almost two decades earlier in Sweden than in Italy and Spain.

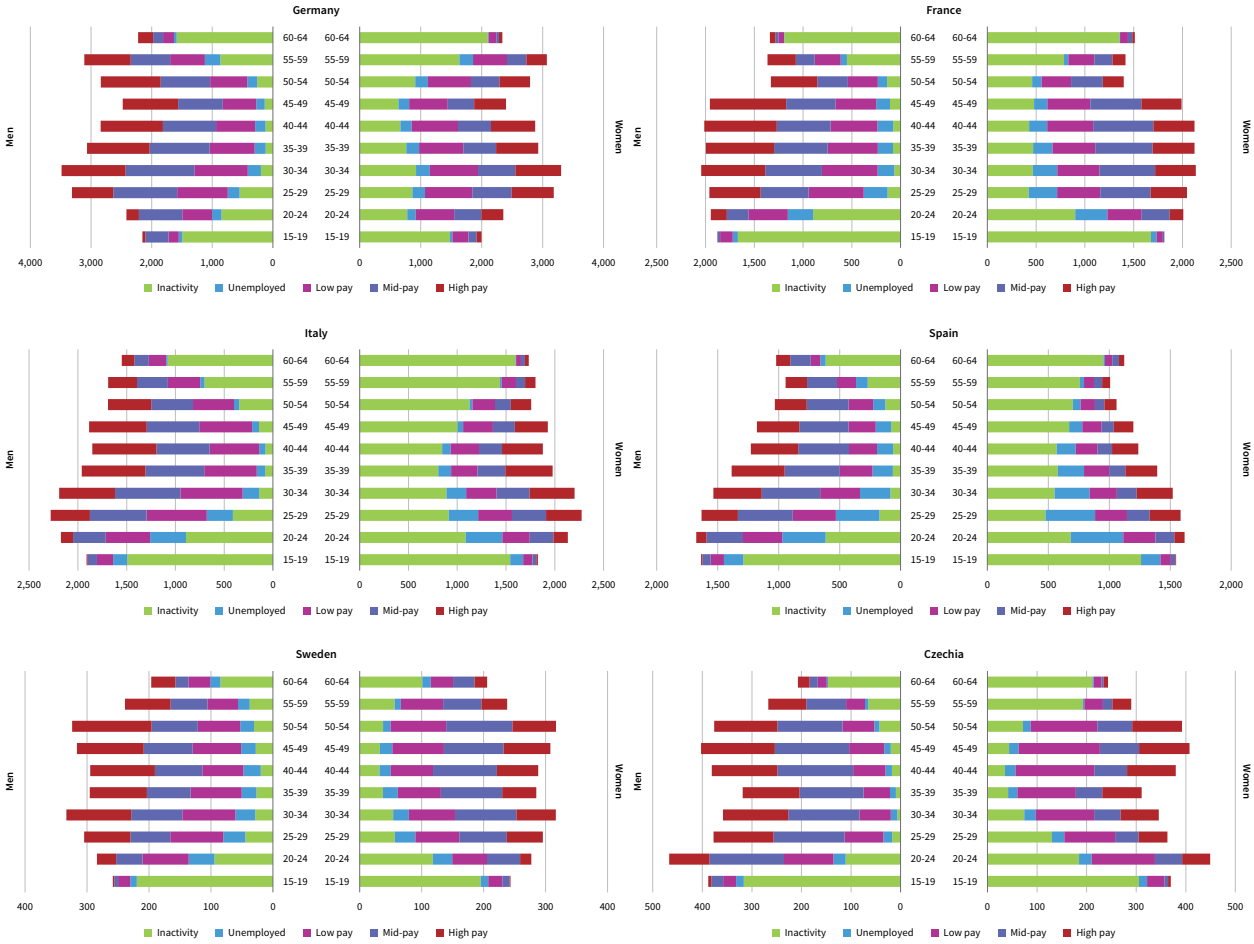
Third, in 1995, unemployment (the grey segments of the bars) was particularly concentrated in the younger age groups, especially in Italy, Spain and (to a lesser extent) France.

Finally, the blue segments make it possible to observe some differences in the distribution of low-, mid- and high-paying jobs by age and gender in 1995: low-paying jobs were more frequent (relative to mid- and high-paying) among younger people, and clearly also among women across all countries; mid-paying jobs tended to be more frequent for mid-aged men, except in France and Sweden (where mid-aged women also have a significant share of mid-paying jobs); and high-paying jobs were more frequent for mid-aged and older men.

3 Economic inactivity refers to the absence of paid work; it is not to be mistaken for the absence of other forms of work within the family and household.

4 Although considered a forerunner in closing the gender gap in inactivity rates, the participation of Swedish women in the employment was still far from equal in terms of working hours: according to EIGE's gender statistics data, in 1995 more than 40% of employed Swedish women worked part time in comparison to only 9% of employed Swedish men. These gender differences in working hours remain a prominent feature of the Swedish labour market today, with 32% of employed women working part time in comparison to 13% of employed men.

Figure 1: Population–occupation pyramids for six European countries, 1995 (thousands)

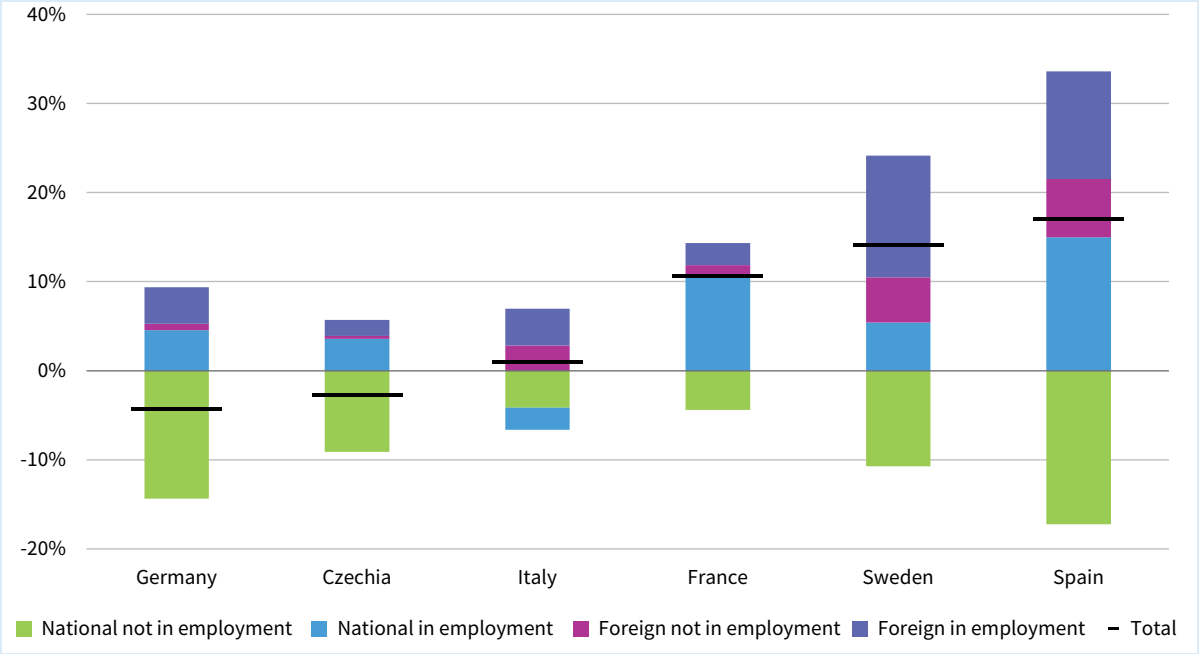


Source: *EU-LFS (authors' elaboration)*

Box 1: The migration component of demographic change

Although the role played by migration in occupation and demographic change is not covered in this chapter, it is useful to look at its impact on the overall change of the working-age population in the six European countries studied in this chapter. Figure 2 shows (in black) the percentage change in the working age population in the different countries, breaking down (in blue bars) this change into the contribution made by four categories based on nationality and employment status. Three countries expanded their working-age population and three stagnated or declined in the period analysed. However, with the exception of France, most of the observed growth was related to the expansion of the foreign-born population: in the period shown, the national-born population was either stagnant or shrinking in all of the other countries. However, this stagnation was the result of two very contrasting developments in the employed and non-employed segments of the national-born population: national-born non-employment decreased while national-born employment levels grew (although Italy was an exception to this). The positive contribution of the foreign-born to population change was most important in Spain and Sweden, although it was also significant in Germany and Italy. With the notable exception of France, the contribution of the foreign-born was overwhelmingly to the employed rather than the non-employed working-age population.

Figure 2: Overall change in the working-age population between 1995 and 2019 by nationality and employment status for six European countries (%)



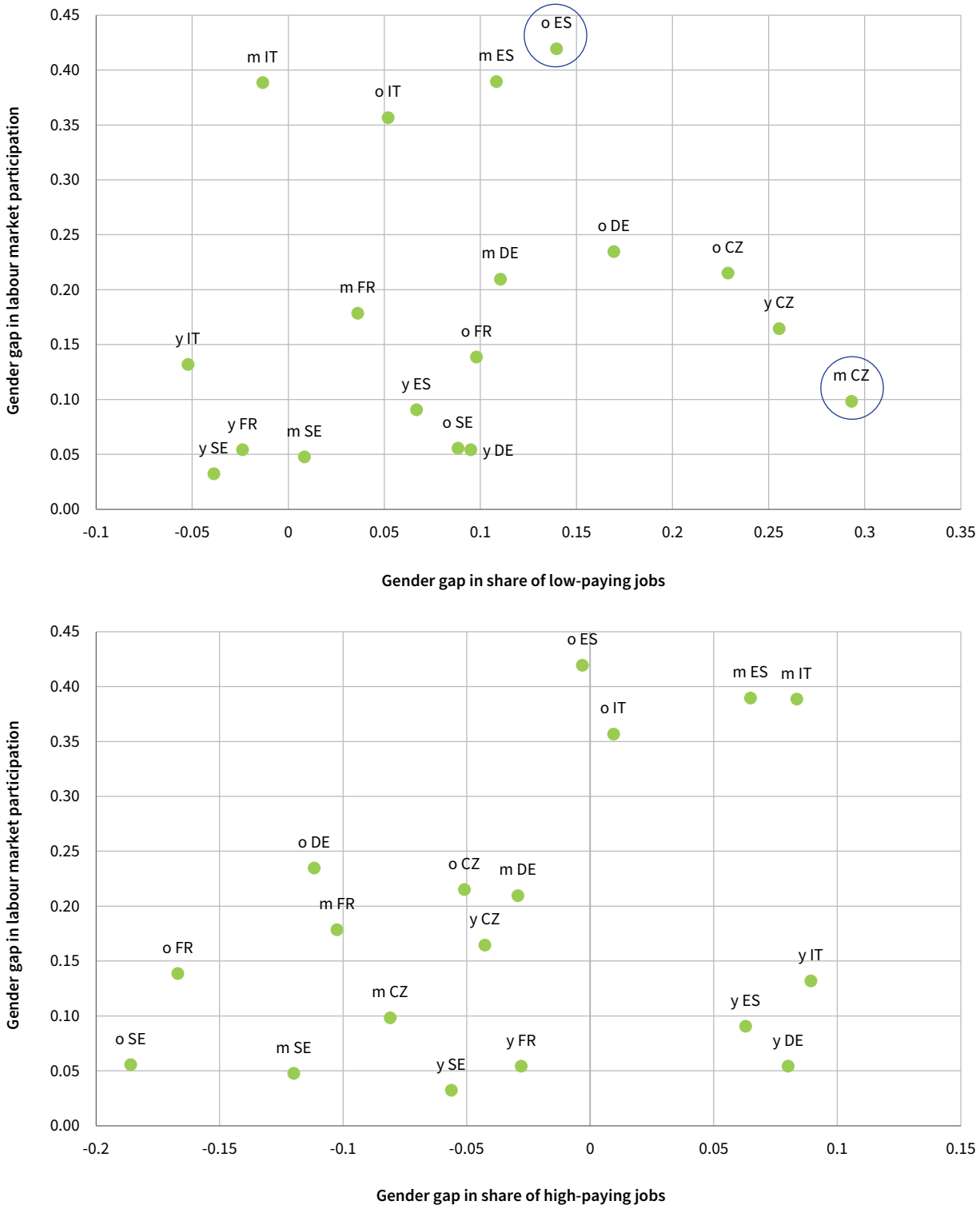
Note: *Italian data start in 2005.*
Source: *EU-LFS (authors' elaboration)*

As mentioned in the 'Relevant literature' section above, the expansion of the migrant population in some countries may have contributed to the increase in the share of low-paying jobs, and thus indirectly to job polarisation. Figure 2 suggests that this may have been particularly important in Spain and Sweden, and to a lesser extent in Germany and Italy, because that is where the expansion of the foreign population was strongest, particularly in terms of employment.

Figure 3 shows even more clearly the gender gaps in the distribution of low- and high-paying jobs in 1995, and their link to the gender gap in labour market participation. The dots in these figures represent young (y), mid- (m) and older (o) age groups for each country (so that 'o ES' refers to the older Spanish category). In the two panels, the vertical axis displays the same variable: the gap in labour market participation between men and women. Thus, the value of 42 percentage points for the older Spanish category (circled in the figure) means a difference of 42 percentage points in the participation rates of men and women for people between 50 and 64 years of age in Spain in 1995 (corresponding to 24% participation for older women and 66% participation for older men). The horizontal axes of the two panels show the gap in the shares of men and women with low-paying and high-paying jobs, respectively. Thus, the same older Spanish category circled in the left-hand panel shows that older Spanish women were, in 1995, 15 percentage points more likely to have low-paying jobs than older Spanish men (corresponding to actual values of 39% among Spanish women aged 50+ years in low-paying jobs compared with 25% among Spanish men aged 50+ years).

In the top panel, it can be seen in nearly all cases that the percentage of women in low-paying jobs in 1995 was significantly higher than the percentage of men in such jobs. It should be noted that the low-paying jobs category has been constructed in such a way that it includes around one-third of all workers (those with the lowest paying jobs), so a gap of nearly 30 percentage points between the percentage of mid-aged men and women in Czechia (as circled in the figure) implies a much larger share of women than men with low-paying jobs (48% of mid-aged women in Czechia had low-paying jobs in 1995, compared with 19% of mid-aged men). The comparison between the gap in low-paying jobs and the gap in labour market participation does not suggest any relationship between those two variables.

Figure 3: Gender gaps in labour market participation, low-paying jobs and high-paying jobs by age group for six European countries, 1995 (pps)



Note: *pps, percentage points; m, mid-age; o, older; y, young*
Source: *EU-LFS (authors' elaboration)*

Conversely, on the bottom panel of Figure 3, it can be seen that, in most cases, women were less likely to have high-paying jobs than men, as might be expected. However, it is interesting to note that here there seems to be some association between the gender gap in the share of high-paying jobs and the labour market participation gap. That is, when the gap in participation between men and women was larger, the gender gap in the share of high-paying jobs was smaller and, in some cases, even reversed, benefiting women. Mid-aged and

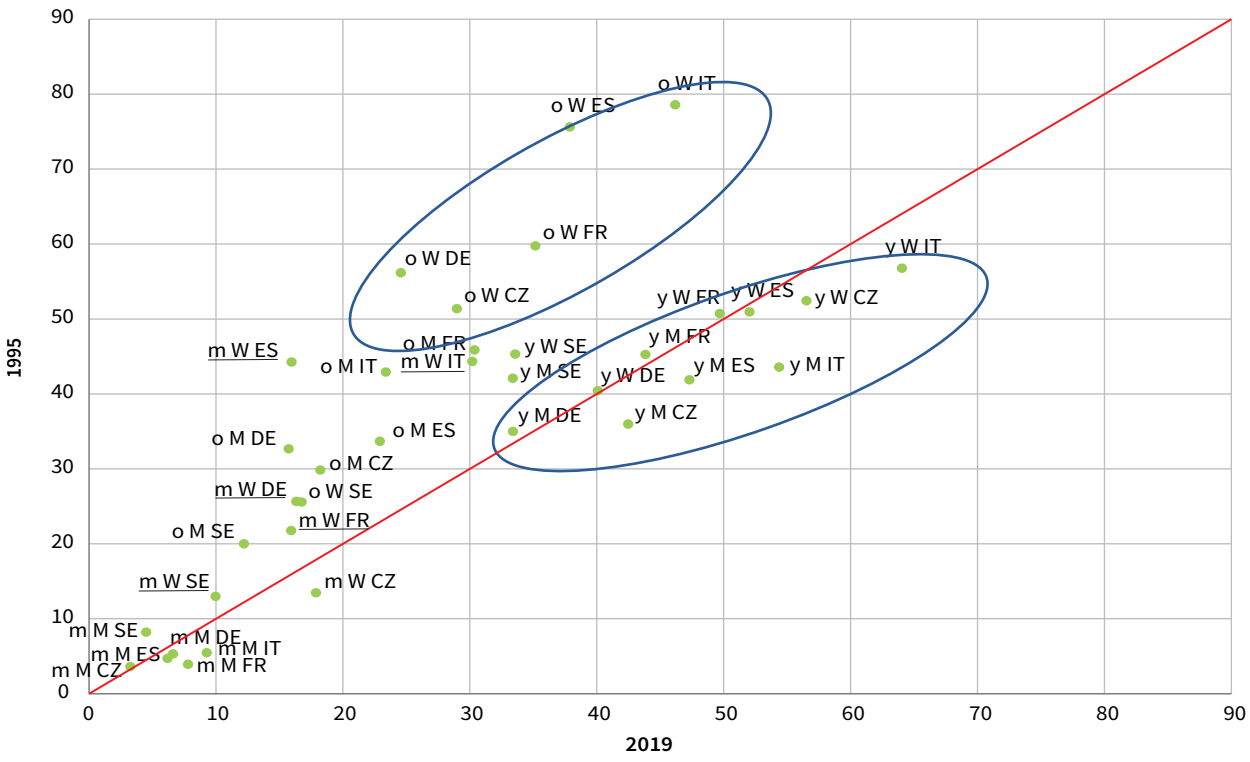
older women in France and Sweden, for instance, had among the lowest participation gaps with the equivalent men, but their chances of having high-paying jobs were significantly lower (-20%). At the other extreme, mid-aged and older women in Italy and Spain were the least likely to participate in employment and yet those in employment were in fact slightly more likely to have high-paying jobs than the equivalent men. The reason behind this surprising relationship is potentially a positive selection effect of women into the labour market: when women's participation is low, the few women who do participate tend to be well off and with good qualifications and thus are likely to have relatively high-paying jobs; by contrast, in those countries with more equality in labour market participation, women of all classes are in employment and thus they end up populating all kinds of jobs, with a bias towards low-paying jobs as previously noted.

This is an important fact to bear in mind. It could be expected, therefore, that an increase in women's participation in employment across most countries would be associated with an increase in the percentage of women in low-paying jobs in those countries that were less advanced in gender equality 25 years ago, such as Italy and Spain.

As previously mentioned, the main changes experienced by the working-age population in Europe in the last 25 years can be summarised as ageing and the feminisation of employment, as is clearly shown in Figure 4. This figure shows the inactivity rates across the six gender–age groups by country, comparing the values in 1995 (vertical axis) with those in 2019 (horizontal axis).

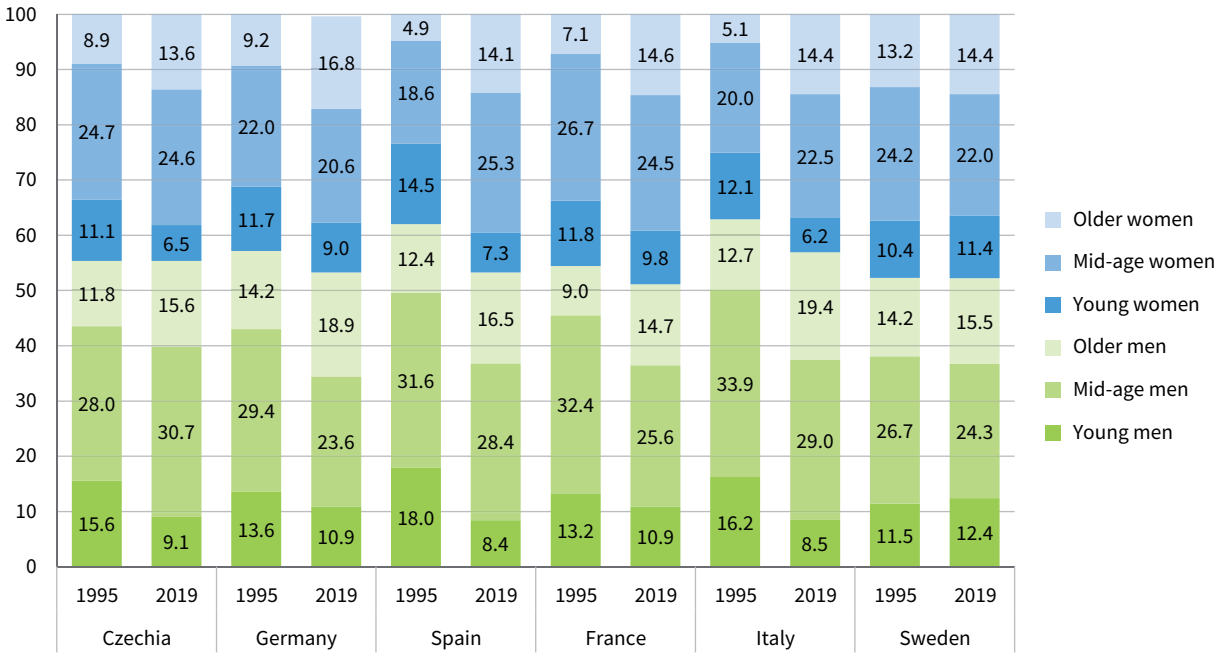
In general, inactivity has dropped for most gender–age groups and countries, as can be seen by the fact that most points are above the diagonal (that is, the proportion of inactivity in 1995 tended to be higher than in 2019). The largest drops in inactivity are in the categories of older women (50–64 years of age), with decreases in inactivity rates of 30–40 percentage points in 25 years in France, Germany, Italy and Spain (see the circled area above the diagonal). In the case of mid-aged women (the underlined points in the figure), the declines were also significant, but milder, in Italy and Spain. The exception to the general decline in inactivity concerns young people, especially men (the circled area on the diagonal). For this group, inactivity rates actually increased in Czechia, Italy and Spain.

Figure 4: Inactivity rates by gender–age groups for six European countries, 1995 and 2019 (%)



Note: *Data have not been seasonally adjusted. The trend estimate uses the Holt–Winters estimator, which accounts for the seasonality of employment data.*
Source: *Eurostat,* Employment by occupation and economic activity (from 2008 onwards, NACE Rev. 2) – 1,000 [lfsq-eisn2] *and authors' calculations*

Figure 5: Change in the gender–age composition of the labour market for six European countries, 1995 and 2019 (%)

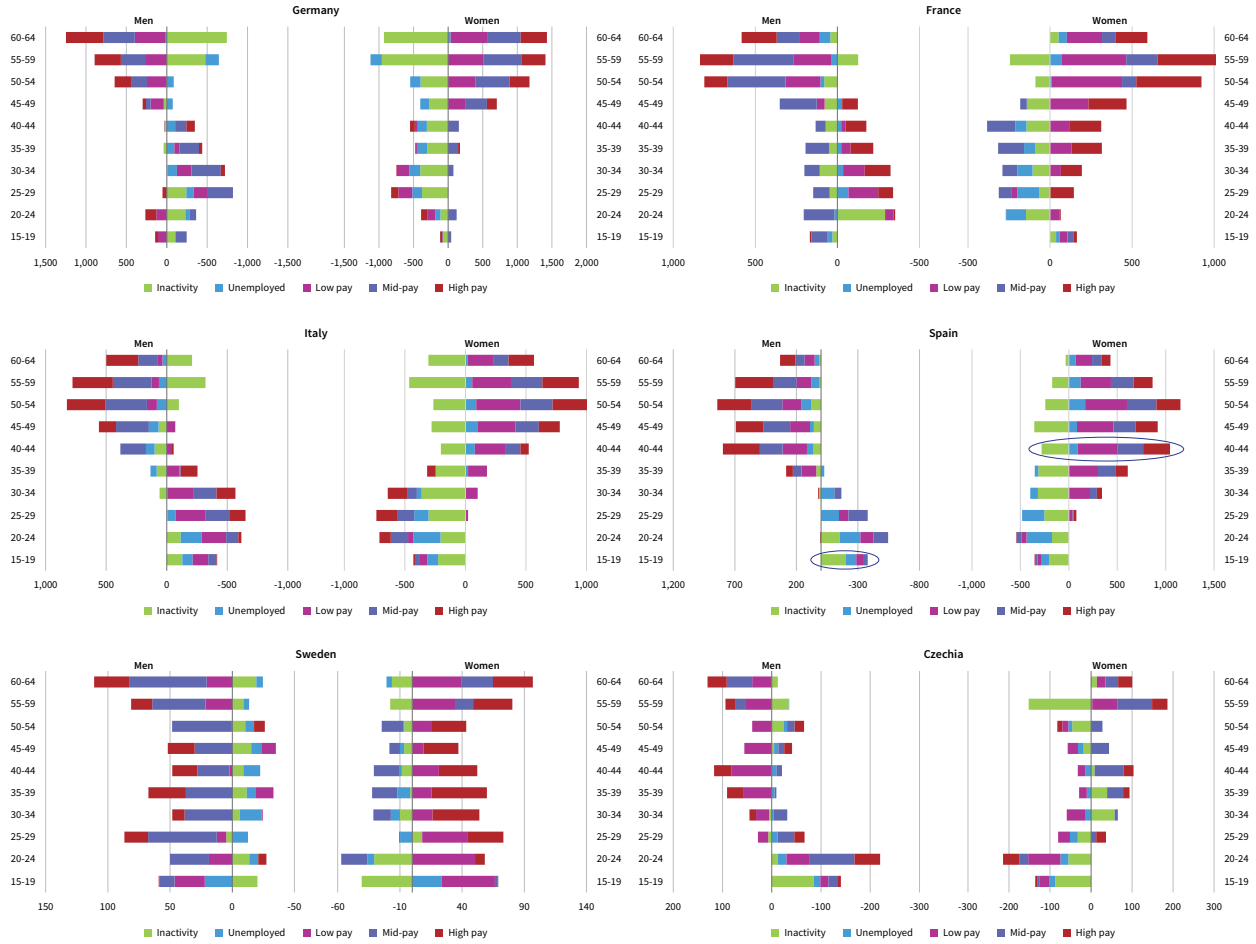


Source: *EU-LFS (authors' elaboration)*

These trends imply a significant reconfiguration of the labour market in terms of gender and age, as Figure 5 also suggests. Labour markets (including both employed and unemployed persons) were significantly feminised in 2019 compared with 1995, with an especially large relative increase in the share of older and mid-aged women (which grew from 31% to 38% of total employment on average). On the other hand, the trends in inactivity combined with demographic shifts imply a very sharp drop in the percentage of young people in the labour market, especially of young men (in Italy and Spain, the share of young men in total employment decreased from 16–18% to 8%). The single exception in this small sample of countries was Sweden, where the demographic composition of the labour market has been surprisingly stable over the last 25 years, and where the share of young people in the working-age population grew, unlike in all of the other five countries covered.

How did these sociodemographic changes translate into the occupational structure? Figure 6 shows a first approximation of these changes by using a representation derived from the population–occupation pyramid shown in Figure 1. Like in Figure 1, for each country, the working-age population has been split by gender and five-year age bands (vertical axis), but in this case the horizontal axis represents the change in the absolute size (in thousands) of each gender–age group. For instance, the youngest category of men in Spain (15–19 years, circled in the figure) declined between 1995 and 2019 by almost 400,000 people in total. In labour market terms, half of that decline translated into a significant drop in inactivity (that is, 200,000 fewer young men in that category), an important decline in unemployment (90,000 fewer) and a reduction in the number of low-paying jobs (55,000 fewer). The values for young Spanish women are very similar. In some cases, the shifts in labour market status for a specific gender–age category can have both negative and positive values, implying a reconfiguration larger than the absolute change in the size of the category. For instance, in the case of Spanish 40- to 44-year-old women (also circled in Figure 6), there was a sharp drop in inactivity (-280,000) and simultaneously an even stronger increase in both unemployment (+90,000) and employment, with the latter strongly skewed towards low-paying jobs (+414,000). Overall, the category of 40- to 44-year-old women increased by 745,000 people between 1995 and 2019.

Figure 6: Change in population–occupation pyramids between 1995 and 2019 for six European countries (thousands)



Source: *EU-LFS (authors' elaboration)*

As seen earlier with the population–occupation pyramid for 1995 (Figure 1), Figure 6 contains so much information that some details are hard to see, and this will be discussed separately with complementary figures. Nonetheless, this figure very effectively conveys the broad contours of the demographic and occupational change in Europe between 1995 and 2019.

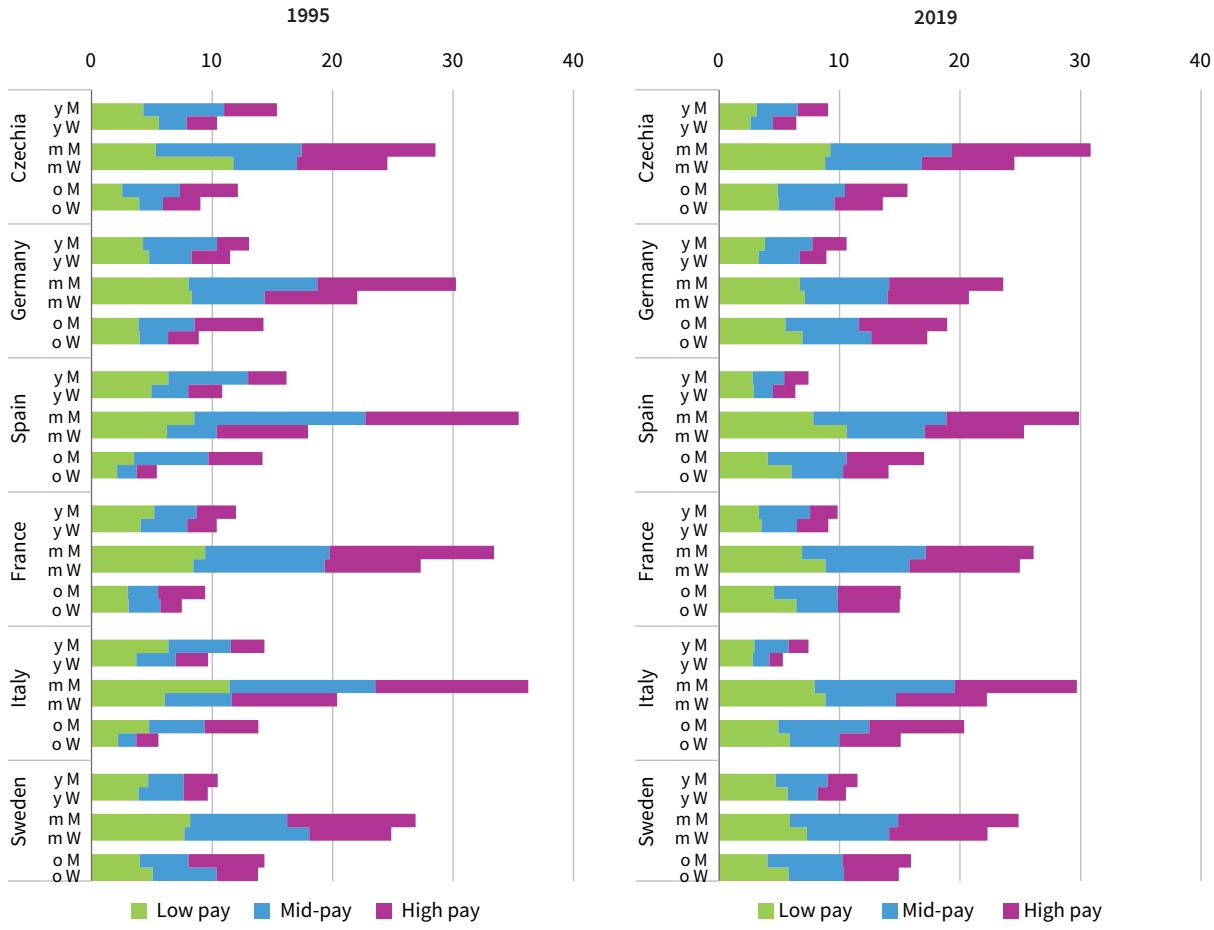
First, Figure 6 clearly illustrates the expansion of the older segments of the working-age population. France, Germany and, to a lesser extent, Italy are the most advanced in this trend, with a large increase in the 50–64 age category for both genders; by contrast, in Spain (and Italy to a minor extent) there was a significant increase in those over 40 years. This relative increase in the oldest age groups was much less marked in Czechia and Sweden.

Second, very significant shifts across economic status and occupational levels can be seen, especially in the older age groups and for women. As indicated by the almost universal negative values for the black segments of the bars for women of all ages, there was a broad decline in inactivity among women, which was particularly strong for mid-aged and older women. This decline in inactivity among women was counterbalanced by even greater increases in employment (because these age groups were increasing in this period), clearly biased towards low-paying jobs in nearly all cases. Only in France and Sweden were there remarkable increases in high-paying jobs among women.

Third, Czechia and Sweden are outliers in their patterns of demographic and occupational change, for different reasons. Czechia saw comparatively mild shifts in inactivity, in some cases contrasting with the trend in other countries (for instance, growing inactivity for mid-aged women and also an increase in mid-paying jobs among women, which in other countries tended to be more associated with men). Sweden saw a large absolute and relative increase in employment among young people, especially young women in low-paying jobs, and a surprisingly strong increase in high-paying jobs for women across most age bands over the age of 30.

Figure 7 shows more clearly the change in the composition of the occupational categories by age and gender in the last 25 years. There are three panels in the figure. The first shows the distribution of overall employment in each country for low-, mid- and high-paying jobs, by age and gender groups. In 1995,

Figure 7: Change in the demographic composition of the occupational terciles between 1995 and 2019 (%)



		Gender gap (women/men ratio) (%)					
		1995			2019		
		Low pay	Mid-pay	High pay	Low pay	Mid-pay	High pay
Czechia	Young	130	35	57	83	55	76
	Mid-age	221	44	68	95	79	67
	Older	156	41	65	101	83	78
Germany	Young	112	57	121	86	87	78
	Mid-age	103	57	67	107	92	71
	Older	102	51	45	126	94	64
Spain	Young	78	46	88	103	61	92
	Mid-age	73	29	59	136	58	75
	Older	60	26	38	148	66	59
France	Young	78	111	74	107	69	113
	Mid-age	90	105	58	128	68	102
	Older	103	103	46	141	65	98
Italy	Young	58	63	97	96	49	66
	Mid-age	53	46	69	112	50	74
	Older	46	33	41	119	55	65
Sweden	Young	83	126	72	121	58	95
	Mid-age	94	129	64	124	76	82
	Older	126	132	55	144	73	80

Note: *m, mid-age; o, older; y, young; M, men; W, women.*
Source: *EU-LFS (authors' elaboration)*

around 15% of employment in Czechia constituted young men and around 10% young women, and a much larger proportion of young women had low-paying jobs than their male counterparts (whose occupational profile was more evenly distributed across the three categories of jobs). The second panel shows the same distribution but for 2019: the overall share of young men and women in employment in Czechia declined to less than 10%, with a more even distribution for both genders than in 1995. Finally, the third panel shows the gap between women and men in each category of jobs and by age: in 1995, women's employment in Czechia was very strongly skewed towards low-paying jobs (the ratio of women to men in low-paying jobs was well above 100%, especially for mid-age workers, whereas the ratio of women to men in mid- and high-paying jobs was much lower than 100%), while in 2019 the gaps became much smaller.

Figure 7 shows very clearly the significant decline in the overall employment gap between men and women: the sizes of the bars for men and women were much more unequal in 1995 than in 2019. The two exceptions are Sweden, which was already very equal in 1995 and has seen very little change over the last 25 years, and Czechia, where the size of the employment gap increased for mid-aged women.

However, most importantly, Figure 7 shows how those increases in women's employment translated into occupational categories. In most cases, the largest increase was in low-paying jobs. In France, Italy, Spain and even Sweden (except for the age group 50–64 years), there were more men than women in low-paying occupations in 1995, a situation that was completely reversed in 2019, when there were many more women than men in low-paying occupations. In Germany, the ratio of women to men in low-paying jobs was fairly even in 1995, and remained more or less so in 2019 (with the exception of older women, who became much more prevalent in low-paying jobs). In addition, as in many previous cases, Czechia is again an outlier in this respect: in 1995, there was a significant imbalance between women and men in low-paying jobs, with women being much more likely to be in that category, whereas, 25 years later, low-paying occupations were much more evenly distributed between men and women.

Therefore, in terms of low-paying jobs, the gap between men and women reversed and, in many cases, increased (to the detriment of women). This implies a large increase in low-paying employment for women in this period, which was especially strong in Italy and Spain.

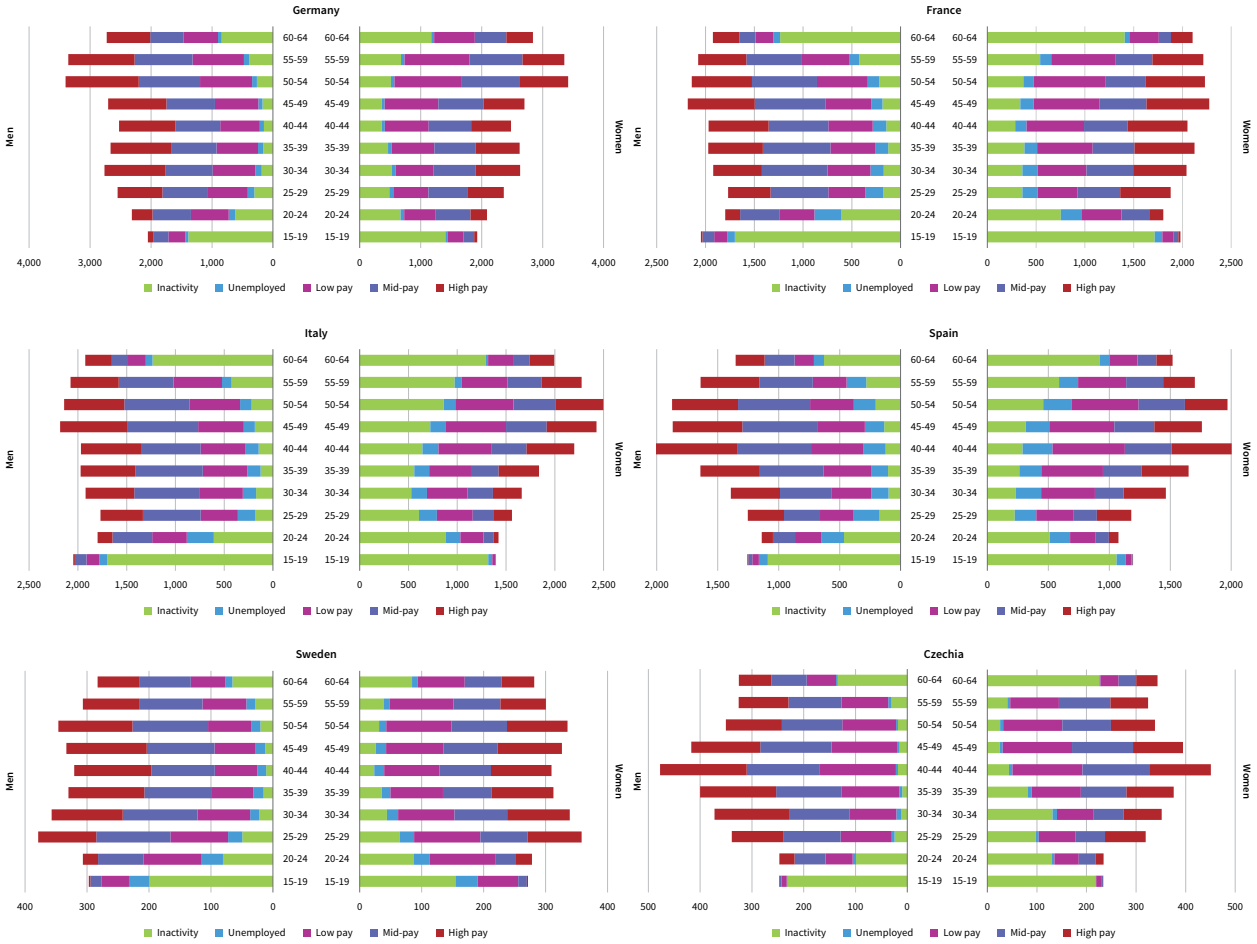
The gap in high-paying jobs, on the other hand, tended to decline and, in some cases, quite significantly. In France and Sweden, where there were many more men than women in high-paying jobs in 1995, the gap had almost disappeared by 2019. In Germany and Italy, the gap declined significantly only for women aged 50–64 years, whereas in Spain there was a significant decline in the gender gap in high-paying jobs for mid-aged and older women.

Finally, the evolution of the gender gap in mid-paying jobs was quite diverse. In France and Sweden, the gap reversed and increased: while in 1995 there were more women than men in mid-paying jobs, in 2019 there were many more men than women in that occupational category, which implies a polarised trend for women in the labour market. However, in the other countries, the ratio of women to men in mid-paying jobs was very low in 1995 (there were many more men than women in that category, with this gap being greater than in low- and high-paying jobs). In Czechia and Germany, that gap had declined quite significantly by 2019 (implying a large increase of women in mid-paying jobs in those two countries), whereas in Italy and Spain the gap also declined, but only mildly.

This section concludes by briefly discussing the population–occupation pyramid for the six European countries in 2019, as shown in Figure 8. If Figure 1 was the starting point of the analysis, Figure 8 can be considered as the end point.

The first striking observation is that there was no longer a pyramid in 2019. The dominant pattern in all of the countries in 2019 was barrel-shaped, although with some significant variations. The pattern in Germany and Italy in fact looks quite close to an inverted pyramid, whereas France and Sweden had relatively flat age distributions, with similar absolute numbers of people across the five-year age bands used in the figure. Only France and Sweden had age distributions that suggested a stable population structure, whereas all of the other countries displayed an imbalanced structure with an increasingly old working-age population.

Figure 8: Population–occupation pyramids for six European countries, 2019 (thousands)



Source: *EU-LFS (authors' elaboration)*

The second point of note is that there was much less inactivity (black) in 2019 than 25 years ago, especially for the older (50–64 years) age groups and for women across the board. In 2019, Italy appeared to be very much an exception in this respect, as it still had a large imbalance in the inactivity rates of men and women across most age groups. In Czechia, there also seemed to be a significant increase in inactivity rates for women between 25 and 39 years of age, in contrast with the trends in the rest of the countries analysed.

Finally, the blue segments, representing employment, looked much more symmetrical between genders in 2019 than 25 years ago, with the partial exceptions of Czechia and Italy. Nevertheless, there was still a bias in women's employment towards low-paying jobs in most countries, as well as a bias in women's employment against high-paying and especially mid-paying jobs.

Summary

In summary, the most distinctive feature of the period studied (1995–2019) was a significant increase in women's labour market participation. This is a continuation of a long-standing trend and has been driven by the advent and consolidation of a dual earner–carer household model and the decline in the traditional male breadwinner–female care provider model. Although the research does not test the assumption about equality in unpaid work, in relation to paid work there is evidence of a consolidation of the 'dual-earner' model. Indeed, data show that there was a significant reduction of inactivity rates for most gender–age groups in the period 1995–2019 in the six countries analysed (Czechia, France, Germany, Italy, Spain and Sweden), with the partial exception of the

younger age groups, especially younger men. This reduction of inactivity rates – most notable among women, especially older women – was accompanied by a reconfiguration of the employment structure. Much of the increase in women's participation has manifested itself as an increase in low-paying employment, an area in which there has been an expansion of the gender gap, namely against women. In France, Italy, Spain and Sweden, across most age cohorts, employment in low-paying jobs went from being predominantly held by men in 1995 to being predominantly held by women in 2019. The gender gap in high-paying employment, on the other hand, while persisting, has tended to decline.

Overall, the analysis provides some initial indications that the increase in women's labour market participation over the past 25 years in Europe has been accompanied by a certain degree of polarisation, driven especially by the expansion of low-paying jobs among women. Although further investigation is needed, this finding would appear to be in line with Dwyer's (2013) hypothesis that the increase in women's employment contributed to job polarisation in the US, and supports the case that something similar has also occurred in Europe. The occupational gender gap still remains an important feature of European labour markets, despite the progress that has been made in improving the labour market prospects of women.

2 Employment segregation by gender and job

Women and men perform paid labour in the same labour market and sometimes work together, but by and large tend to work in different sectors, occupations and jobs. Men are overrepresented in production sectors including agriculture, manufacturing and construction and in occupations predominant in these sectors: skilled craft and agricultural workers, for example. Women are overrepresented in many service sectors, especially in public sector services such as education and healthcare (Anker, 1998; Cohen, 2016). Many male-dominated jobs have tended to enjoy higher status and pay, and vice versa for women, particularly if based on the skills needs and qualification levels of job holders. These patterns may vary in degree across Member States, but they are nonetheless consistent features found cross-nationally in the EU, including across advanced economies more generally (Blau and Kahn, 2017; European Commission, 2018).

There are a number of reasons why the gender segregation of employment is important. First, gender stereotypes of specific jobs tend to reinforce gender pay gaps and other inequities such as 'glass ceilings' and the overrepresentation of men in management and leadership functions. Gaps in pay relate at least in part to the value accorded by societies to specific types of task, and those considered 'female' – such as caring, cleaning and food preparation – have been consistently comparatively poorly remunerated. By contrast, male-dominated jobs at comparable levels of qualification, for example in construction and manufacturing production, have tended to enjoy a strong wage premium (Dwyer, 2013). Second, such sorting effects may directly or indirectly limit many women – and also some men – in making occupational choices and thus represent a potential human capital shortfall in the aggregate, as well as a loss of opportunity at individual level. This leads to a third issue, which is that these inequities tend to propagate themselves as younger men and women make educational choices based on what they observe in terms of labour market opportunity (Anker, 1998). When women's share in a particular job is low – for example, among engineering or ICT professionals – this may dissuade girls leaving school from choosing science, technology, engineering and mathematics (STEM) subjects at university, regardless of abilities.

The basis for the differing allocation of employment by gender across occupations and sectors (and 'jobs' in the European Jobs Monitor understanding of the term) relates in part to perceived or actual comparative advantages of each gender in specific task types, as described in more detail in Chapter 4. However, historical and socioeconomic factors also play a role. These factors include changing locations of production – which has an impact in particular on production sectors predominantly employing men – and changing structures of demand. The shift in demand to the consumption of services rather than goods, for example, is associated with jobs richer in relational and communication tasks and skills that may tend to favour women's employment. Within the broader services expansion, there has been a relatively rapid growth of essential services ('services of general interest') provision in sectors such as education, health and care, where in most EU Member States the state has been the main source of financing, either directly or indirectly. These sectors in particular tend to employ a majority of women (Wren, 2013).

The following descriptive analysis starts by showing the broad distribution of employment by sector and occupation at EU aggregate level and how this has changed over the last two decades, from 1998 to 2019. Thereafter, employment is assigned at the beginning and end of the period into five categories of jobs (defined at the two-digit level of ISCO for occupations and at the one-digit level of NACE for sectors) based on the gender composition of employment in those jobs to make a preliminary estimate of whether there has been, for example, a growth in employment of mixed, gender-integrated jobs resulting from women's disproportionate share of recent employment growth. This appears, surprisingly, not to have been the case; women's employment has grown in particular in jobs that have a significant existing majority of female workers. To complement this simple approach, dissimilarity indices were also used to estimate the extent of job-based employment segregation by gender. Finally, for 13 large-employing jobs – such as teaching professionals and retail sales assistants – which account for a substantial share of employment in all Member States (34% on average, in the range of 25–45% by country), the extent and change over time in gender composition in these jobs is estimated.

Gender segregation by sector and occupation

The comparison of occupational gender employment shares is complicated by the ISCO classification change that was implemented in 2011 in the EU-LFS. In Table 1, the shaded areas summarise women's employment share in 25 EU Member States (EU25) (Croatia and Malta are omitted) at the ISCO one-digit level in 1998 and 2019. While these labels remain more or less identical before and after the classification change in 2010–2011, the underlying assignment of more disaggregated occupations (at the two-digit level) is different, as is clear from the different occupation labels at the ISCO two-digit level. Comparisons of women's employment share at the beginning (1998) and end of the period (2019) are therefore subject to the caveat that, even when labelled similarly, the occupations do not necessarily comprise the same occupational categories.

Three broad occupations are gender-mixed (where at least 40% of the headcount is made up of men or women) at EU level, with similar levels of employment of men and women – professionals, associate professionals and, at the other end of the occupational hierarchy, elementary occupations (for example, office cleaners, building caretakers and street vendors). Lower level white-collar occupations – service and sales workers and clerical support workers – are mainly held by women, while predominantly blue-collar, production-related occupations are either mainly held by men or male dominated.

Women's share of employment has increased in white-collar, high-skilled occupations (managers and professionals) and in elementary occupations. At a greater level of detail, in the legislators and senior officials category, women's share of employment increased from 23% to 29%, but women still account for less than one in three workers at this senior management level.

Women's employment share has increased most in professional occupations and also, given disproportionate overall employment growth in this category, these occupations account for the greatest absolute rise in employment. There were just over 10 million more female professionals in 2019 than in 1998 – compared with around seven million additional male professionals (EU25). Women accounted for a small majority of employment in professional occupations in 2019, their share having increased by 7 percentage points in two decades. Notable increases were in the share of female science and engineering professionals, which nearly doubled from 17% to 30%, and in health professionals, where women's share increased from 51% to 70%. In the new ISCO-08 category of information and communications technology (ICT) professionals, however, women still account for less than one in five workers.

Women's employment share was stationary or contracted modestly in the remaining occupational categories. One might infer from Table 1 that the shifts in gender share were more or less balanced across occupational categories, but in absolute employment headcount terms this was not the case. Occupations in which women's share grew tended to be those occupations whose structural share of employment was growing – professionals and elementary occupations. Some of the occupations in which women's share contracted – skilled agricultural workers, notably, but also craft and related trades workers – are mainly held by men and have declining employment both relatively and in absolute headcount terms.

Table 1: Women's employment share by occupation in the EU as a whole, 1998 and 2019 (%)

Occupation ISCO-88	1998	Occupation ISCO-08	2019
Managers	**29**	**Managers**	**34**
Legislators and senior officials	23	Chief executives, senior officials and legislators	29
Corporate managers	25	Administrative and commercial managers	41
General managers	32	Production and specialised services managers	29
		Hospitality, retail and other services managers	37
Professionals	**47**	**Professionals**	**54**
Physical, mathematical and engineering science professionals	17	Science and engineering professionals	30
Life science and health professionals	51	Health professionals	71
Teaching professionals	66	Teaching professionals	72
Other professionals	46	Business and administration professionals	53
		ICT professionals	18

Occupation ISCO-88	1998	Occupation ISCO-08	2019
Technicians and associate professionals	**52**	**Technicians and associate professionals**	**50**
Physical and engineering science associate professionals	21	Legal, social and cultural professionals	59
Life science and health associate professionals	80	Science and engineering associate professionals	17
Teaching associate professionals	74	Health associate professionals	79
Other associate professionals	54	Business and administration associate professionals	56
		Legal, social, cultural and related associate professionals	65
		Information and communication technicians	15
Clerical support workers	**67**	**Clerical support workers**	**66**
Office clerks	66	General and keyboard clerks	80
Customer services clerks	74	Customer services clerks	70
		Numerical and material recording clerks	53
		Other clerical support workers	61
Service and sales workers	**65**	**Service and sales workers**	**63**
Personal and protective services workers	63	Personal service workers	58
Models, salespersons and demonstrators	68	Sales workers	66
		Personal care workers	89
		Protective services workers	15
Skilled agricultural, forestry and fishery workers	**43**	**Skilled agricultural, forestry and fishery workers**	**32**
Market-oriented skilled agricultural and fishery workers	43	Market-oriented skilled agricultural workers	32
		Market-oriented skilled forestry, fishery and hunting workers	7
		Subsistence farmers, fishers, hunters and gatherers	44
Craft and related trades workers	**14**	**Craft and related trades workers**	**11**
Extraction and building trades workers	3	Building and related trades workers, excluding electricians	3
Metal, machinery and related trades workers	5	Metal, machinery and related trades workers	5
Precision, handicraft, printing and related trades workers	31	Handicraft and printing workers	34
Other craft and related trades workers	44	Electrical and electronic trades worker	4
		Food processing, wood working, garment and other craft and related trades	40
Plant and machine operators and assemblers	**19**	**Plant and machine operators and assemblers**	**18**
Stationary-plant and related operators	16	Stationary plant and machine operators	33
Machine operators and assemblers	38	Electrical and electronic trades workers	37
Drivers and mobile-plant operators	4	Drivers and mobile plant operators	4
Elementary occupations	**52**	**Elementary occupations**	**55**
Sales and services elementary occupations	67	Cleaners and helpers	85
Agricultural, fishery and related labourers	42	Agricultural, forestry and fishery labourers	29
Labourers in mining, construction, manufacturing, etc.	28	Labourers in mining, construction, manufacturing, etc.	28
		Food preparation assistants	68
		Street and related sales and service workers	20
		Refuse workers and other elementary workers	27

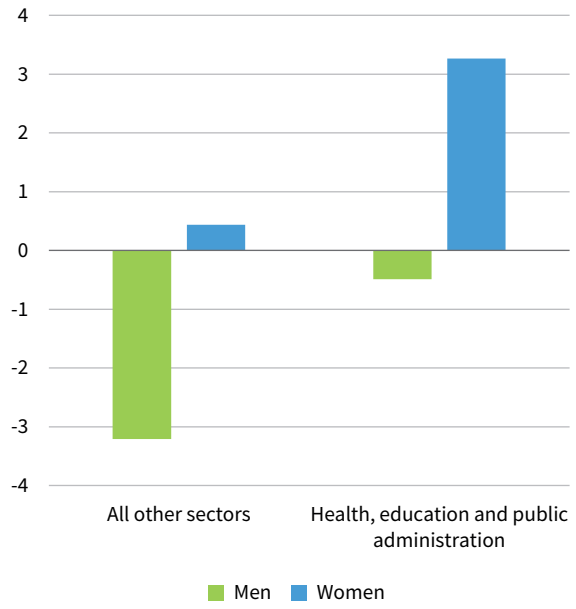
Notes: *Armed forces are excluded. Data are for EU25: data were not available for 1998 for Croatia or Malta. The 1998 data for Romania are from 1997 and for Bulgaria, Cyprus and Poland are from 2000. Similar occupation titles are placed on the same row where possible, but note that classification changes mean that the designations refer to different occupational groupings at the beginning (1998) and end of the period (2019), that is, comparisons of the gender employment share are indicative only.*
Source: *EU-LFS (authors' elaboration)*

By broad sector, similar trends are observed. In sectors with declining employment levels, notably agriculture but also manufacturing, women's employment share has contracted. Sectors that were largely male dominated have tended to remain so. That has been the case, for example, in mining/quarrying, manufacturing and transportation sectors, while there has been a small gender shift in construction and utilities. However, in service sectors, where women are better represented, the trend towards women having a greater employment share is more marked. In particular, in predominantly state-funded sectors, the female majorities have become more pronounced. This has been the case in health and education, while in public administration a 7 percentage point increase in women's employment share has brought women's representation to near parity (48%). It is well recognised that public sector employment has played an important role in boosting both women's labour force participation and aggregate job quality (Gornick and Jacobs, 1998).

Figure 9 shows the percentage point shifts in the share of EU employment by gender, comparing the predominantly state-funded sectors (health, education and public administration) with all of the other sectors. Women's increasing share of employment has overwhelmingly occurred in the predominantly state-funded sectors. Women's share of mainly private sector employment growth has been much more modest. Men's declining share of employment is concentrated mainly in private sector jobs ('all other sectors'), although men's share of employment also decreased marginally even in the faster growing predominantly state-funded sectors.

In mainly private service sectors, such as financial services and real estate, there has also been a growth in women's employment share (Table 2). For those other numerically important, mainly private, sectors for which there is no reasonable comparator in 1998 – professional services (encompassing a wide range of activities including marketing, research, media, legal, accounting, management and public relations services) and administrative/support services (such as private security, employment agencies, travel agencies, call centres and buildings maintenance) – the current share of employment is more or less even by gender. One exception in the broader service sector is information and communication (encompassing publishing, computer/ICT and broadcasting), which mainly employs men.

Figure 9: Change in the share of EU employment by gender between 1998 and 2019 in predominantly state-funded sectors and in all other sectors (pps)



Notes: *pps, percentage points. Data are for EU25, omitting Croatia and Malta. The 1998 data for Romania are from 1997 and for Bulgaria, Cyprus and Poland are from 2000.*
Source: *EU-LFS (authors' elaboration)*

The fact that there are predominantly male and predominantly female sectors, as well as occupations, provides a justification for using the unit of observation of the 'job' (a given occupation in a given sector) in the subsequent analysis. Much segregation analysis by gender focuses on the occupational dimension exclusively. This is justified, especially when the focus is segregation and its interaction with pay differences (when the implicit hierarchy of occupations correlates strongly with pay). However, the addition of sector allows for a more disaggregated analysis – which provides the benefit of generating more accurate estimates of dissimilarity indices – as well as a more specific identification of similar job roles (on the assumption that, for example, engineering professionals have different sets of tasks when working in manufacturing, public administration or other professional/technical services sectors).

Table 2: Women's employment share by broad sector in the EU (%) and the change over time (pps), 1998 and 2019

Sector	Women's share (%)		Change (percentage points)
	1998	2019	
Agriculture, forestry and fishing	40	33	-7
Mining and quarrying	13	13	-1
Manufacturing	32	30	-2
Electricity, gas, steam and air conditioning supply	20	25	5
Construction	9	10	1
Wholesale and retail trade, etc.	47	49	2
Accommodation and food service activities	53	54	1
Transportation and storage	25	22	-3
Financial and insurance activities	50	53	3
Real estate activities	45	51	6
Public administration and defence, compulsory social security	41	48	7
Education	68	73	5
Human health and social work activities	76	79	3
Activities of households as employers, etc.	91	89	-2
Administrative and support service activities		49	
Arts, entertainment and recreation		49	
Information and communication		30	
Professional, scientific and technical activities		49	
Water supply, sewerage, waste management and remediation activities		22	
Other service activities		67	

Notes: *pps, percentage points. Data are for EU25: data were not available for 1998 for Croatia or Malta. The 1998 data for Romania are from 1997 and for Bulgaria, Cyprus and Poland are from 2000. The shares in the table are based on the NACE classification labels in each year at one digit. The match between sectors before and after the classification change in 2008 from NACE rev 1.1 to NACE rev 2.0 is based on similar labels, but not necessarily involving exactly the same assignment of more disaggregated sectors (at the two-digit level and lower). The comparison is therefore indicative and approximate. The final six sectors in the table are those in NACE rev. 2.0 for which there is no satisfactory counterpart in NACE rev 1.1.*
Source: *EU-LFS (authors' elaboration)*

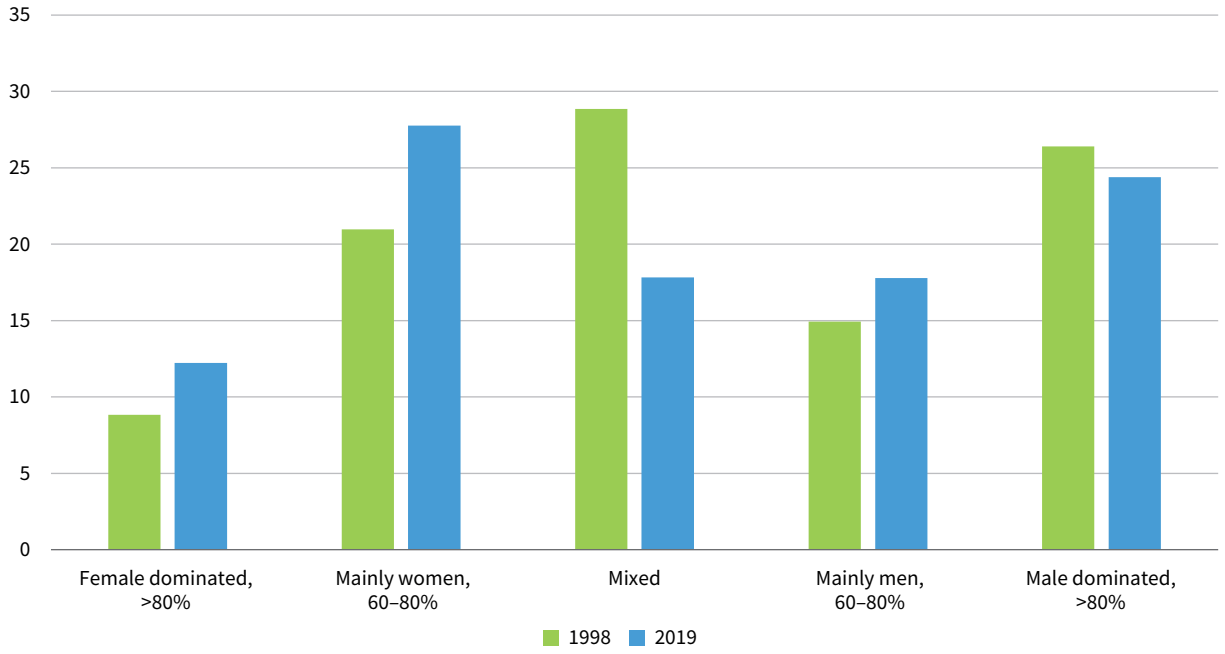
Gender segregation by employment concentration

The above descriptive analysis is a broad-brush and aggregated analysis. Within the professional occupation designation, for example, there are some gender-mixed professions such as legal professionals, as well as gender-dominated professions such as software programmers (male dominated) and teaching professionals (female dominated). The jobs-based approach used in the European Jobs Monitor offers a finer level of detail, breaking down the employment structure into over 800 jobs with employment observations. Each of these jobs can be considered as representing a position in the horizontal (sectoral) and vertical (occupational) division of labour involving a comparable set of task functions. Based on the initial sectoral and occupational analysis above, which showed that gender-mixed occupations (for example, professionals) and sectors (for example, professional and scientific activities) have recently enjoyed high employment growth, it might be expected that gender-mixed jobs have increased their share of overall employment. However, if all EU employment is allocated to five categories of job based on gender composition, this appears not to be the case, as Figure 10 illustrates.

Employment share by gender

The largest growth in employment share has come in jobs held mainly by women. In 2019, this category accounted for 28% of EU employment, up from 21% in 1998. Female-dominated jobs also increased their share of employment, from 9% to 12% over the same period. The largest decline in employment share was in the mixed category, which declined by 9 percentage points. In jobs mainly held by men and male-dominated jobs, there was, respectively, a modest increase and decrease in the share of employment between 1998 and 2019.

Figure 10: Employment share in the EU by gender concentration category, 1998 and 2019 (%)

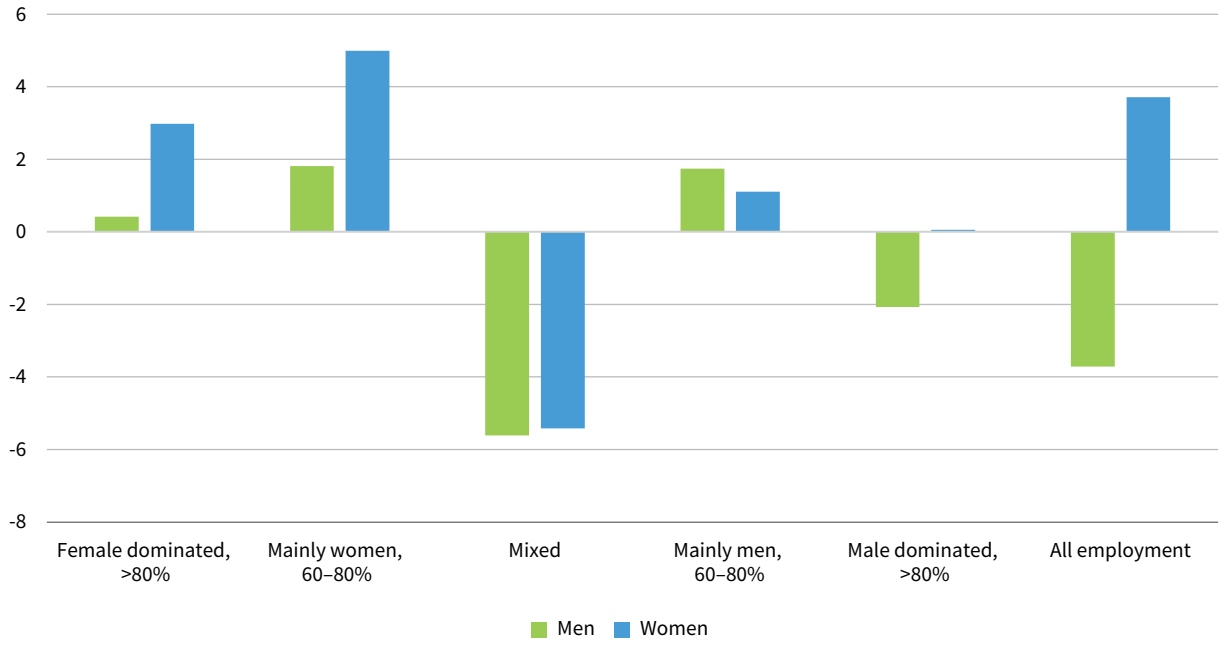


Notes: *Data are for EU25, as data were not available for 1998 for Croatia and Malta. The 1998 data for Romania are from 1997 and for Bulgaria, Cyprus and Poland are from 2000.*
Source: *EU-LFS (authors' elaboration)*

At first glance, it appears that the sharp rise in women's employment share came mainly from jobs that were already mainly held by women or female dominated.

Breaking down the above shifts by gender, this indeed is the case, as Figure 11 shows.

Figure 11: Employment shifts from 1998 to 2019 in the EU by gender and by gender concentration category (pps)



Notes: *pps, percentage points. Data are for EU25, as data were not available for 1998 for Croatia and Malta. The 1998 data for Romania are from 1997 and for Bulgaria, Cyprus and Poland are from 2000.*
Source: *EU-LFS (authors' elaboration)*

The overall increase in women's employment share was just less than 4 percentage points between 1998 and 2019, all of which was attributable to developments in jobs held mainly by women. Indeed, men's employment also grew in these job categories. Therefore, not only was women's employment growing faster than men's employment, but also jobs employing mainly women were growing faster than mixed or male-dominated jobs. Strikingly, gender-mixed jobs decreased in their employment share, among both men and women, and these were the largest employment share declines for both genders. Jobs in which men and women are more or less evenly matched in employment headcount account for less than a fifth of overall employment, and this share has been decreasing. Male-dominated jobs also declined in their employment share, with male workers unsurprisingly accounting for most of this decline. Using measures of concentration rather than segregation tells a similar story. A higher share of women were working in either female-dominated jobs or jobs held mainly by women in25 Member States in 2019 (65%) than in 1998 (51%) and this association was also the case for men, although the increase was less dramatic (64% in 2019 from 60% in 1998).

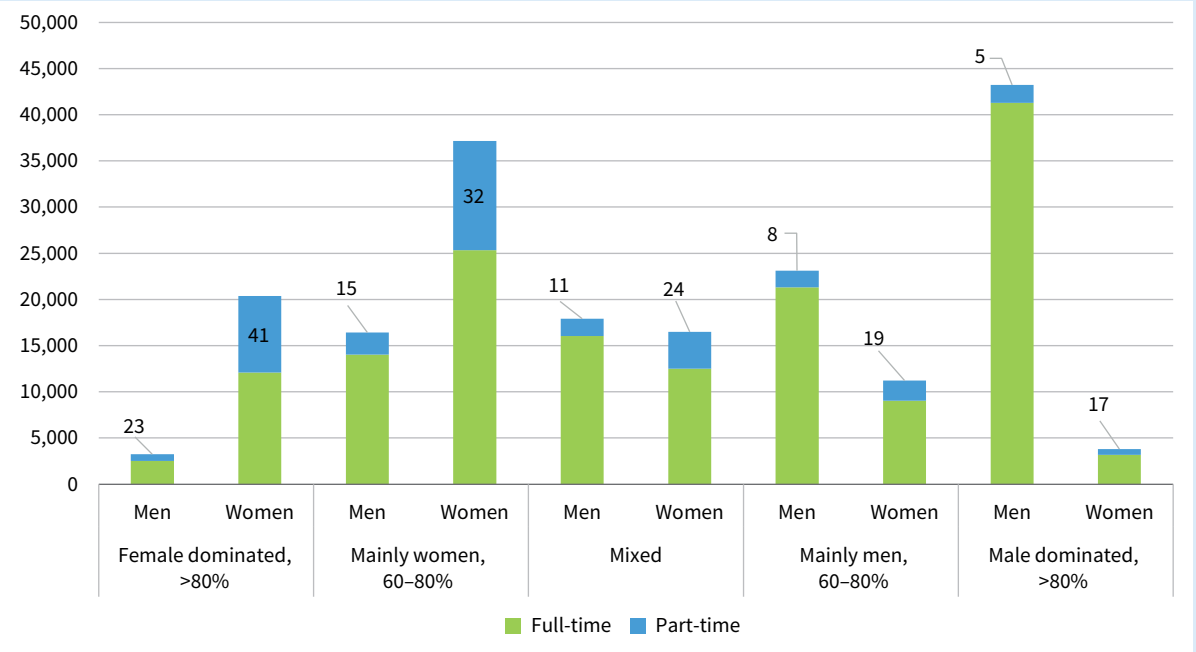
Box 2 examines the continuing prevalence of women in part-time employment, particularly in female-dominated jobs.

Box 2: Part-time work and job segregation by gender

Three out of four part-time jobs in the EU are held by women. This share has declined over the last two decades, as the relative growth of men's part-time employment share has been somewhat faster (growing from 5.6% in 2002 to 8.4% of the EU27 in 2020) than that for women (from 25.4% to 29.7% in the same period). Nonetheless, part-time work continues to be mainly undertaken by women.

Another dimension of gender segregation is that jobs that are dominated by women tend to have much higher shares of part-time work, for both men and women doing those jobs. In effect, the working time norms of jobs mainly carried out by women carry over to men working in the same jobs, and vice versa for jobs mainly carried out by men. As Figure 12 demonstrates, the share of men's and women's part-time employment is highest in female-dominated jobs (23% and 41%, respectively); this share declines as the share of men in a job increases and is lowest (5% and 17%, respectively) in male-dominated jobs.

Figure 12: Part-time employment share in the EU by gender and gender concentration category, 2019 (thousands and %)



Source: *EU-LFS (authors' elaboration)*

One implication of this weighting of part-time employment to female-dominated jobs is that the strong employment growth in female-dominated jobs and jobs held mainly by women already noted (Figures 10 and 11) is less marked when considered in terms of working hours/full-time equivalents than when considered in terms of headcount employment.

Job segregation by gender

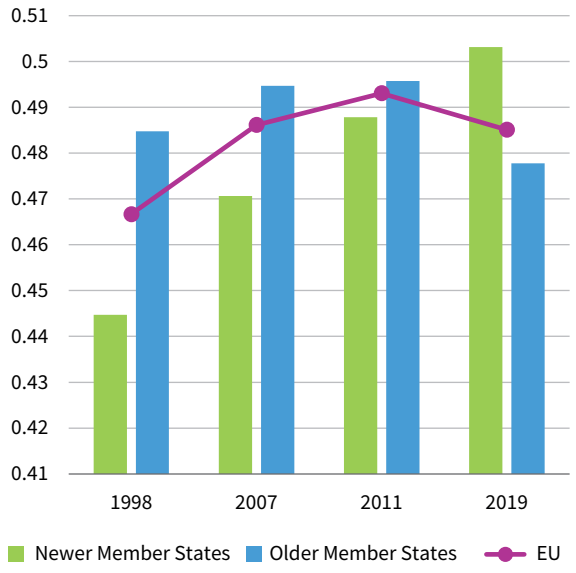
Figures 10–12 give a reasonable approximation of the distribution of EU employment in terms of the gender composition of jobs. The approach is simple, however, and outcomes are dependent on the vagaries of aggregation. As is shown in the section 'Large-employing jobs' below, 13 large-employing jobs account for a third of all EU employment. If any of these jobs happen to fall close to one of the percentile thresholds of the five categories, all of the employment in the job is assigned to just one category. This means that share estimates done in this way are sensitive to initial job assignment and can be volatile in repeated measurements, even for the same country.

An alternative approach that takes into account all of the individual job gender composition data with fewer issues of aggregation is to calculate indices of dissimilarity. This is a standard approach in occupational segregation research and was easily transposed to the current, more detailed job-based analysis. The index of dissimilarity used – the Duncan dissimilarity index (ID)[5] (Duncan and Duncan, 1955) – generates a single estimate on a 0–1 scale measuring the extent to which two populations – in this case male and female workers – differ in their distribution across categories of a classification. The classification in this case is the employment structure broken down into 'jobs'. If the ID is 0, then women and men have an identical percentage of employment in that job; if the ID is 1, then the job is carried out entirely by men or entirely by women. In existing labour markets, ID values fall somewhere between these two implausible extremes. The ID is often interpreted in shorthand as the minimum proportion of men or women who need to change occupation in order to equalise employment shares by gender, but the more correct interpretation is that it describes the following:

> *the sum of the minimum proportion of women plus the minimum proportion of men who would have to change their occupation [job] in order for the proportion female to be identical in all occupations [jobs].*
>
> (Anker, 1998)

In Figure 13, employment-weighted ID scores for the newer and older Member States as well as the EU as a whole are presented for the period 1998–2019. The data points selected reflect the classification changes that may affect the ID score; in the periods 1998–2007 and 2011–2019, the same job classifications were in operation (NACE rev 1.1 and ISCO-88 in the first period and NACE rev 2.0 and ISCO-08 in the second period). As a result, there should be no issues with ID scores being 'contaminated' by classification changes.

Figure 13: Duncan dissimilarity index of employment in the EU by job and gender, 1998–2019



Notes: *Data are for EU25, as data were not available for 1998 for Croatia and Malta. The 1998 data for Romania are from 1997 and for Bulgaria, Cyprus and Poland are from 2000. Newer Member States are those that joined the EU in or after 2004. Older Member States are the original EU15, minus the UK.*
Source: *EU-LFS (authors' elaboration)*

5 The formula for the Duncan dissimilarity index is as follows, where m_i is the headcount of men in a job (occupation by sector) i, M is the total headcount of men, f_i is the headcount of women in a job i and F is the total headcount of women:

$$\frac{1}{2}\sum_{i=1}^{N}\left|\frac{m_i}{M}-\frac{f_i}{F}\right|$$

The first thing to observe is that the ID scores rose at EU level from 1998 to 2011, before declining in the decade up to 2019. Even though the entire period saw decreasing employment gaps by gender, job segregation by gender increased for more than half of the period under observation. Breaking the data down into groups of Member States based on accession data reveals different patterns between older and newer Member States.

The high labour force participation of women was a characteristic of many central and eastern European Member States in the former Communist era. Gender employment gaps were lower before 1989 as a matter of state policy. High levels of educational performance by women and access to state-provided childcare sustained societal expectations that men and women both engaged in the formal labour market with few barriers to women's advancement (Pollert, 2005). High levels of women's participation do not necessarily translate into lower levels of occupational segregation – Sweden, until the turn of the century, had both a high ID value and a high women's employment rate (Anker, 1998), indicating that women and men separated out into different jobs within the same labour market. However, in the case of the newer Member States (predominantly central and eastern European countries), at the start of the period of observation in 1998, levels of gender segregation by job were comparatively low (ID value of 0.44 compared with 0.48 in the older, western European, Member States). This suggests some persistence of pre-transition patterns of the gender allocation of positions within the employment structure, at least for the decade following 1989. Thereafter, however, the ID score in the newer Member States has steadily risen and, by 2019, the relative positions of newer and older Member States had reversed. It is now in the newer Member States that employment segregation by job and gender is highest. In the older Member States, the ID index peaked a decade ago and declined in the period 2011–2019 to its lowest value recorded over the four time points.

By country, the lowest level of job-based segregation by gender in 2019 was recorded in Greece. This is also the country with the lowest ID score in each of the other years covered. Over the period 1998–2019, with the exception of Malta and Spain in 1998, Greece was the Member State with the lowest women's employment rate (47.3% in 2019). The combination of a low employment rate for women and a low ID suggests a reduced presence of those jobs in Greece where women often concentrate in other Member States, often in lower paying jobs. As is often the case with gender employment statistics, an apparently positive indicator – low gender segregation by job – reflects compositional characteristics of labour market participation that are less favourable, in this case a large gender employment gap and limited employment possibilities for women, especially those with lower qualifications. This is also the case in Italy, where the most cited reason for persistently high inactivity rates among working-age women (43% in 2020) has been caring responsibilities (for children or other dependents) (Eurostat [lfs_igar]).

Comparatively low ID scores were recorded in Denmark, the Netherlands and Sweden and it is also in these countries that there was the strongest decline in this measure of job segregation by gender over the period covered. These declines were strongest in Denmark and Sweden in the period up to 2007, while, in the Netherlands, the decline occurred in the most recent period. Broadly, the Member States are distributed in line with Table 3, with older Member States tending to have lower ID scores and newer Member States having higher scores, although there are some exceptions: Romania is in the less segregated half, while Belgium

Table 3: Duncan dissimilarity index values by Member State, 1998–2007 and 2011–2019

Member State	Change		Value
	1998–2007	2011–2019	2019
Greece	0.028	-0.017	0.386
Denmark	-0.051	-0.020	0.455
Sweden	-0.049	-0.031	0.458
Netherlands	0.003	-0.047	0.458
Luxembourg	-0.021	-0.004	0.461
Romania	0.013	0.030	0.473
Italy	0.031	-0.005	0.475
France	-0.013	-0.008	0.476
Ireland	0.006	-0.007	0.484
Germany	-0.009	-0.036	0.485
Spain	0.040	-0.019	0.492
Slovenia	0.011	-0.009	0.496
Austria	-0.010	-0.012	0.498
Poland	0.009	0.007	0.502
Portugal	0.042	-0.008	0.506
Hungary	0.013	-0.012	0.512
Belgium	-0.015	0.003	0.514
Bulgaria	0.057	-0.010	0.519
Lithuania	0.037	0.002	0.526
Cyprus	-0.010	-0.011	0.528
Estonia	0.042	-0.043	0.531
Finland	-0.026	-0.002	0.539
Czechia	-0.034	-0.006	0.540
Slovakia	-0.012	-0.036	0.545
Croatia		0.020	0.550
Latvia	0.048	0.042	0.572

Note: *Malta was omitted, as occupational data were not available at the two-digit level.*
Source: *EU-LFS (authors' elaboration)*

and Finland are in the more segregated half. Large increases in job segregation by gender tended to occur in the earlier period, up to 2007. After 2011, the ID values were stable (<±0.01 point change) or decreasing in most countries, with exceptions only among the central and eastern European Member States – Croatia, Latvia and Romania.

There are good a priori reasons for supposing that the extent of job segregation by gender varies among particular population subgroups. Younger labour market entrants are entering a numerically more gender-balanced labour market than was the case for their parents, and they are benefiting from a longer period of equality legislation and associated declines in discrimination and gender stereotyping of many jobs. Younger men and women are also less likely to be differentiated in terms of work tenure or experience; the large differences in this regard tend to occur among older cohorts with dependent children. On this basis, one might expect the group of younger workers to fall more equally into available jobs in the employment structure and to be less segregated than older cohorts. In a context of persistent gender inequality in the division of household caring responsibilities (Eurofound, 2007) and distinctive labour market participation responses of men and women at household level following childbearing, one could expect that the presence of dependent children could lead working mothers to take jobs more likely to be available in part-time form, that such jobs would be more likely to be stereotyped as typically women's jobs and that, as a consequence, gender segregation would be higher among working parents than non-parents. Finally, higher levels of education are a prerequisite for entry into most of the jobs that have enjoyed fastest employment growth in recent decades – professional-level jobs in ICT or the health sector, for example. The trend of increasing women's educational outperformance should translate into a growing share of female workers in such jobs where entry is more likely to be competitive and qualification based.

Effect of age, education and having dependent children

Using the ratio of dissimilarity indices allows these hypotheses to be explored. Table 4 shows the ratios of Member States and the EU as a whole in 2019, comparing populations by age, education and the presence of dependent children. When the ratio is 100, the country-level ID values are the same for each group compared. For example, there was no difference between younger and older workers in Croatia as regards gender segregation by job in 2019. When the ratio is greater than 100, the top category – the group of younger workers, tertiary-educated workers or workers without dependent children – tends to be more gender segregated than the bottom category – namely older workers, non-tertiary-educated workers and workers with dependent children. Likewise, the reverse is true when the ratio is less than 100.

The education level of the job holder is the most important determinant of gender segregation. Men and women who have tertiary-level qualifications are much less likely to work in gender-segregated jobs and those without degree-level qualifications are much more likely to work in gender-segregated jobs. This finding is true across all Member States, and education level is an especially strong vector of desegregation in Belgium, France, Ireland, Italy and Luxembourg. This effect is also identified in other empirical analyses of affluent countries. In a study based on US data, Blau and Kahn

Table 4: Ratios of dissimilarity indices by country for specific worker characteristics, 2019

Member State	Younger/ older	Tertiary/ non-tertiary	No children/ children
Austria	98	82	92
Belgium	98	67	96
Bulgaria	90	74	98
Croatia	100	77	90
Cyprus	94	69	91
Czechia	89	74	96
Denmark	81	78	
Estonia	104	87	97
Finland	96	81	
France	96	63	89
Germany	91	76	91
Greece	112	80	82
Hungary	94	78	92
Ireland	81	66	93
Italy	94	67	94
Latvia	91	91	98
Lithuania	94	81	98
Luxembourg	96	60	
Netherlands	89	74	88
Poland	105	76	97
Portugal	90	68	98
Romania	96	88	92
Slovenia	98	80	102
Slovakia	94	85	97
Spain	94	74	93
Sweden	89	75	
EU average	**94**	**73**	**92**

Notes: **Malta is not included in the table as the EU-LFS does not provide ISCO (occupation) and NACE (sector) data at the required level of detail for this Member State. Data on dependent children were not available for Denmark, Finland, Luxembourg or Sweden. For the comparisons by age group, younger refers to 15–39 years of age and older refers to 40–64 years of age.*
Source: *EU-LFS (authors' elaboration)*

(2017) note, for example, that, while substantial progress has been made by highly educated women moving into formerly male-dominated managerial and professional occupations, such gender desegregation has been less observed among less-educated women, for whom there was little integration into blue-collar occupations traditionally held by men. The effects of age and the presence of household children are in line with a priori expectations at EU aggregate level: younger workers and those without children are more likely to work in less gender-segregated jobs. However, these are less important vectors of desegregation. In the case of the older/younger cohort comparison, there are three countries – Estonia, Greece and Poland – where younger workers are more – not less – gender segregated by job than their older counterparts.

Large-employing jobs

The last approach to assessing the extent of and trends in job segregation in the EU is to look at trends in men's and women's shares of employment in the largest employing jobs. The jobs selected are those largely unaffected by changes in ISCO and NACE classification. Jobs such as teaching professionals in the education sector or personal services workers in the accommodation and food services sector may not be identical before and after the NACE and ISCO classification revisions in 2008 and 2011 but they designate largely similar and comparable jobs.

This makes it possible to track the gender employment share over the full period, 1998–2019, in 25 Member States. It includes all but one of the top 13 large-employing jobs in the EU in 2019 and these jobs account for over a third of all employment (66 million, 34%).

Gender employment segregation by job is very evident in Table 5. The ratio of female to male workers among building workers in construction is 1:100, while that of drivers in the transportation and storage sector is 1:20. Four out of five health associate professionals are women. Only 2 of the 13 large jobs featured (personal service workers in accommodation and food service activities and other craft or trade workers in manufacturing) fell into the gender-mixed category in 2019. There had been four jobs in this category in 1998, but the declining share of female agricultural workers and the increasing share of female health professionals led to their shifting to, respectively, mainly male- and mainly female-employing categories.

The biggest shift in gender share has been in the category of health professionals (+19 percentage points), a fast-growing job, while the share among teaching professionals also increased significantly (+6%). Declines in women's employment share were notable in structurally declining jobs such as those of agricultural workers and other craft or trades workers in the manufacturing sector. Men's employment share tended to grow mainly in jobs where employment overall was stagnant or declining.

Table 5: Change in women's share of employment in large-employing jobs in the EU, 1998–2019

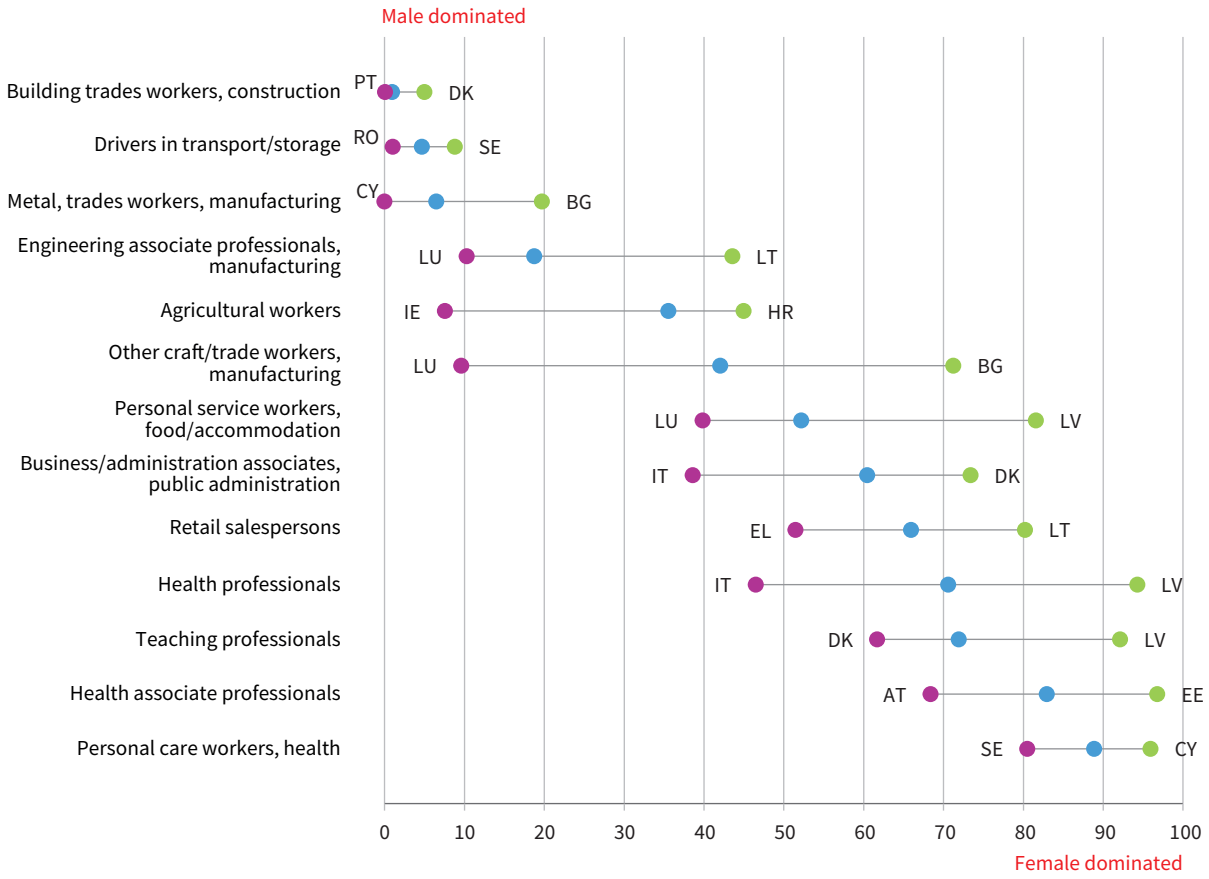
Job	Women's share of employment %			Declining or growing job?	Employment (millions)
	1998	2019	Change (pps)		
Retail salesperson	67	66	-1	▼	11.6
Teaching professional	66	72	6	–	8.5
Health associate professional	85	83	-2	–	4.7
Personal service worker, accommodation/food services	53	52	0	▲	4.8
Building, trades worker in construction	1	1	0	–	5.6
Health professional	52	71	19	▲	4.3
Personal care worker, health	87	89	2	–	3.9
Metal, machinery trade worker, manufacturing	7	6	-1	▼	4.5
Driver, transport/storage	4	5	1	–	4.4
Engineering associate professional, manufacturing	21	19	-2	–	3.2
Agricultural worker	44	36	-8	▼	4.8
Business/admininistration associate professional, public administration	58	60	3	–	2.6
Other craft/trade worker, manufacturing	48	42	-6	▼	2.9

Notes: *pps, percentage points. Data are for EU25, as data were not available for 1998 for Croatia or Malta. The 1998 data for Romania are from 1997 and for Bulgaria, Cyprus and Poland are from 2000.*
Source: *EU-LFS (authors' elaboration)*

When jobs are dominated by gender, this concentration is evident across countries and in the EU aggregate. The clearest example in Figure 14 is the heavily male-dominated job of building/trades workers in construction. The figure shows the countries with the smallest and largest share of women's employment in the indicated jobs in 2019, as well as the EU average female share of employment (see the annex for all country data). In over a third of Member States, the share of women in this job was recorded as <1%. Even in the country with the highest share of female building trades workers (Denmark), women accounted for only 1 in 20 workers (5%). A similar consistency across countries is observed for the other large-employing male-dominated jobs (drivers in transportation and storage and metal/trades workers in manufacturing) as well as for female-dominated jobs such as personal care workers in the health sector. Such jobs tend to be heavily gender dominated across countries.

Outside these gender-dominated jobs, the range across countries is much larger. This is the case for both blue-collar and white-collar jobs. Other craft and trades workers in manufacturing is a gender-mixed job as per the categorisation, although with a majority of male workers (58%). However, at national level, it varies between being male dominated in Luxembourg and being mainly done by women in Bulgaria. This job is also held largely by women in other central and eastern European countries – Czechia, Romania and the Baltic states – but tends to be male dominated or mainly held by men in all older Member States with the exception of Portugal. More generally, women's shares of employment in manufacturing jobs – including the white-collar job of engineering associate professional – tend to be higher in the central and eastern European Member States. While this is likely to be a legacy of an earlier era of state planning and a strong policy emphasis on women's labour market participation in

Figure 14: Country range of women's share of employment in large-employing jobs, 2019



Notes: *Purple markers indicate the Member State with the lowest share of women's employment in the indicated job, while green markers indicate the Member State with the highest share of women's employment. The blue marker indicates the overall EU27 women's employment share in 2019.*
Source: *EU-LFS (authors' elaboration)*

the pre-transition period, it is important to note that these shares have declined markedly since 1998 in most central and eastern European Member States. This is consistent with a pattern of defeminisation that is related to the changing composition of industry as well as cultural or political shifts. The sectors that have benefited from upgrading and foreign investment in the post-transition era in central and eastern European Member States have been more male-dominated and capital-intensive sectors such as machinery and auto production (Avlijas, 2016), while sectors that traditionally employ women, such as clothing, textiles and footwear – which are labour intensive and generally low paying – have declined there as elsewhere.[6]

Service sector jobs

Another common pattern is that large service sector jobs in many of the central and eastern European countries have an even higher than average share of women's employment. This is the case both for mainly private sector lower level service jobs (personal service workers in accommodation and food services and retail salespersons) and for higher level professional, mainly publicly funded, jobs (teaching professionals and health associate professionals, for example). As Figure 14 suggests, these patterns are especially evident in the Baltic states. The corollary is that men's shares tend to be higher than average in lower paying service sector jobs in older Member States; a majority of personal service workers in accommodation and food services are men in Belgium, Denmark, France, Greece, Luxembourg and Sweden, for example, while the mainly female job of retail salesperson is more gender mixed in Denmark, Greece, Italy and Sweden.

The trend of increasing women's share of professional healthcare jobs has already been noted. Only in one country, Italy, are the majority of health professionals now men, while women account for at least two of every three associate health professional jobs in all countries and more than 90% of such jobs in the Baltic Member States, Bulgaria and Slovakia.

Summary

To summarise the main findings of the above descriptive analysis in this chapter, men's and women's employment remains highly gender segregated by job, by occupation and by sector. There has been a growing concentration of female/male employment in mainly female-/male-dominated jobs at EU aggregate level. Over the period 1998–2019, the share of employment in gender-mixed jobs has declined, while the share of employment in jobs employing mainly women has increased and that in jobs employing mainly men has decreased. The increase in women's share of employment has therefore fed mainly into jobs that already employed more women than men.

Over the most recent decade, since 2011, based on evidence from dissimilarity indices, there has been evidence of some gender desegregation of employment in older Member States. However, in the post-2004 accession countries, there has been increased segregation over the entire period covered, 1998–2019. The transition to and consolidation of market-based economies in these countries has been associated with a departure from previously low levels of gender segregation, which were in part a result of policy commitments to high levels of women's employment as well as equal opportunities in the workplace.

Gender segregation by job is much lower across countries among tertiary-level graduates. Education is an important vector equalising access for men and women to the same jobs. Lower qualified men and women tend to work in different jobs.

In the largest-employing jobs, women's share of employment has risen, in particular in professional jobs in the predominantly state-funded sectors, for example health and teaching professionals. These are also jobs in which employment demand has been tending to increase. Women's shares of employment have declined in structurally declining jobs, for example in agriculture and manufacturing.

6 Unfortunately, EU-LFS microdata are at the one-digit level of sectoral detail so it is not possible to observe differences in gender shares across different subsectors.

3 Shifts in the employment structure by gender: Upgrading or polarisation?

The approach in this chapter is to explore how the structure of employment in Europe has changed in terms of gender in recent years, applying the jobs-based approach used in the European Jobs Monitor analyses for over a decade. A job is defined as a given occupation (at the two-digit ISCO level of detail, $n = 43$) in a given sector (at the one-digit NACE level of detail, $n = 21$), for example a customer service worker in the retail sector or a health professional in the health sector. Using this approach results in a total of 903 (21 x 43) potential different jobs, although in practice the number of jobs with observed employment varies between around 500 in small Member States and around 770 in France.

The analysis that follows relies largely on average gross hourly wage estimates from the SES to rank jobs and to assign them to job–wage quintiles. This is useful for presentation purposes and allows a simple visual inspection of shifts in employment by job–wage quintiles over time.[7]

Employment shifts by gender in the EU from 1998 to 2019

Using the jobs-based approach to describe shifts in the employment structure over the last two decades is complicated by major revisions of the sector (2008) and occupation classifications (2011) that underpin the method. The breaks in both classifications were radical enough to make precise comparison of jobs (again, using the definition of jobs as occupations by sector) across the breaks difficult if not impossible. This chapter will look first at aggregate employment shifts by gender and job–wage quintiles for the EU as a whole for three separate periods: 1998–2007, 2008–2010 and 2011–2019. It will then proceed to look in somewhat more detail at developments during the most recent period, 2011–2019. In addition, Box 4 (p. 37) reveals the first impacts of COVID-19 on jobs by gender, using more recent quarterly EU-LFS data.

As shown in Figure 15, the period from the late 1990s until 2007 was a more or less unbroken period of economic expansion and high employment growth. More than 20 million jobs were created in the EU15 over this nine-year period. The succeeding short two-year period featured the global financial crisis, sharp economic contraction and the reduction of headcount employment by over six million (EU27). The final period, 2011–2019, commenced with the tail-end of the Great Recession of 2007–2009, which was followed in the EU by the sovereign debt crisis of 2011–2012. Employment continued to contract, although more slowly, before a durable recovery, starting in 2013, initiated a new period of broad employment expansion – however, the rate of employment growth was much reduced compared with the pre-2007 expansion. This is attributable in part to the mild, low-growth nature of the recovery and in part to demographic ageing and the shift from a growing working-age population to a declining one in 2011–2012.

As highlighted throughout this report, employment growth for women has outpaced that for men more or less consistently over the last two decades, in both absolute and relative terms.[8] The ratio of male to female workers in the EU15 has gone from 58:42 in 1998 to just over 53:47 in 2019. The official EU indicator of the gender employment gap – the difference between the employment rates of men and women aged 20–64 years – declined over the slightly shorter period of 2002–2019 from 17.8% to 11.7% (Eurostat [lfsa_ergan]). Higher employment growth for women is evident in each of the three panels in Figure 15. In the generally upgrading expansion that took place up to 2007, women accounted for a higher share of employment growth across the job–wage distribution, even in low-paying jobs (quintiles 1 and 2) where employment growth overall was weakest, and in mid-paying jobs, which tend to have a disproportionate share of men's employment.

The Great Recession in large part affected sectors employing mainly men. Construction and manufacturing jointly shed more employment than the economy as a whole, which means that the remaining sectors increased in headcount during 2008–2010. These impacts are clearly seen in the very sharp declines in men's employment in quintiles 2 and 3. Women's employment contracted in the same quintiles, but nowhere near as dramatically. At the same time, mainly state-funded sectors in which women are overrepresented, notably health and education, continued to grow.

7 For a more complete description of the European Jobs Monitor methodology, see Eurofound (2021). For a discussion on the different applications of the jobs-based approach used in this chapter and in Chapter 1, see the 'Methodological approach' section in Chapter 1.

8 Even controlling for the lower average weekly hours and greater share of part-time working among women, labour inputs for women have grown faster than for men.

Figure 15: Employment shifts in the EU by gender and job–wage quintile, 1998–2019 (%)

Notes: *Data are for the EU27, except for 1998–2007 for data availability reasons (for this period, data are for the EU21, that is, no data were available for Bulgaria, Croatia, Cyprus, Malta, Poland or Romania). The total employment change by quintile and gender (with a fixed assignment of jobs to quintiles in each period) was divided by the number of years and is expressed as a percentage in this figure. Quintile 1 represents the lowest paid job–wage quintile and quintile 5 represents the highest.*
Source: *EU-LFS and SES (authors' elaboration)*

During 2011–2019, which overall was a period of modest employment expansion, women's employment growth outpaced men's employment growth only in high-paying jobs – as was consistently the case over the three periods – but, in contrast with 1998–2007, in the later period it was men and not women making up the bulk of the comparatively marginal growth in low-paying employment.

In the context of the ongoing debate in labour economics and the sociology of work over whether developed economy labour markets are upgrading or polarising (Autor et al, 2006; Goos et al, 2009; Fernández-Macías and Hurley, 2017; Oesch and Piccitto, 2019), the empirical evidence from the EU Member States over the last two decades offers qualified support to the polarising hypothesis – relatively weak growth in the middle of the job–wage distribution compared with the extremes, as predicted by the routine-biased technological change (Autor et al, 2003) – and more robust support for the upgrading hypothesis of consistently top-skewed employment growth in line with predictions of skill-biased technological change.

The Great Recession was clearly a period of employment polarisation with the destruction of many mid- and mid- to low-paying jobs mainly held by men. US research has pointed out that recessions in particular are concentrated periods of destruction, in particular of employment that is high in routine content (Jaimovich and Siu, 2012), and that this type of employment does not come back post-recession. Such an explanation is in part consistent with what occurred in 2008–2010 in the EU and indeed in previous recessions. There was a sharp decline in blue-collar manufacturing employment, much of it male dominated and much of it routine in nature. Declines in manufacturing employment, while structural, also tend to accelerate during recessions.

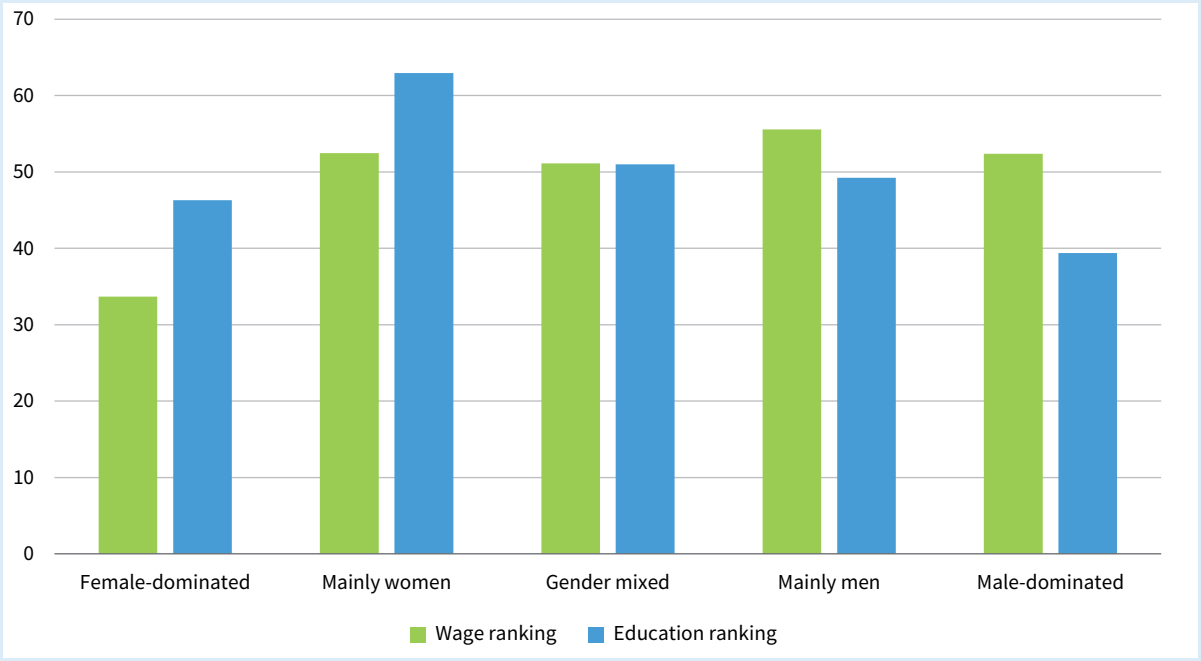
However, work in the other sector most affected by job loss – construction, which also mainly employs men – is largely manual and non-routine in nature and resistant to technological displacement. In this respect and in terms of qualification profile, it resembles more closely some of the lower paying service jobs carried out mainly by women (Dwyer, 2013). The difference is that such jobs tend to enjoy a higher wage and to be located in the middle rather than the bottom of the wage distribution (see Box 3).

Box 3: Differences by gender in job–wage and job–education rankings

The main criterion used for ranking jobs in the jobs-based approach is average hourly wage. However, there are other attributes of jobs that can equally serve the same purpose of distinguishing between poor, middling and good jobs. Previous European Jobs Monitor analysis has compared job–wage-based rankings with rankings based on a composite measure of job quality based on a broader set of considerations including health and safety, contractual security, autonomy and work–life balance (Eurofound, 2013). The educational level of the job holder is also used as a proxy indicator of job quality on the assumption that jobs requiring higher qualifications will also tend to exhibit other positive job quality features. Generally, different ranking criteria tend to be highly correlated. Jobs that are well paid tend to be those in which job holders have higher qualification levels and better working/employment conditions. Human capital theory offers a theoretical justification of the correlation between wages and educational qualifications. Education equips workers with skills that improve their productivity, and their higher productivity sustains higher wage levels.

It is also the case, however, that these correlations are less strong for certain types of jobs, notably based on gender composition. Figure 16 compares job–wage-based rankings with education-based rankings – based on the weighted average educational qualifications of job holders. It uses the five exclusive job categories based on the gender composition of employment in those jobs outlined in Chapter 2. The dependent variable is the employment-weighted percentile ranking (0 for the lowest paid job and 100 for the highest) of all jobs that fall into each job composition category (at country level), based on either wages or education. The figure covers all EU27 Member States, while Table 6 shows the relevant country-level data.

Figure 16: Mean wage and education rankings in the EU27 by gender composition of jobs, 2019



Source: *EU-LFS (authors' elaboration)*

The main finding is that jobs that are female dominated tend to have a higher ranking in terms of education than in terms of wage, while the opposite is true for jobs that are mainly carried out by men. For female-dominated jobs (>80% women), the average job–wage percentile is just below 34, that is, 16 percentage points below the median, compared with a job–education percentile much closer to the median (46). A similar gap is observed for jobs mainly held by women (60–80% women), for which there is an 11-percentage point difference from the median, although jobs in this category tend to be much better paid with higher qualification levels. The reverse is the case for jobs mainly held by men and male-dominated jobs, which tend to enjoy a significant wage premium vis-à-vis the average qualification levels of the job holders.

The patterns identified at EU aggregate level are also observed consistently across Member States. In only one Member State are female-dominated jobs ranked higher on average in terms of pay than education – Luxembourg. This is the one Member State where education and wage rankings tend to be less affected by gender composition of jobs, but this small country is idiosyncratic in this respect. For more than half of all Member States, female-dominated jobs have an education ranking at least 10 percentage points higher than their wage ranking, with notably high differentials (>20 percentage points) in Estonia, Finland, Italy and Portugal. These also tend to be the countries with the largest job–wage premiums relative to educational level in male-dominated jobs.

Table 6: Difference between education- and wage-based rankings by country and gender composition of jobs

Member State	Female-dominated	Mainly women	Gender mixed	Mainly men	Male-dominated
Austria	8	7	0	-6	-8
Belgium	4	11	4	-8	-10
Bulgaria	12	11	0	-11	-13
Croatia	11	5	4	-3	-11
Cyprus	10	13	5	-4	-21
Czechia	10	13	-6	5	-10
Denmark	11	13	-2	-7	-13
Estonia	22	16	-5	-4	-22
Finland	27	8	-2	-10	-24
France	10	10	-3	-6	-13
Germany	12	4	0	-3	-10
Greece	11	6	8	-10	-17
Hungary	7	12	-8	0	-6
Ireland	18	12	-1	-6	-19
Italy	24	11	10	-10	-18
Latvia	17	8	1	-5	-19
Lithuania	13	11	-5	-10	-13
Luxembourg	-2	2	1	3	-3
Malta	17	-1	1	0	-3
Netherlands	6	9	6	-5	-15
Poland	9	18	-4	-5	-12
Portugal	20	10	-3	-10	-17
Romania	15	15	-15	2	-2
Slovakia	16	19	-2	-9	-16
Slovenia	9	11	-5	-2	-11
Spain	13	15	3	-9	-19
Sweden	19	21	-6	-12	-19
EU27	**13**	**10**	**0**	**-6**	**-13**

Source: *European Jobs Monitor job rankings (0–100 scale from lowest paid/qualified to highest paid/qualified) based on the EU-LFS and SES 2014 (authors' elaboration)*

With only a few exceptions, jobs that are female dominated rank higher in terms of education, while those that are male dominated rank higher in terms of wages. These gender-specific patterns tend to also sharpen as the concentration of men or women in a job increases. The fact that the gender pay gap has contracted relatively

slowly can be surprising in a context of women's continuing and increasing educational outperformance of men among younger cohorts.

However, there has been a rise in organisational HR strategies in the 2000s that promote individual evaluations and sex- or race-based discrimination may even promote underutilisation of skills (see, for example, for the UK Rafferty, 2020) and also differences in which types of organisations younger and middle-aged women are selected into or select themselves into. For example, employer–employee data in Canada show this tendency, so evidence may point towards the need to lower discrimination against the hiring of mothers (especially younger mothers with one child), and avoid merit-based HR systems that pay men 'fatherhood premiums' (Fuller and Cooke, 2018; Fuller, 2018).

A tentative line of argument can be advanced that the wage premiums in some less-qualified jobs mainly held by men – related to traditions of strong collective representation as well as greater societal value accorded to work traditionally done by men – mark out such jobs as vulnerable to displacement on labour cost as well as technological grounds, especially in a context of declining labour power. Such wage premiums also challenge the assumption that non-routine, manual work needs to necessarily be low paying. The fact that personal care-related jobs are low paying relates in large part to the devaluation of jobs considered as 'women's work'. A revalorisation of such jobs, including via higher pay, might encourage labour supply – from both men and women – to match demographically induced increases in demand (Dwyer, 2013).

The period 2011–2019 also featured relatively weak growth in the mid- and low- to mid- job-wage quintiles, although the polarisation that occurred in recent years was much milder and was mainly a characteristic of men's employment growth rather than women's (which has been more upgrading).

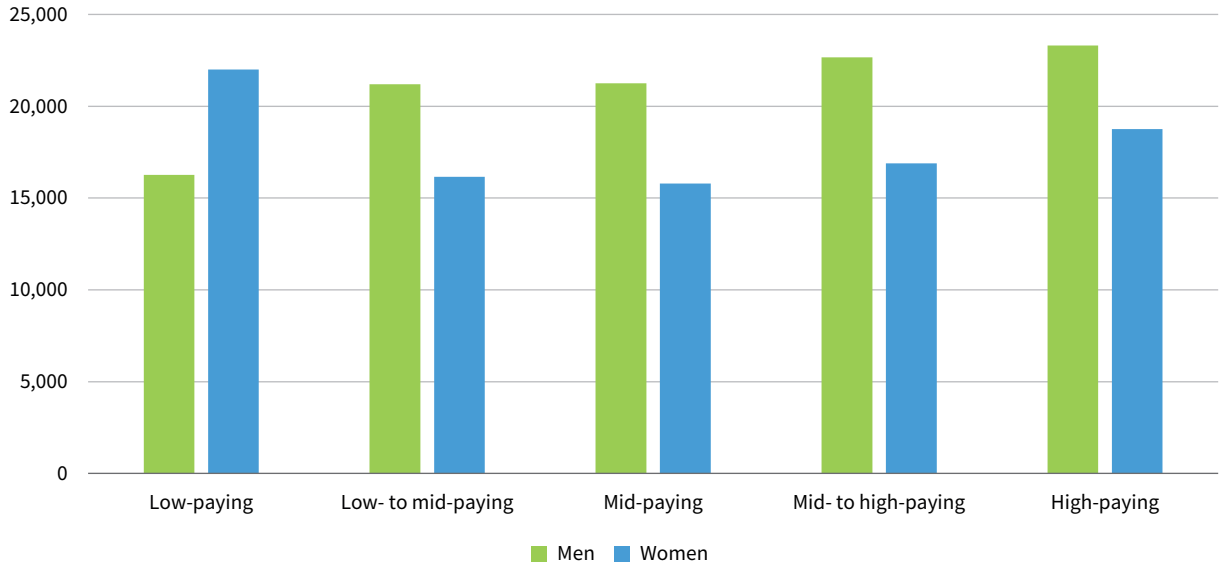
However, the evidence for upgrading more generally is a lot clearer (see also Oesch and Piccitto, 2019). The earlier employment expansion up to 2007 was upgrading, with over 80% of employment growth taking place in the top two quintiles and the remaining growth more or less equally shared across the bottom three quintiles. The most consistent pattern observed across the three periods is the skew of employment growth to well-paid jobs (generally requiring higher level qualifications) in the top two quintiles, in line with the predictions of skill-biased technological change. Even during the recession that followed the global financial crisis, employment continued to grow in top-quintile jobs.

Women have accounted for the lion's share of this growth in well-paid employment in each of the three periods, and the pattern of women's employment growth has been more upgrading overall and has been less affected by the business cycle. Meanwhile, men's employment has been upgrading but with some polarisation over the last decade, albeit mainly linked to the twin recessions in the period 2008–2012.

Figures 15 and 16 focus on marginal change, that is, shifts in employment by gender over time. They convey a positive message regarding women's employment, namely of quantitative and qualitative shifts in employment favouring female workers in recent decades. However, as indicated in Chapter 1 (in the 'Methodology' section), this version of the jobs-based approach abstracts from the unequal starting distribution of employment. For this reason, it tends to give an exaggerated impression of the pace of convergence of gender gaps.

In 2019, as Figure 17 shows, women's employment was heavily skewed towards jobs in the bottom quintile, while male-dominated jobs were more gently skewed to the top 20% of jobs in terms of pay. These patterns were even more evident in an earlier analysis (Eurofound, 2014). There has been some convergence of the gender gap, as can be inferred from Table 6. Nonetheless, it is evident that the greater growth in women's employment in well-paid jobs in recent years is only very slowly eroding differentials in the gender allocation of employment across the job–wage distribution and that the strong overrepresentation of women in lower paid jobs persists.

Figure 17: Employment distribution in the EU27 by gender and job–wage quintile, 2019 (thousands)



Note: *Quintiles are based on 2011 employment weights.*
Source: *EU-LFS and SES (authors' elaboration)*

Employment shifts at national level from 2011 to 2019

Figure 18 focuses on the period 2011–2019, which at EU aggregate level was a time of moderate employment expansion when the pattern of shifts was favourable to female workers. The first thing to observe is the diversity of national patterns of employment shifts, both overall and in terms of gender composition.

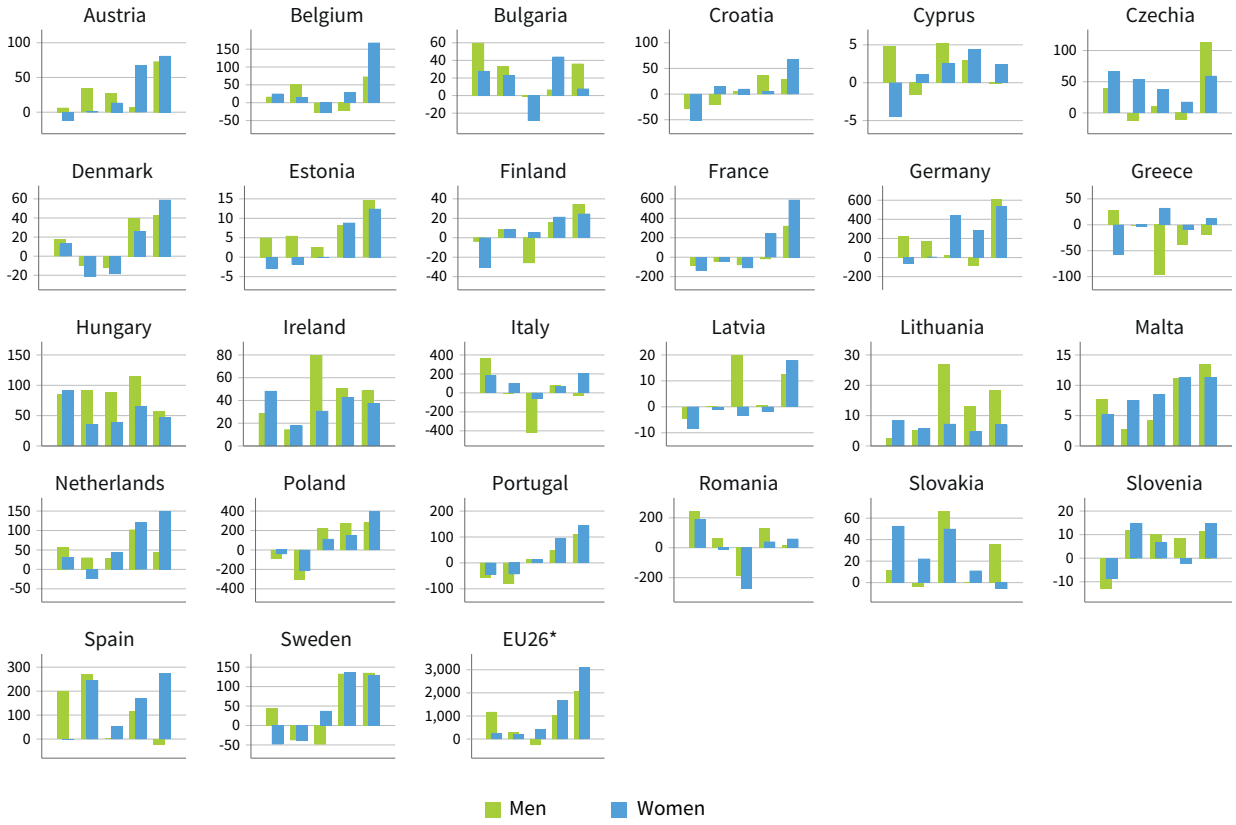
A number of countries were upgrading in this period, consistent with the EU aggregate picture – Austria, Belgium, Croatia, Denmark, France, Germany, Poland and Sweden – with most employment growth in the top one or two quintiles. However, there were various other patterns of employment shifts reflecting different national pathways of recovery from the global financial crisis. Polarisation was observed in Bulgaria, Czechia, Greece, Italy and Spain. Some countries – Ireland, Latvia and Lithuania – have experienced 'growth in the middle', namely inverted polarisation, in large part owing to the recovery of men's employment in sectors affected most in the crisis, for example construction. In addition, there were other Member States with shift patterns that were more irregular and less easy to characterise.

This diversity across countries is also evident in relation to the gender breakdown. Quantitatively, in contrast with the EU27 as a whole, men's employment growth was greater than women's growth in the Baltic states, Bulgaria, Cyprus, Hungary and Ireland. Furthermore, in some countries, men's employment growth outpaced women's in the top quintiles, including in Czechia, Germany, Hungary, Ireland, Malta and Slovakia – despite the aggregate shift favouring women's employment.

The variation of national patterns is epitomised by the two Iberian countries. In Spain, there was a clear pattern of polarisation with contrasting shifts in men's and women's employment. Men's employment growth was relatively weak in the top three quintiles and was strongly concentrated in low-paying jobs. Women's employment growth was mainly in high-paying employment but with some growth in mid- to low-paying jobs. Portugal, on the other hand, showed an upgrading shift in employment, with job destruction in low-paying jobs and increasing employment growth along the wage distribution, consistently for both men and women.

The (polarising) growth of low-paying employment among men was evident in some larger, more populous Member States, notably Germany, Italy, Romania and Spain, as well as the Netherlands and Sweden. One potential explanation is that male workers who lost their jobs in the manufacturing and construction sectors during the crises subsequently took up generally lower paying service jobs – often in roles in which women have predominated, such as in food preparation, building cleaning and maintenance, and retail sales. While this supposition is circumstantially supported in the cross-sectional EU-LFS data by an analysis of employment shifts at individual job level, confirmation of this trend would require longitudinal data.

Figure 18: Employment change between 2011 and 2019 in the EU by job–wage quintile, gender and country (thousands)



Note: **Luxembourg is not included due to data limitations.*
Source: *EU-LFS (authors' elaboration)*

It does, however, highlight one interesting difference between the pre- and post-financial crisis periods. There has been a shift from low-paying employment growth among women pre-crisis – an increase of three million jobs in 1998–2007 in the two bottom quintiles among women, compared with an increase of less than 0.8 million among men – to the post-crisis period when men's employment growth dominated in bottom-quintile jobs. Relatively strong employment growth in low-paying jobs – at least relative to mid-paying jobs – is a precondition of employment polarisation. Any polarisation in EU labour markets since 2011 has been largely attributable to men's employment.

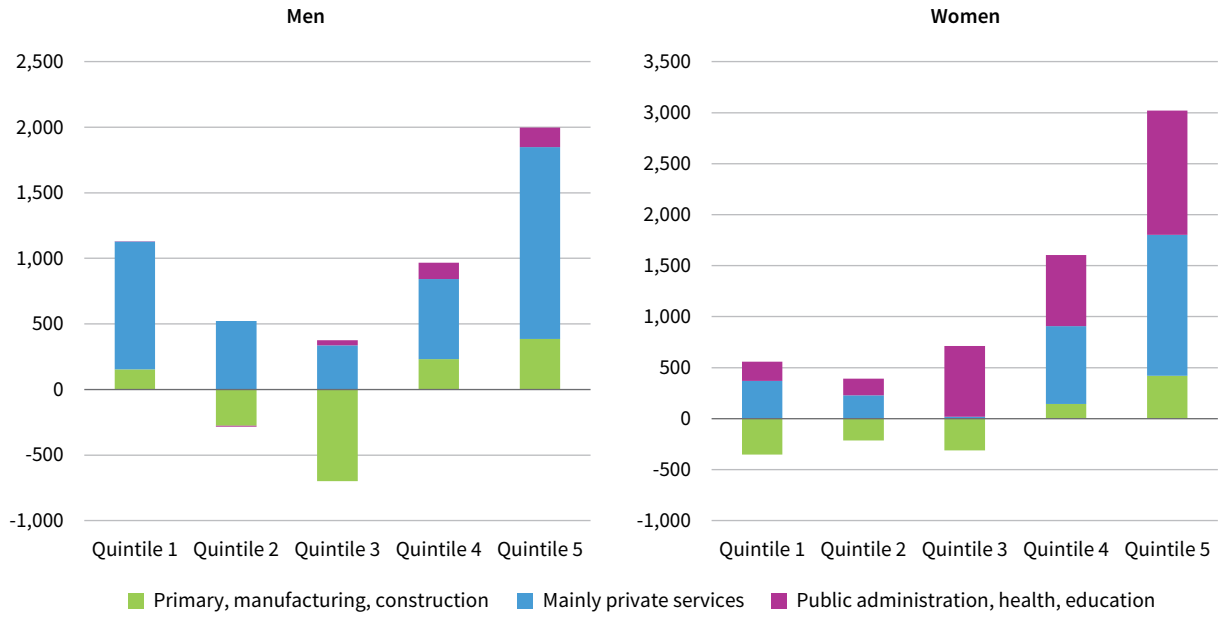
Expansion of women's employment in the state sector

Figure 19 breaks down employment shifts at EU aggregate level in 2011–2019 by gender and job–wage quintile according to a broad sector aggregation. First of all, and most obviously, the shift to employment in services became obvious during this period (Wren, 2013). For both men and women, service sectors accounted for all or nearly all of recent employment growth across each of the five job–wage quintiles.

However, the tendency for men and women to be classified in different service sectors was also evident. A much higher share of women's employment growth than men's was in the predominantly state-controlled sectors of health, education and public administration. These sectors accounted for over half of women's net employment growth in mid- and high-paying employment. At the same time, these sectors made a relatively marginal contribution to men's employment growth in the same quintiles and little or no contribution whatsoever to men's employment growth in low-paying jobs (quintiles 1 and 2).

Men's employment growth was very much concentrated in the broad residual group of mainly private services, with the largest gains recorded in information and communication, transportation and storage (+0.7 million each), accommodation and food services and professional, scientific and technical services (+0.6 million for the latter two sectors). Women's employment growth was strongest in health (+1.8 million) and education (+1.2 million), as well as professional, scientific and technical services (+1.5 million).

Figure 19: Employment change in the EU27 by job–wage quintile, gender and broad sector, 2011–2019 (thousands)



Notes: *Data are for the period 2011–2019 except for Germany (for which data are for 2012–2019) and France and the Netherlands (for which data are for 2013–2019) due to inconsistencies in classifications. The figure covers all NACE one-digit sectors. 'Primary, manufacturing, construction' includes agriculture, mining, manufacturing and utilities (NACE one-digit levels 1–6). 'Public administration, health, education' includes health, education, public administration and extra-territorial organisations. All remaining sectors are categorised as 'mainly private services'.*
Source: *EU-LFS and SES (authors' elaboration)*

This growth in services headcount was accompanied by a net overall decline in employment in the remaining sector grouping – which comprises construction, agriculture, mining and manufacturing/utilities. These are sectors that mainly employ men. Some – agriculture and mining – have been in secular decline over a long period predating 2011 and continued to shed employment during 2011–2019. The long-term trend in manufacturing – the largest sector, with some 32 million workers in 2019 – has also been of employment decline, but headcount increased over the period by some 1.3 million (4%) in this sector, just below the average rate of employment growth (5%). It is notable that while employment grew in this sector for men and women, it was mainly in well-paid top-quintile jobs. This growth came mainly in the same two manufacturing sector jobs for both men and women: business and administration professionals and science/engineering professionals. Employment in traditional blue-collar occupations declined in this sector grouping, but these declines were mainly in mid-paying jobs for men (especially in construction) while for women the declines were spread across the bottom three quintiles and took place mainly in the agriculture sector.

Aggregate employment shifts over 2011–2019 were upgrading for women and upgrading with polarisation for men. Some elements of an explanation can be seen in how sectoral employment shifts have played out differently by gender. Predominantly state-paid employment has contributed strongly to the pattern of upgrading for women but only marginally to growth at the top of the wage distribution for men. It has therefore been an important factor in both quantitative and qualitative shifts that have favoured women's employment.

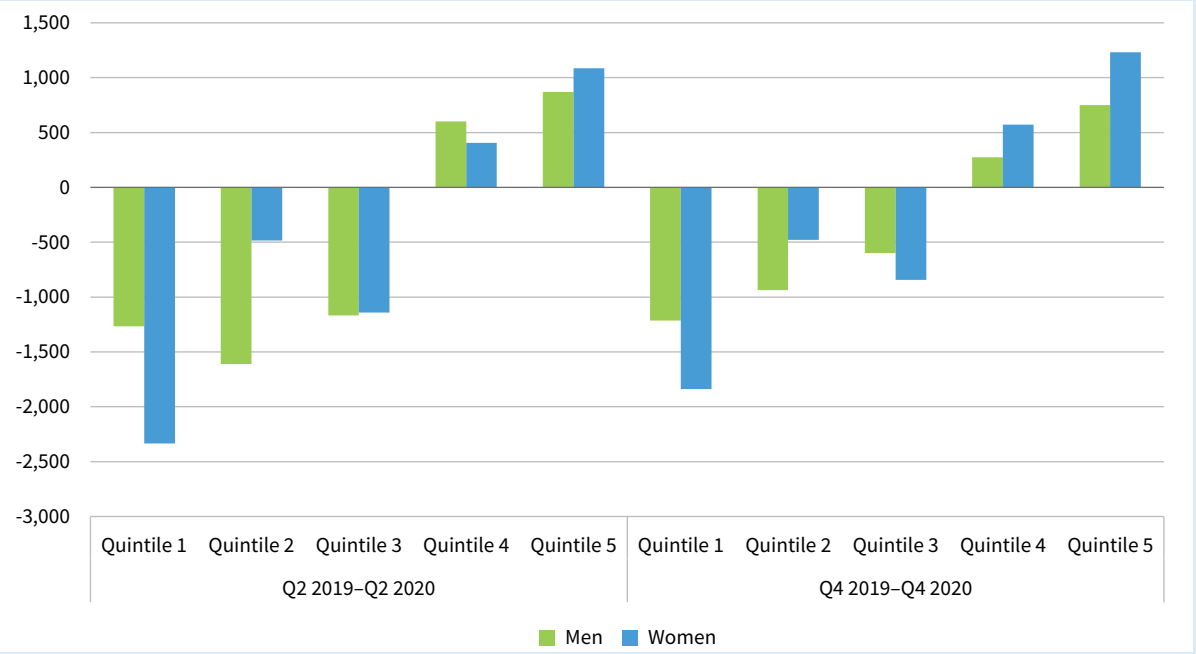
Meanwhile, other mainly private service sectors tended to create employment in jobs at the top and bottom of the wage distribution but relatively little employment was created in mid-paying jobs and thus these sectors contributed to employment polarisation. This is more clearly the case for men than women over the period in question; as already indicated, men accounted for most of the recent growth in low-paying (quintile 1) employment and nearly all of this growth was in service sectors (in particular, accommodation and food services, +0.6 million). Women's employment growth in mainly private services was more top skewed and upgrading – although with some polarisation – while men's employment growth was more clearly polarising.

Employment shifts in the primary/manufacturing/construction sector also contributed to men's employment polarisation – notably via construction sector employment losses – while, for women, the pattern was one of upgrading, with employment lost in low-paying jobs but gained in high-paying jobs.

Box 4: Employment shifts by gender during the COVID-19 crisis in 2020

The COVID-19 crisis led to sharp employment losses at the outset of the pandemic in Q2 2020, with some modest recovery throughout the rest of 2020. A comparison with the global financial crisis a decade earlier showed that headcount loss was concentrated in the lowest job–wage quintile and especially among low-paying female workers (Eurofound, 2021). In contrast, the financial crisis (2007–2008) resulted in the sharpest losses in the middle of the job–wage distribution, with much more severe impacts on men's employment. These differences in large part reflect the different sectors most affected by either crisis: construction and manufacturing in the aftermath of the financial crisis – sectors that mainly employ men – and accommodation, transport, food and beverages, etc., during the pandemic, which are sectors with a higher share of women's employment (EIGE, 2021b).

Figure 20: Employment shifts year on year in the EU27 by job–wage quintile and gender, Q2 and Q4 of 2019–2020 (thousands)



Source: *EU-LFS and SES (authors' elaboration)*

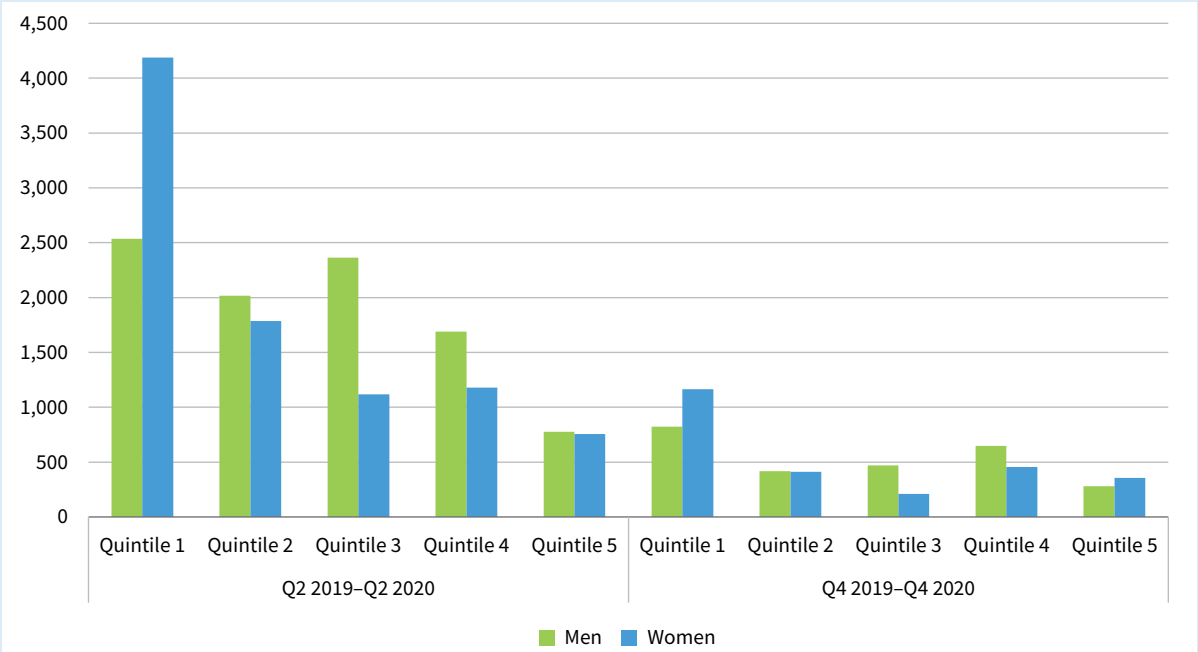
As Figure 20 illustrates, job losses were very much bottom skewed in terms of the wage distribution. Net employment losses were sharpest in bottom-quintile jobs and occurred only in the bottom three quintiles. Employment grew in the top two quintiles again with a strong skew towards the best-paid, top-quintile jobs.[9] Women accounted for a roughly equal share of job loss as men in the initial phase of the pandemic (in the 12 months to Q2 2020, -2.5 million versus -2.6 million, respectively) but women's job loss was somewhat less than men's in the remainder of 2020 (-1.4 million versus -1.7 million, respectively, in the 12 months to Q4 2020). Women's employment was more sharply 'upgrading' than men's employment, with stronger growth in high-paying jobs but also greater employment loss in low-paying jobs. As women tend to be overrepresented in sectors with a high level of social contact, they were most affected by lockdown measures.

However, the patterns of job loss by quintile changed very little in the period between the first and second waves of the pandemic. It was the same jobs, occupations and sectors that were initially most affected by the crisis that were most likely to record year-on-year declines in employment, albeit at a lower level, up to the end of 2020.

9 One consequence of this is that average wages are likely to have increased for purely compositional reasons.

The largest decline in labour inputs during the pandemic, in its initial phase, arose as a result not of job loss but of the state-supported furloughing or temporary lay-off of workers. There were over 18 million more workers employed but not working during Q2 2020 than in the same quarter a year earlier, and just over five million more in Q4 2020 than in the same quarter a year earlier. As Figure 21 confirms, furloughing was heavily concentrated in lower paid jobs and especially among lower paid women. Half (4.2 million) of female furloughed workers in Q2 2020 were working in the lowest paying 20% of jobs compared with less than 30% of male workers, among whom furloughing was more evenly distributed across quintiles 1–4 (low–mid- to high-paying jobs).

Figure 21: Year-on-year change in workers employed but not working (furloughed) in the EU27 by job–wage quintile and gender, Q2 and Q4 of 2019–2020 (thousands)



Source: *EU-LFS and SES (authors' elaboration)*

Although the scale of furloughing had declined markedly by Q4 2020, it was still low-paying (especially female) workers who were most likely to be on furlough in Q4 2020. By this stage, the incidence of furloughing was less obviously skewed towards lower paid workers. The comparatively low increases reported in the top quintile in both periods are consistent with many well-paid workers being able to transfer to work from home, a trend most likely to occur among professional and managerial occupations (European Commission–JCR, 2020b).

In summary, initial indications that the pandemic recession disproportionately affected women's employment (a 'she-cession') are not borne out by the quantitative shifts in employment observed. Employment declines were similar for men and women in Q2 2020 and the tentative recovery that began in late 2020 was felt more in women's than in men's employment. However, the sharpest declines in labour input were experienced by low-paying workers and in particular low-paying female workers. This manifested itself in both higher levels of furloughing and sharper employment contraction.

Summary

To recap, over the extended period covered in this chapter – 1998–2019 – the gender employment gap has narrowed significantly, as women's employment accounted for just over two-thirds of total net employment growth of around 30 million jobs. The main pattern of aggregate employment shifts over the period was one of upgrading, with growth skewed towards top-paying jobs. The distribution of employment continues to qualitatively favour men, who account for a majority in jobs accounting for the top 80% of employment by pay, while women account for a majority in the lowest paying jobs only. However, employment shifts in the period have favoured women not only quantitatively but also qualitatively.

Women in each of the three periods covered have benefited most from employment growth in well-paying jobs (top quintile) and their employment shifts have been more upgrading – skewed towards higher paying jobs – than men's. Employment growth in predominantly state-paid sectors has, in particular, contributed to the upgrading shifts observed among women. Men's employment polarised sharply during the global financial crisis, with steep falls in mid-paying employment, and there subsequently continued to be an overlay of polarisation in the period 2011–2019, with comparatively strong men's employment growth in low-paying jobs. While these patterns in the aggregate are partially captured in some of the national-level data for the most recent period (2011–2019), the national data show a greater variety of employment shift patterns, including by gender.

4 How job task profiles differ by gender

The aim of this chapter is twofold. First, it sets out to provide evidence that female-dominated jobs are systematically different from male-dominated or gender-mixed jobs in terms of their task profile. Second, it contributes to determining if – and if so to what extent – the distribution of tasks differs between male and female workers once individual and job characteristics are simultaneously controlled for.

The first section of this chapter reviews relevant literature on the task content of jobs from a gender perspective. The second section introduces the taxonomy of tasks used as a conceptual basis for the empirical analysis. Then, after illustrating the methodological approach and data sources used, the third section presents and discusses the results of the analysis of gender differences in the distribution of tasks between jobs.

Gender and the task content of jobs

The historical growth of the service sector has created jobs in which women are at least assumed to have a natural advantage over men. For example, providing services is relatively more intensive in the use of 'brain' skills (notably interpersonal and communication skills), while the production of goods (mostly linked to male-dominated sectors) requires a more intensive use of 'brawn' skills (that is, manual labour and these activities are also more susceptible of being automated). While this might not hold for every sector, with female-dominated care and cleaning services notable exceptions, this is on average the case.

In this context, some of the most traditional (supply-side) explanations for the gender division of labour are based on different orientations that women and men have in performing different types of jobs. Magnusson and Tåhlin (2018) formulated a specific hypothesis concerning the structure of work content and how this might be linked to gender and class. According to the authors, the gender division of work is mainly related to communication and expressiveness, which are closely linked to relational work tasks, which on average are carried out more by women (as opposed to work oriented towards things, which is predominantly done by men).

Using a selected set of job requirements available in the US *Dictionary of occupational titles*, Rendall (2017) provides evidence that women have historically tended to work in occupations with less brawn requirements than men, especially in unskilled jobs. The data also show a strong rise in the wage returns to education for both the unskilled and skilled, with the relative rise being twice as large for college-educated workers. In terms of intellectual/cognitive skills, some studies find that, while women show a high degree of verbal competence, men are better at solving abstract mathematical and visuospatial problems (Maccoby and Jacklin, 1974; Jones, 2008).

However, apart from educational choices (segregation in education), gender stereotypes and societal norms also strongly influence the set of skills that women and men learn and possess. While recent evidence confirms that gender gaps in spatial ability are the largest of all gender differences in cognitive abilities (Reilly et al, 2017), other studies find that, across countries, the ability score in mathematics for women is negatively correlated with measures of gender gap in status and other indices of gender inequality (Guiso et al, 2008).

With regard to social tasks, evidence from UK and German data shows that the rise in the incidence of interpersonal tasks accelerated between the late 1970s and the early 1990s, and that women are overrepresented in these tasks (Borghans et al, 2008). The authors argue that effective interpersonal interactions involve caring, to establish cooperation, and at the same time directness, to communicate in an unambiguous way. Gender differences have been also found in terms of other social attitudes such as fairness, altruism and caring behaviour, which may be more highly valued in service jobs, notably those that involve assisting or caring for others (Bertrand, 2011; Azmat and Petrongolo, 2014).

In the US, Autor and Handel (2013) found evidence that workers' self-selection into occupations takes a form that is consistent with the perceived comparative advantages in tasks by gender. However, while the substantial gender gap in the use of abstract tasks, controlling for human capital, is entirely accounted for by occupation, the higher propensity of women to engage in routine tasks persists after controlling for occupation. Such results highlight, on the one hand, the importance of investigating the distribution of tasks by gender by simultaneously controlling for both workers' and job characteristics. On the other hand, these results suggest that other mechanisms might also play a role when it comes to the allocation of tasks by gender, relating, for example, to hierarchical or power relations at work.

A comprehensive taxonomy of tasks

Two main gaps can be identified from a critical assessment of the body of literature reviewed above in brief. First, relying on a broad classification of tasks into very general categories, namely physical versus intellectual or interpersonal, as most of the studies do, might not be suitable for capturing interesting nuances (notably by gender). One could argue, for instance, that within manual jobs, a distinction between the various types of physical tasks, such as muscular power versus resilience or dexterity, is relevant to better understand how a wide set of tasks are distributed among workers and various forms of labour segregation (gender, age, ethnicity and class). Furthermore, as technology continues progressing and manual jobs represent a declining share of overall employment, comparative biological advantages in this area may continue to play a significant role in only a very limited number of occupations. Similarly, for intellectual and social tasks, there is great heterogeneity among the various categories, which should be taken into account for a better assessment of gender differences (for example, processing of codified information versus problem solving and serving versus managing versus caring).

Second, individual attributes may be insufficient to explain the disparity between men and women at the workplace, with the division of labour and tasks within the same organisation reflecting the social relations prevailing at the workplace and in society more generally. The production process is not a self-determined mix of inputs interacting in a black box, but rather is an organisation embodying power relations made explicit both through the hierarchical division of labour (Cetrulo et al, 2020) and mechanisms of control over the labour force (Burawoy, 1979; Dosi and Marengo, 2015).

In this context, the following analysis is built on the taxonomy of tasks developed by Eurofound (2016) and Fernández-Macías and Bisello (2021). The authors propose a comprehensive and detailed taxonomy of tasks, incorporating insights from other schools of thought and disciplines traditionally devoted to the analysis of tasks, in particular the labour process theory (Braverman, 1974), and insights from recent research on skills, work organisation and occupational change (Green, 2013; Cohen, 2016; Fernández-Macías and Hurley, 2017). Going beyond existing broad classifications, their taxonomy aims to connect the substantive content of work with its organisational context. This taxonomy is presented in Table 7.

As a first step, tasks can be classified based on two axes that are conceptually different: one that refers to the **contents** of tasks (column A in Table 7) and the other that refers to the **methods and tools** used at work (column B in Table 7). The first dimension looks at work from a material perspective, as a transformative activity upon an object, with tasks being discrete units of that work. The second dimension directly reflects the material properties of the work process (the type of object being transformed and the type of transformation operated upon it), the socially determined forms of work organisation and the technologies used in production.

In terms of the contents of tasks, at the highest level of generality there is first a threefold differentiation between physical tasks (working with objects), intellectual tasks (working with ideas or information) and social tasks (involving interaction with other people). Within each of these three high-level categories, there are additional nested classifications on the basis of the type of transformation and the skills typically required to perform them. In terms of work methods (or forms of work organisation), three main categories are established: autonomy, teamwork and routine. In terms of tools (or technologies used at work), a differentiation between mechanical and digital machinery is made. As in the case of task content, most of the upper-level branches of the taxonomy are further differentiated at different levels.

From the perspective of the content of work, such a detailed classification of physical, intellectual and social tasks is very useful for testing empirically the brawn versus brain hypothesis discussed in the previous section. Performing a job that involves providing care to someone is not the same as one requiring the managing of other colleagues, even though both activities can be classified as types of social interaction. An additional aspect to consider is that some professions in the service sector, and in particular those that are highly feminised, are exposed more than others to emotional demands (such as hiding feelings; handling angry clients, customers and patients; and dealing with situations that are emotionally disturbing) (Eurofound, 2020).

While most of the literature identifies only one generic ‘social interaction’ task dimension, the taxonomy differentiates between five subcategories, which provide a better understanding of the nature of work by gender. The same holds for physical tasks, which have often been classified in previous studies in one broad category (labelled as ‘manual’), while one can distinguish between fundamentally different activities requiring strength, dexterity and/or navigation (that is, moving in a three-dimensional space). The fact that intellectual tasks also have six different levels of classification (from task contents to the processing of technical textual information) has the potential to greatly enrich the analysis of tasks by gender.

Table 7: A taxonomy of tasks according to the content of work, methods and tools

A. Content of work	B. Methods and tools of work
1. **Physical tasks** aimed at the physical manipulation and transformation of material things a. Strength: lifting people and heavy loads, exercising strength b. Dexterity: precisely coordinated movements with hands or fingers c. Navigation: moving objects or oneself in unstructured or changing spaces	1. **Methods**: forms of work organisation used in performing tasks a. Autonomy I. Latitude: ability to decide working time, task order, methods and speed II. Control (in reverse): direct control by boss or clients, monitoring of work b. Teamwork: extent to which the worker has to collaborate and coordinate his or her actions with other workers c. Routine I. Repetitiveness: extent to which the worker has to repeat the same procedures II. Standardisation: extent to which work procedures and outputs are predefined and encoded in a formalised system III. Uncertainty (in reverse): extent to which the worker needs to respond to unforeseen situations
2. **Intellectual tasks** aimed at the manipulation and transformation of information and the active resolution of problems a. Information processing I. Visual and/or auditory processing of uncodified/unstructured information II. Processing of codified information 1. Literacy a. Business: reading or writing letters, memos, invoices, etc. b. Technical: reading or writing manuals, instructions, reports, forms, etc. c. Humanities: reading or writing articles or books 2. Numeracy a. Accounting: calculating prices, fractions, using calculators, etc. b. Analytic: preparing charts, using formulas or advanced maths b. Problem solving I. Information gathering and evaluation 1. Information searching and retrieval 2. Conceptualisation, learning and abstraction II. Creativity and resolution 1. Creativity 2. Planning/implementation	2. **Tools**: type of technology used at work a. Non-digital machinery (analogue) b. Digitally enabled machinery I. Autonomous (robots) II. Non-autonomous 1. Computing devices a. Basic ICT (generic office applications) b. Advanced ICT (programming, administration) c. Specialised ICT 2. Others
3. **Social tasks** whose primary aim is interaction with other people a. Serving/attending: responding directly to demands from the public or customers b. Teaching/training/coaching: imparting knowledge or instructing others c. Selling/influencing: inducing others to do or buy something, negotiating d. Managing/coordinating: coordinating or supervising the behaviour of colleagues e. Caring: providing for the welfare needs of others	

Source: *Fernández-Macías and Bisello (2021)*

Finally, the inclusion within the same framework of indicators capturing a variety of methods of work is also instrumental in studying the role played by authority and power relations in shaping gender disparities within the same job and occupation. The gender gap in autonomy (latitude and control), for instance, could be the result of discrimination at the workplace against women and not of different attributes between female and male workers. Previous studies have shown that a gender gap in workers' autonomy persists within jobs in European countries, regardless of individual attributes (Smith et al, 2008; Mühlau, 2011; Ficapal-Cusí et al, 2018). Job characteristics might also play an important role when it comes to the distribution of power, as previous evidence suggests that women have better chances of occupying positions of authority in male-dominated than in female-dominated occupations (Kraus and Yonay, 2000). Similar evidence was found by the European Commission's Joint Research Centre (European Commission–JCR, 2021), which showed that gender differences in authority are more pronounced in female-dominated jobs than in male-dominated jobs. A study by Yaish and Stier (2009) suggests that, beyond personal and employment characteristics, women's concentration in the public sector explains a substantial part of the cross-national variation in the gender gap in job authority.

Tasks analysis by gender concentration category

The following empirical analysis looks at differences in the distribution of tasks between jobs, classified in five distinct categories based on the level of gender concentration, building on the tasks taxonomy developed by Fernández-Macías and Bisello (2021). It aims to investigate if female-dominated jobs are systematically different from male-dominated or gender-mixed jobs in terms of task profiles.

The analysis relies on two data sources: the European tasks database and the EU-LFS 2019. The European database of task indices collects information on tasks performed across jobs in the EU.[10] The dataset was created by combining existing sources such as the European Working Conditions Survey (EWCS), the Italian Indagine Campionaria sulle Professioni and the Organisation for Economic Co-operation and Development's Survey of Adult Skills. In combining these three sources, and to keep a certain degree of consistency, the sample was restricted to the EU15 minus the UK, leading to the creation of task measures that primarily refer to western European countries. For more information on the construction of the European tasks database, see Bisello et al (2021). Employment data from the EU-LFS 2019 were used to weight task indicators at job level to reflect the European employment structure. To account for the different degrees of gender concentration between jobs, EU-LFS data were used to classify jobs into five different categories based on the shares of female and male workers, consistently with the analysis in Chapter 2.

The analysis presents and describes differences in the distribution of task profiles between job categories by gender concentration through the use of box plots. Box plots provide a visual summary of the distribution of task profiles by displaying the minimum score, first (lower) quartile, median, third (upper) quartile and maximum score. Therefore, box plots are a useful tool to identify mean values, the dispersion of the data and signs of skewness.

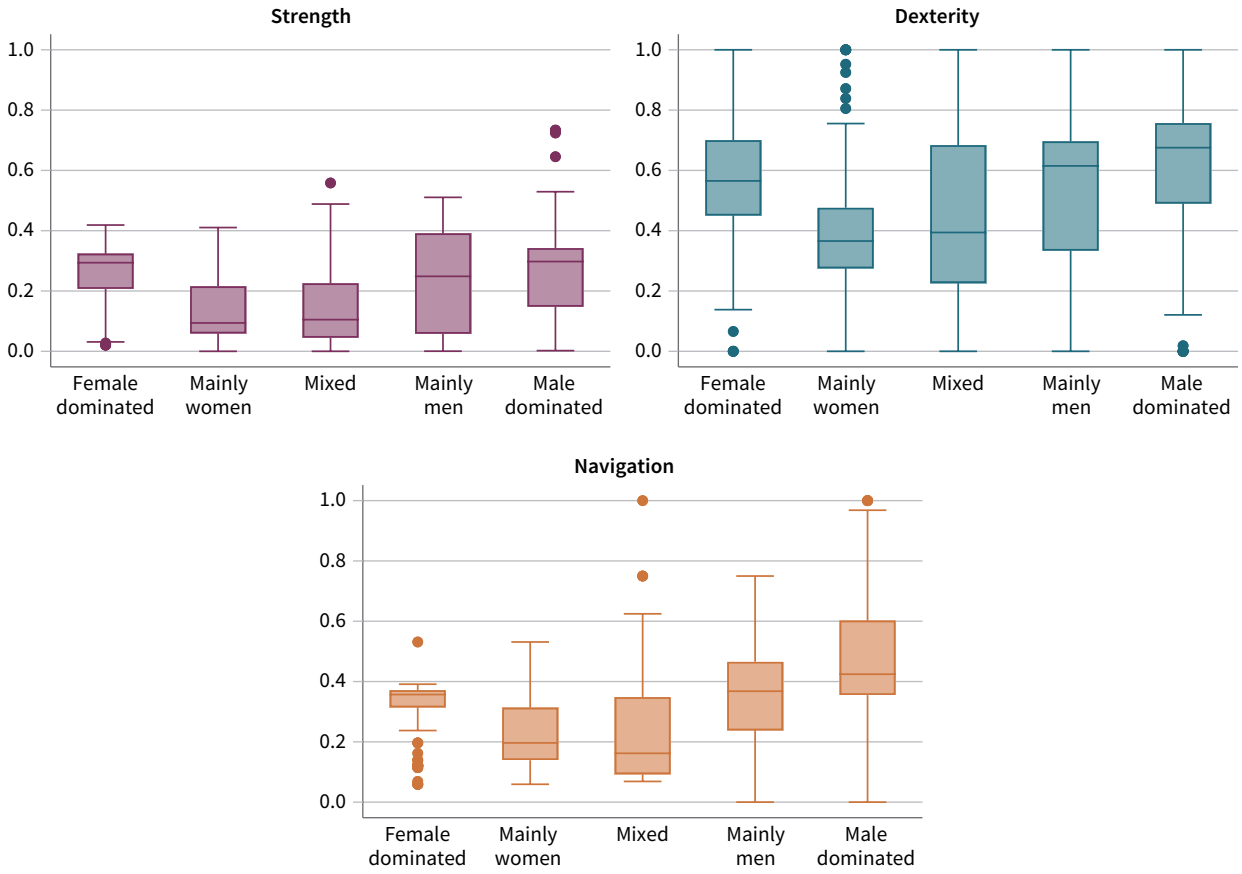
As Figure 22 shows, all three indicators[11] capturing physical task content display a U-shaped distribution across gendered job categories, with higher median scores at the extremes. In general, scores in male-dominated jobs and jobs mainly held by men are higher than in the equivalent jobs for women, especially in the case of navigation. Gender-mixed jobs show, on average, lower median scores than gender-dominated jobs, although their distribution is more dispersed in the case of physical dexterity.

Overall, while male workers tend to carry out more physical work activities than female workers, a closer inspection of physical task indicators reveals interesting findings on the heterogeneity across jobs. For instance, the indicator of physical strength captures three distinct types of activities, namely whether the job involves lifting or moving people, carrying or moving heavy loads, and/or tiring or painful positions. These are performed with different intensities across jobs that belong to extreme job segregation categories.

10 This database, which is publicly available at https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/comprehensive-european-database-tasks-indices-socio-economic-research, was jointly produced by Eurofound and the European Commission – Joint Research Centre and it accompanies the taxonomy presented in the previous section.

11 All indicators have been standardised into a 0–1 scale, with zero indicating the lowest intensity in the performance of a specific task.

Figure 22: Physical task indicators by gender concentration category



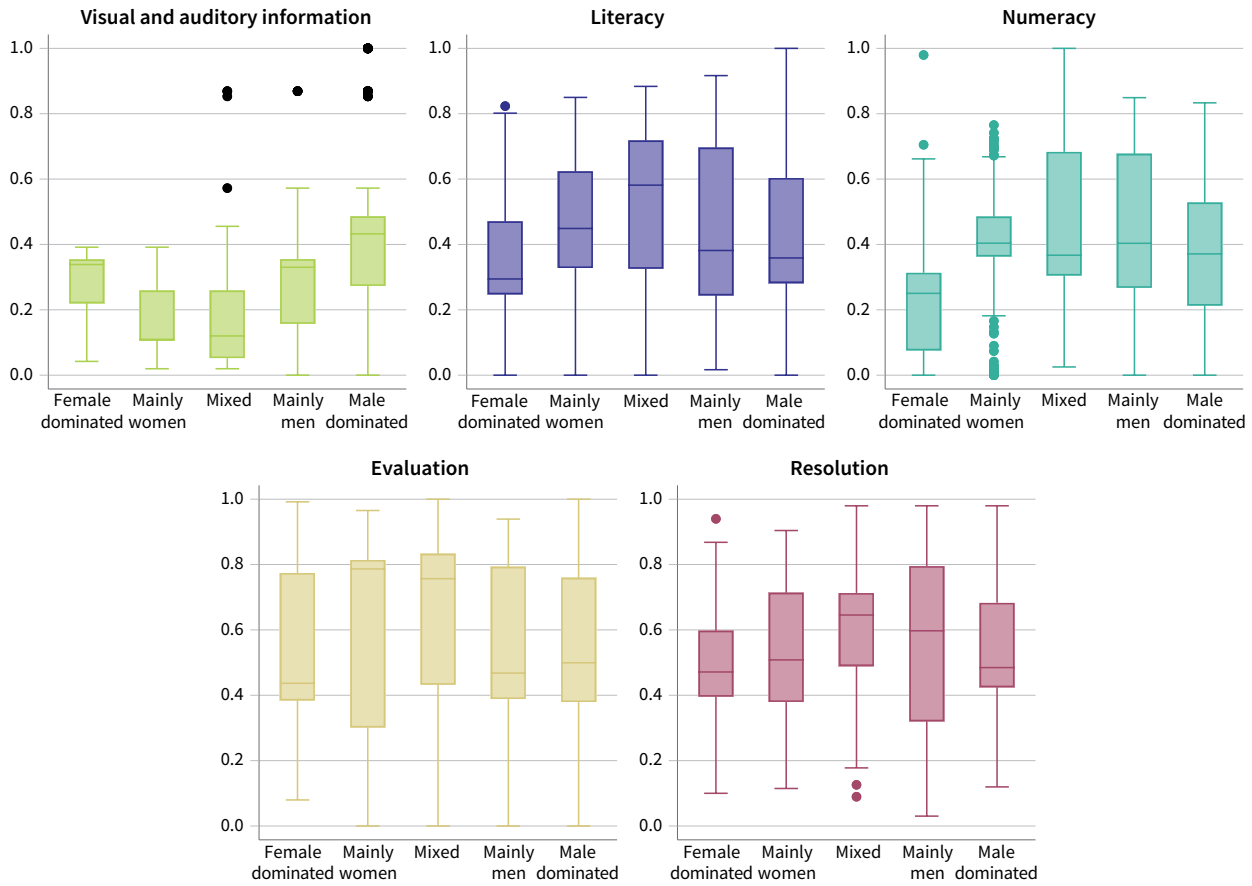
Source: *European tasks database (European Commission–JCR, 2021) and EU-LFS 2019 data (authors' elaboration)*

This clearly emerges, for instance, when comparing personal care workers (a female-dominated job), whose job requires lifting or moving patients very frequently, with building trade workers (the most relevant and concentrated male-dominated job), for whom the average score associated with lifting things is well above average (for details on the distribution of indicators at the ISCO-08 two-digit level, see Bisello et al, 2021).

As regards the indicator of intellectual tasks, the processing of uncodified information (visual and/or auditory tasks) displays a U-shaped distribution across gendered job categories, with higher median scores for the extreme categories of gender concentration (Figure 23), similar to the indicator of physical tasks (Figure 22).[12] On the other hand, an inverted U-shaped distribution is found for literacy and numeracy indicators, with female-dominated jobs characterised by the lowest intensity of both indicators. Literacy-related tasks are more often performed in gender-mixed jobs, while the same does not apply in the case of numeracy-related tasks. It is interesting to also note that gender-mixed jobs and jobs held mainly by men are quite dispersed, while female-dominated jobs and jobs held mainly by women display quite a concentrated distribution over the median. The index on information gathering and evaluation (which includes information searching and retrieval, as well as conceptualisation, learning and abstraction) is the most dispersed indicator among those of intellectual tasks, with the highest median scores for jobs held mainly by women and mixed jobs.

12 According to the original taxonomy of tasks developed by Fernández-Macías and Bisello (2021), the indicator for the processing of uncodified information (visual and/or auditory) belongs to the intellectual tasks domain. However, its empirical operationalisation (Bisello et al, 2021) highlights its strong correlation with physical tasks and its lower or negative association with the entire set of intellectual tasks. Therefore, the graphical representation includes a visual and auditory indicator within physical tasks, despite it belonging to another dimension conceptually.

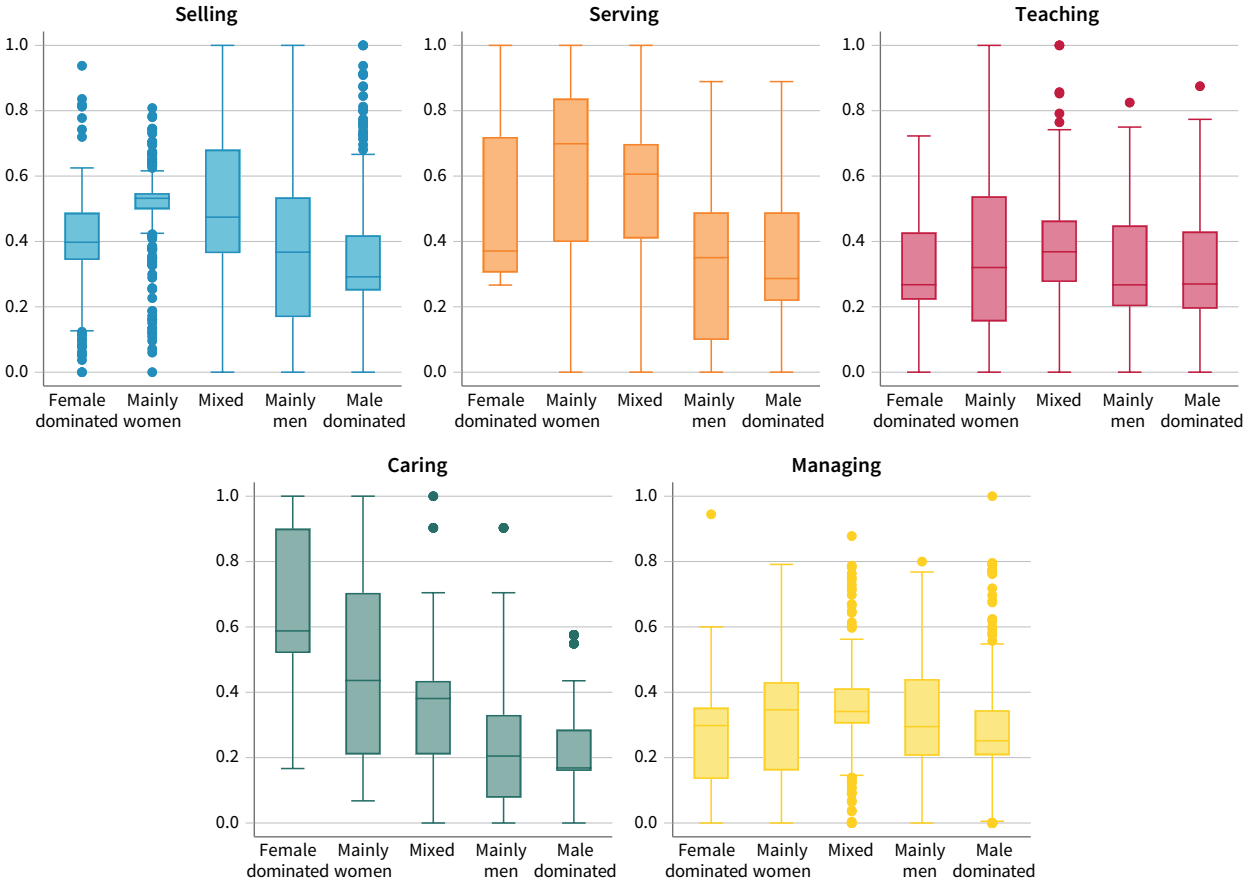
Figure 23: Intellectual task indicators by gender concentration category



Source: *European tasks database (European Commission–JCR, 2021) and EU-LFS 2019 data (authors' elaboration)*

The updated version of the European tasks database allows social tasks to be broken down into several indicators, each capturing a specific type of social interaction. The distribution across gender-dominated categories is reported in Figure 24. The first clear finding is the heterogeneity of task intensity across categories. For example, while teaching tasks are almost evenly distributed, caring activities are not and substantially decrease along the scale from female- to male-dominated jobs. Serving and attending activities as well as selling/influencing tasks show similar patterns to that of caring activities, although with differences in magnitude and the highest median value being for the category of jobs held mainly by women, rather than female-dominated jobs. Finally, differences across job categories for managing and coordination tasks are less pronounced, with slightly higher values for gender-mixed jobs than for gender-dominated jobs, and low dispersion within each category.

Figure 24: Social task indicators by gender concentration category



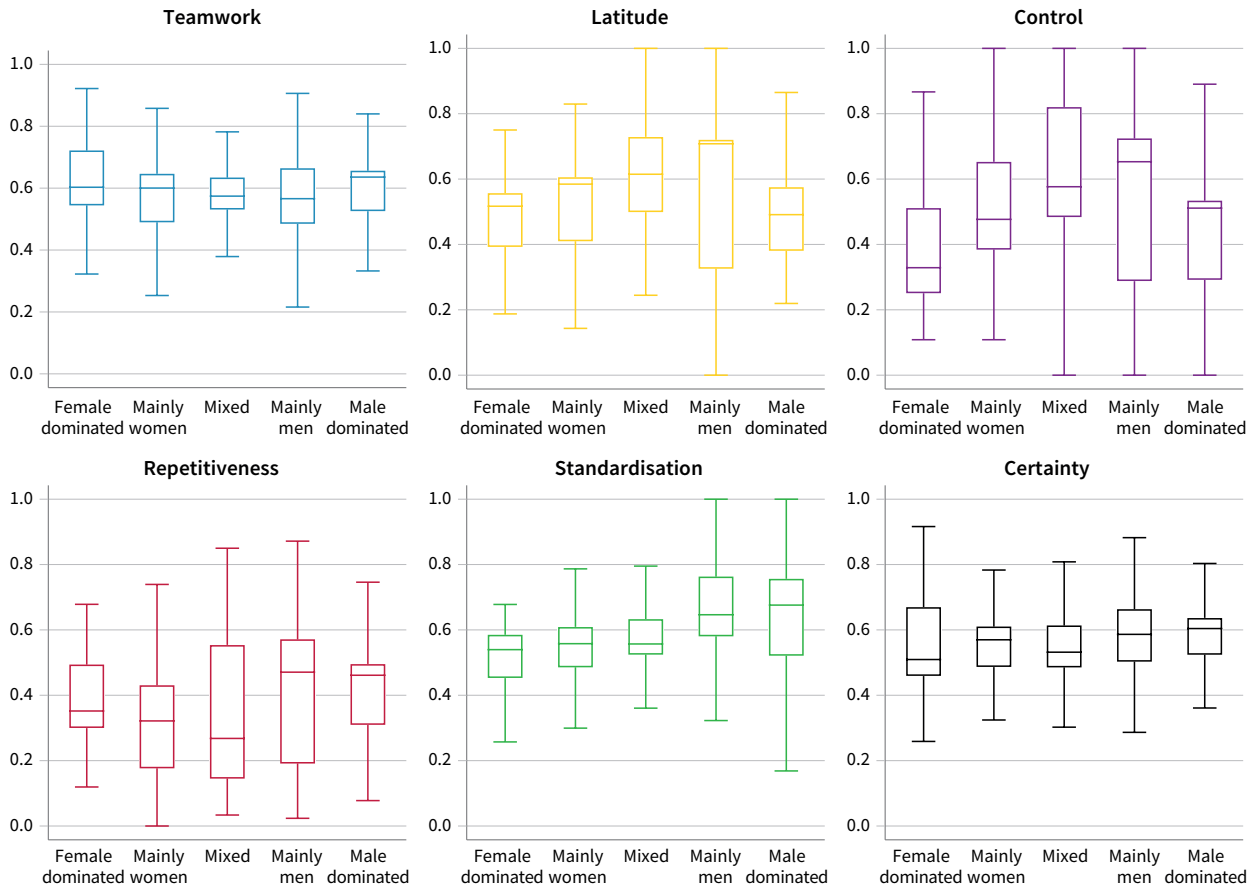
Source: *European tasks database (European Commission–JCR, 2021) and EU-LFS 2019 data (authors' elaboration)*

The second dimension of the task framework covers the methods of work, namely organisational practices and tools used at work. Figure 25 shows that, except for teamwork and unpredictability (uncertainty)[13] at work (that is, the third component of the routine index), there are substantial differences in the scores, conditional on the gender concentration category. The two elements capturing autonomy, namely latitude and autonomy from direct supervision (control), both show an inverted U-shaped distribution with the highest values in gender-mixed categories. While for latitude (the freedom to set working time and priorities), median scores are not so different between male-dominated and female-dominated jobs, the median value for autonomy from direct supervision (control) is much lower (around one-third lower) for female- than for male-dominated jobs. However, when looking at the lower and upper quartiles, differences between the two extreme categories are only marginal.

The distribution of the two indices on repetitiveness and standardisation seems to confirm a finding from Bisello et al (2021) that, while repetitive activities usually imply high levels of standardisation (as in the case of stationary plant and machine operators), the opposite is not necessarily true (for instance, for science and engineering associate professionals). Looking at Figure 25, it can be seen that both repetitiveness and standardisation are higher in jobs held mainly by men and male-dominated jobs, while gender-mixed jobs show relatively lower levels of repetitiveness but average scores in terms of standardisation.

13 This dimension measures the extent to which the worker needs to respond to unforeseen situations. It is defined in reverse, so that higher values measure lower uncertainty (and therefore more certainty and routine) at work.

Figure 25: Methods of work task indicators by gender concentration category



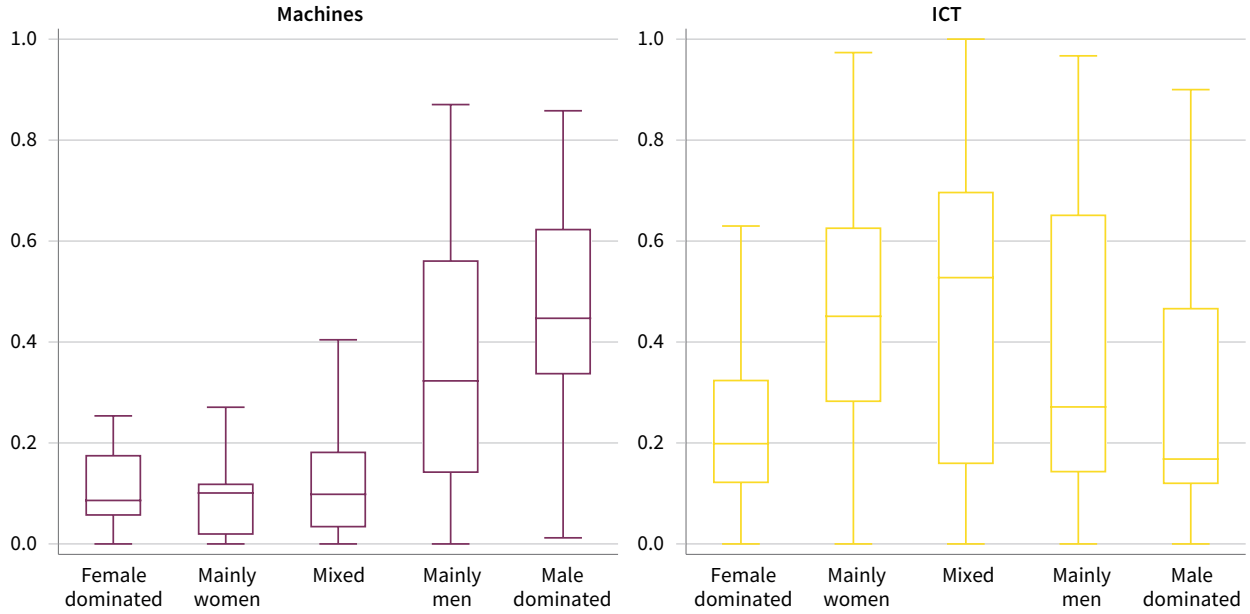
Source: *European tasks database (European Commission–JCR, 2021) and EU-LFS 2019 data (authors' elaboration)*

Finally, as can be seen in Figure 26, the use of non-digital machines mostly characterises the mainly male and male-dominated categories, for which median scores are more than double those for both of the female categories and for mixed jobs. Considering that non-digital machines are more often related to industrial manufacturing activities, this evidence is consistent with the expectation. The distribution of median scores for basic ICT tools has an inverted U shape, with the highest values in jobs held mainly by women and mixed jobs.

Overall, the evidence presented above seems to suggest that gender-mixed jobs are characterised by a task profile with high values of cognitive content (literacy and numeracy), high autonomy and high ICT use. These characteristics are, on average, positively associated with higher pay and better working conditions. Previous Eurofound work showed that occupations with the most balanced shares of men and women tend to have better job quality in most dimensions (Eurofound, 2020).

With the aim of complementing the previous descriptive analysis, Box 5 explores gender differences in task profiles, evaluating if and to what extent such differences still matter once individual and job characteristics are simultaneously controlled for, similarly to the work done by the European Commission–JCR (2021). The analysis also investigates if and to what extent gender matters in the distribution of tasks within gendered jobs, all other things being equal.

Figure 26: Tools used at work by gender concentration category



Source: *European tasks database (European Commission–JCR, 2021) and EU-LFS 2019 data (authors' elaboration)*

Box 5: Task profile by gender – Evidence from individual-level data

This box provides evidence on differences in task profile by gender, conditional on individual and job characteristics. Individual-level data from the EWCS 2015 are used, which are for the EU15 minus the UK for consistency with the descriptive analysis. The analysis clearly focuses on a more limited number of task indices, namely those available in the EWCS. For this section, job categories by gender segregation are also defined based on employment data from the EU-LFS 2019, separately for every country. In this analysis, indicators referring to methods of work are fully covered and comparable to a large extent with those used in the descriptive analysis presented in the previous section, as both are built using data from the EWCS only. Therefore, differences in the gender effect between the descriptive and multivariate analysis can be due to measurement issues, while each set of findings is per se fully consistent within the analysis.

Formally, the following equation is estimated for each task indicator as a dependent variable using a weighted ordinary least squares method:[14]

$$Task_i = \beta_0 + \beta_1 Gender_i + \delta_1 Category_k + \delta_2 Gender_i * Category_k + \theta_1 Tertiary_i + \theta_2 Gender_i * Tertiary_i + \theta_3 Age_i + \theta_4 Age_i * Gender + \varphi_1 Contract_i + \gamma_1 Job_i + \gamma_2 Country_i + u_i$$

where δ_2 is the main coefficient of interest, capturing the interaction between job gender category and the gender dummy. To control for individual and work characteristics, respectively, education and age as well as the contractual arrangement are included. Finally, job and country fixed effects are included in all specifications.

The analysis that follows compares women's and men's task profiles in terms of the content of work across the gendered job categories. More specifically, a graphical representation (Figure 27) plots the difference in task scores between female and male workers (and its confidence intervals at 95%) for each gendered category. From the analytical point of view, this captures the marginal effect associated with a change in the gender dummy within each job category, that is, how much more female workers perform a given task type than their male colleagues (which is assumed as the baseline) for that specific category. To give an example, the difference in the marginal effect for women compared with men for repetitiveness tasks in mainly male-dominated jobs is +0.08, corresponding to a coefficient for women of 0.49 set against the baseline coefficient for men of 0.41. The full set of estimation results is available on request from the authors.

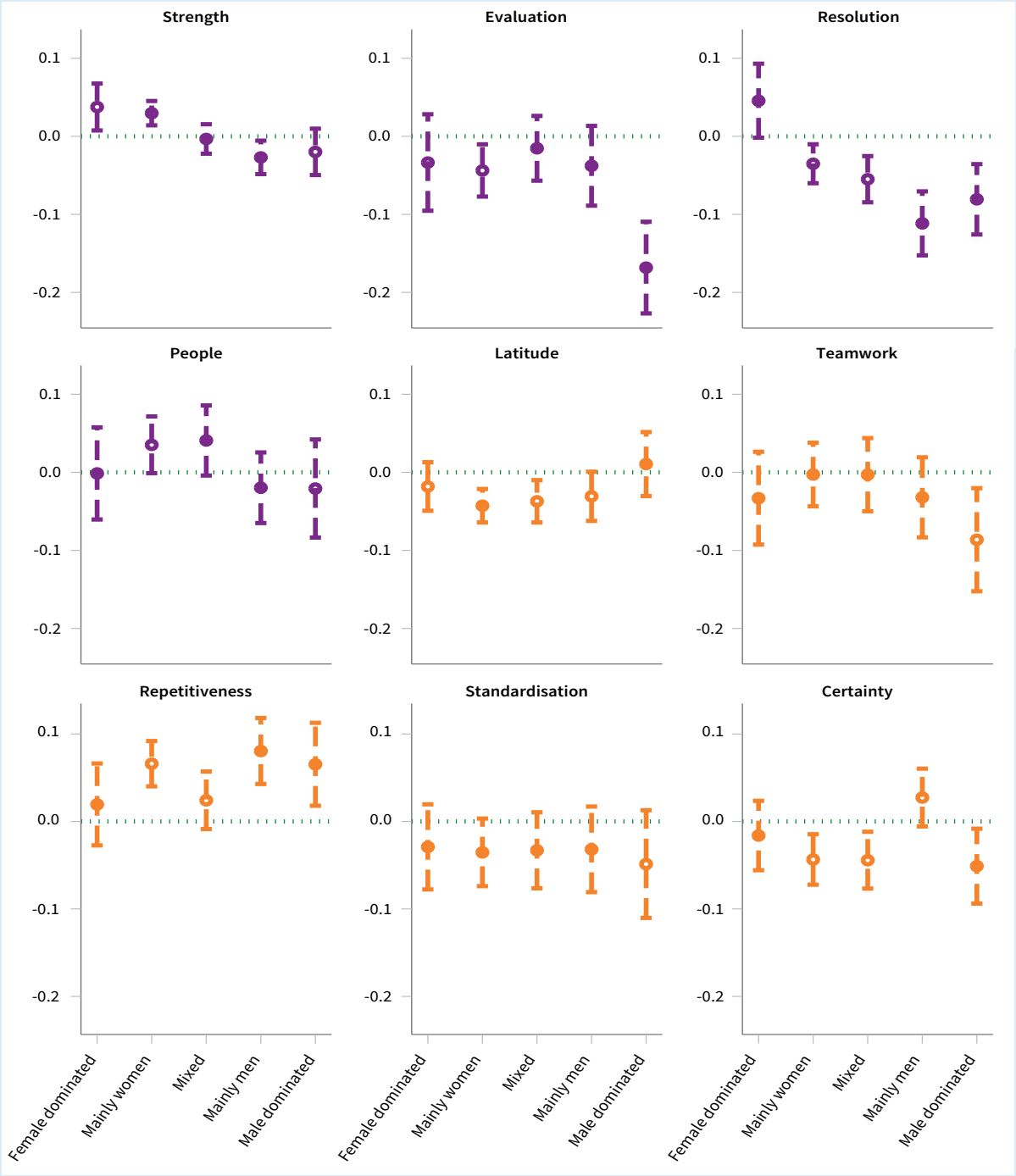
14 Individual weights within the working population apply to all regressions and specifications.

Task content

The intensity of physical strength tasks is significantly lower for women than men when working in a mixed job or a job held mainly by women, compared with working in a female-dominated job (regardless of the worker's gender and individual characteristics).

Looking at gender differences across job concentration categories, reported in Figure 27 (purple plots), it emerges that on average, women perform significantly more physical tasks (than men) in jobs held mainly by women and female-dominated jobs, while they perform less tasks of this kind in jobs held mainly by men. In other words, the evidence suggests that workers differing only in gender (but working in the same occupation within the same job category) are asked to perform a different level of physical tasks. In practice, this may happen when a male personal care worker is asked to perform routine medical examinations, helping patients with getting their

Figure 27: Marginal effects of gender for task content indicators in different gender job categories



Note: *Purple plots refer to indicators of the content of work, orange plots to indicators of methods of work.*
Source: *European tasks database (European Commission–JCR, 2021) and EU-LFS 2019 data (authors' elaboration)*

medication or doing their weekly shop, and only some of the activities involve physical strength such as handling patients (if the person is confined to bed or in a wheelchair) and support for walking. In contrast, women are involved in much more physical activities, including housekeeping. This interpretation is in line with additional findings that detail the gender differences for the three variables contributing to the physical strength indicator. Women perform more tiring and lifting activities than men in all but male-dominated jobs. Conversely, moving heavy loads is significantly lower for women in jobs held mainly by men and male-dominated jobs.

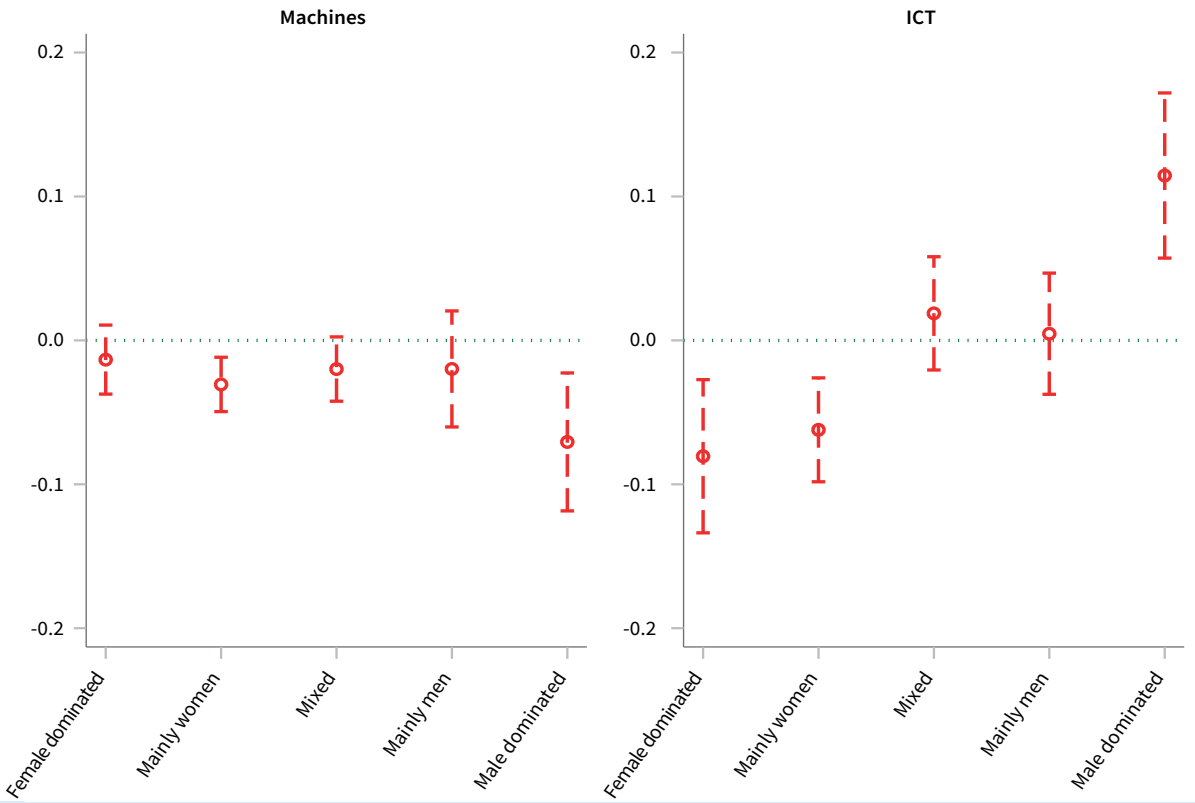
Interestingly, women tend to perform fewer complex intellectual tasks than their male colleagues, controlling for supply-side and structural characteristics. When working in male-dominated jobs, women tend to perform substantially fewer activities involving the evaluation of information (this is also true within female-dominated jobs but to a significantly lesser extent). Most common are gender differences in activities requiring creativity (resolution), which women tend to systematically perform less in all job categories apart from female-dominated ones. Tasks requiring creativity are also unevenly distributed in mixed jobs, suggesting that this form of problem-solving is a prerogative of men, regardless of the gender composition of jobs. Interesting and unexpected results emerge for social tasks involving interaction with other people, for which women show higher values only in jobs held mainly by women and mixed jobs. Overall, the findings suggest that gender concentration matters – the coefficient associated with gender categories is statistically significant – but being a woman matters within categories only in the case of jobs held mainly by women and mixed jobs.

Methods of work

As regards methods of work, on average women's tasks are subject to more repetitiveness than men's tasks, and this gap increases as the share of men increases at job level, although this is also true in jobs held mainly by women. However, women tend to face similar levels of predictability (certainty) only in jobs held mainly by men and strongly female-dominated jobs, while no significant differences emerge for standardisation, in line with the findings of the European Commission–JCR (2021). This finding also reveals that in a gender-balanced job the use of digital tools is more evenly distributed between men and women.

It is interesting to note that the results show that the effect on ICT use related to the interaction between gender and tertiary education is negative and significant (Figure 28). In other words, for a given level of education, on average women use ICT tools less than their male peers in the same job.

Figure 28: Marginal effect for gender on tools use at work in different gender categories



Note: *Red plots refer to indicators of tools of work.*
Source: *European tasks database (European Commission–JCR, 2021) and EU-LFS 2019 data (authors' elaboration)*

To summarise, the analysis shows that gender matters in understanding the different distributions of tasks both between and within jobs. It shows that jobs with different levels of gender concentrations do systematically differ in terms of task profile, highlighting in particular how gender-balanced jobs are characterised by a task profile with higher values of cognitive content, high autonomy and high ICT use. These characteristics are, on average, positively associated with higher pay and better working conditions. It also shows that women tend to perform fewer intellectual tasks and more repetitive tasks as the share of male workers in a job increases. However, no significant gender difference emerges in social tasks across job categories or in terms of standardisation. Finally, the findings show that, in some cases, there exists a gendered task distribution within the same job and gender concentration category. The fact that such results are robust to controlling for individual workers' characteristics suggests that supply-side explanations of gender differences in tasks performed within jobs might not be sufficient.

5 Gender pay gap and job structure

Female workers tend to earn less than their male counterparts. Gender pay gaps are a persistent reality in European and other labour markets, where data are available. In nearly all jobs, men earn more than women and these higher earnings relate only in part to observable characteristics typically associated with higher pay (such as longer job tenure, more work experience and higher educational attainment).

According to the relevant literature, some of the reasons behind the gender pay gap are:

- sectoral segregation, namely the overrepresentation of women in relatively low-paying sectors, which has been shown to account for around 30% of the gender pay gap in the EU (European Commission, 2018)
- working hours, as women spend fewer hours in paid work and also because part-time jobs, which are predominantly carried out by women, often pay less on a per hour basis
- the glass ceiling faced by women when accessing the top, and best-paid, positions in organisational hierarchies
- discrimination, namely when women earn less than men for doing exactly the same job, even though the right to equal pay for work of equal value is enshrined in the European treaties (Article 157 of the Treaty on the Functioning of the European Union)

It should be noted that the gender pay gap provides important but only partial information when calculated on the basis of the gross hourly pay rate: monthly working hours and the share of women and men in formal employment are other factors accentuating income disparities suffered by female employees (EIGE, 2019).

This chapter maps the extent of the gender pay gap for the EU27 as a whole, across countries and by different workforce characteristics and, especially, across different sectors, occupations and jobs. A decomposition analysis exploring the effect of different variables on the gender pay gap is also presented. The main added value of this analysis is the importance of the job variable (whereby a job is understood as a given occupation in a given sector, as defined in Eurofound's ongoing European Jobs Monitor project) in contributing to an understanding of the structural underpinnings of the gender pay gap, as well as the specific analysis of how the gap varies across the job–wage distribution.

The analysis carried out here is based on microdata from the SES in 2014, since the 2018 wave of the SES was not yet available at the time of writing. The SES is the best source of comparable microdata on wages across EU countries, as it is the only source that provides a measure of hourly wages, which explains why it is the source used by Eurostat for data on the gender pay gap. For more detailed information on the benefits and caveats of using the SES and the wage variable used in this analysis, see Box 6.

Box 6: The SES

The SES collects representative and harmonised data on wages at establishment level. It provides a variable on hourly wage with a great deal of detail. The measure of wages used in this analysis is obtained directly from the SES and refers to gross hourly earnings, which includes paid overtime and excludes non-regular payments. The hourly wage variable is converted to euro for non-euro area countries. This variable provides a very direct measure of wages, which can be directly compared among employees and is more appropriate to the present purposes than the information on annual labour income provided by the other source of EU-wide microdata, the European Union Statistics on Income and Living Conditions (EU-SILC).

The analysis focuses only on employees, and the gender pay gap is expressed as a percentage and calculated as follows:

$$\left(\frac{\text{average hourly earnings of men} - \text{average hourly earnings of women}}{\text{average hourly earnings of men}}\right) * 100$$

Nevertheless, the SES 2014 has some limitations that are important to highlight, mainly owing to limited coverage of some categories of EU workers.

- The sample is biased, as the smallest companies (those with fewer than 10 employees) are not covered in around half of the countries (they are only covered in Bulgaria, Cyprus, Estonia, Finland, Germany, Hungary, Latvia, Lithuania, Netherlands, Slovakia and Spain).
- Some sectors of the economy are not included: agriculture and households as employers are not covered in any country, while coverage of public administration is not mandatory and is, as a result, missing in some countries (Belgium, Luxembourg and Portugal).
- Microdata are made available to researchers for just 22 countries out of the EU27. Austria, Denmark, Finland, Greece and Ireland did not provide data in the 2014 wave.

These limitations restrict the capacity of the SES to represent the European working population in its entirety. Nevertheless, for the purposes of this analysis, the SES is preferred to the other source of EU microdata on income (EU-SILC).The advantages of the SES include the fact that it has more precise wage estimations, with detailed information on yearly, monthly and hourly wages; its data are provided from employer payroll records, which are likely to be more accurate than employee self-reported pay; it has large sample sizes; and it includes a whole range of other variables that are of interest to study pay (for instance, educational attainment, job tenure, age, contractual status and the collective bargaining presence at the workplace).

Context: Descriptive information on the gender pay gap

Despite the expectation that gender pay gaps would be notably reduced owing to both policy action and the growing entrance of highly educated women into the labour market, data show this reduction has not been as quick as might have been anticipated.

In Europe, the gender pay gap stood at 16% in 2014, according to the latest available microdata, which will be presented in this chapter. Updated data from Eurostat gave the estimated gender pay gap as 14.1% in 2019, a reduction of less than 2 percentage points over the previous eight years (Eurostat [sdg_05_20]).

In the US, the gender pay gap was estimated to be 16% in 2020 (Barroso and Brown, 2021). This gap has narrowed since 1980; the reduction was strongest in the period 1980–2005 and it has declined at a much lower rate since 2005. In the case of the US, racial inequalities play an important role: the race pay gap is higher than the gender pay gap and serves to compound pay disadvantages for black and especially Hispanic female workers (Patten, 2016).

The analysis provided in this chapter offers four main pieces of information based on SES 2014 microdata: an estimate of the gender pay gap for the EU as a whole across certain sociodemographic characteristics; the gender pay gaps across EU countries; the gender pay gaps across different sectors; and the gender pay gap at job level and across the different job–wage quintiles.

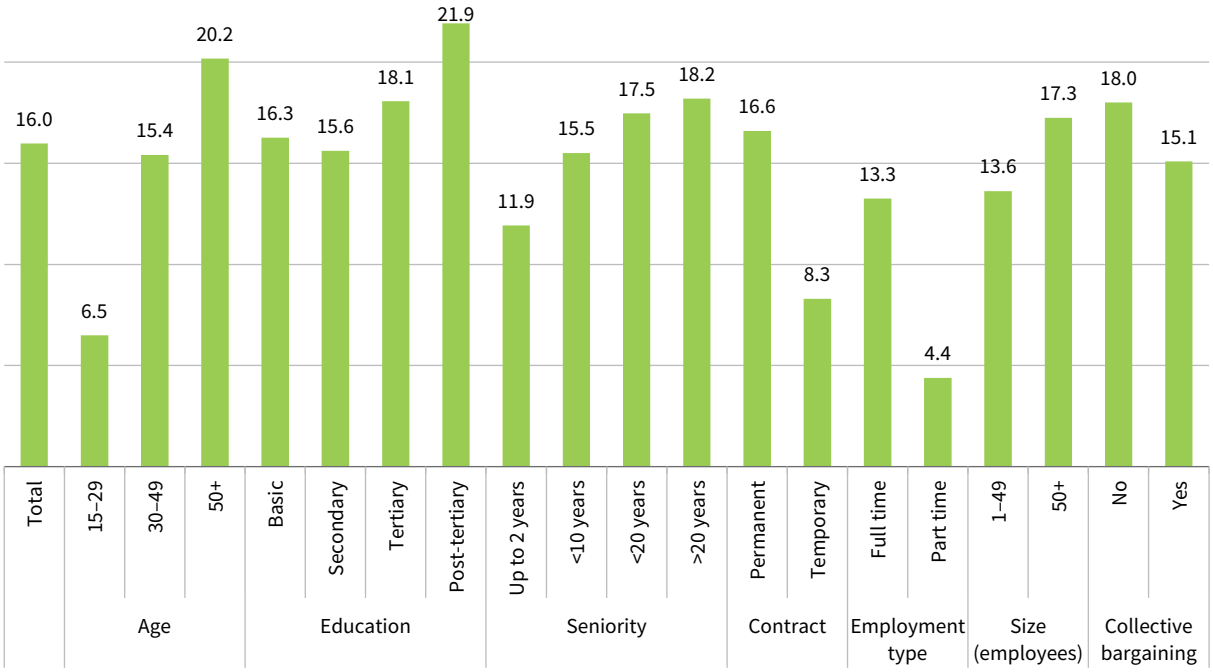
EU-wide gender pay gap

How large are the gender pay differentials for the EU as a whole? They stood at 16% in 2014, that is, wage levels among employed men were on average 16% higher than those among employed women (Figure 29).[15] When comparing only men and women meeting certain characteristics, the magnitude of the gender pay gap varies.

- Age: the gender pay gap increases with age, so it is narrowest among younger employees (6.5% among those aged 15 to 29) and largest among the oldest employees (more than 20% among those aged 50 and over).
- Education: the gender pay gap is largest among those having completed tertiary education and, mainly, post-tertiary education (22%).
- Job tenure: the gender pay gap increases with job tenure, being the largest among those having worked for more than 20 years in the same company (18%).
- Contract type: the gender pay gap among employees with permanent contracts is double that among employees with temporary contracts.
- Part-time work: the gender pay gap among employees working full time is triple that among those working part-time.
- Company size: the gender pay gap is wider in larger companies (those with more than 50 workers) than in smaller firms.
- Collective agreements: the gender pay gap is narrowest among employees working in firms covered by some type of collective pay agreement.

15 To calculate the EU-wide gender pay gap, the wage of each employee is divided by the mean hourly gross wage at national level. This provides a standard measure of the wage differentials between men and women that is comparable across countries and not affected by the relative wage levels of countries.

Figure 29 Gender pay gap in the EU, 2014 (%)



Source: *SES 2014*

These results provide two main insights into some of the potential drivers of the pay differentials between men and women. First, the gender pay gap is larger among those groups associated with higher wages and human capital levels (older, higher educated and longer job-tenured employees, under permanent contracts and working full time). This suggests that the gender pay gap grows as employees gain labour market experience and strengthen their labour market attachment, while female employees may be more likely to fall behind partly because of career breaks caused by family and care-related leave.[16]

The second insight is that being covered by a collective pay agreement (whether national, sectoral or negotiated at company level) has a mitigating effect on the magnitude of the gender pay gap. This has been highlighted in previous research, with this factor, for instance, suggested as a cause of the wider gender pay gap in the US – where union representation is weaker than in many EU countries (Blau and Kahn, 2007). There are some reasons that may explain this relationship between the coverage of collective pay agreements and lower gender pay gaps: women are more likely to be found at the lower end of the wage scale, so they would benefit from the higher wage floors sustained by collective bargaining; the gap between men and women in the coverage of collective bargaining agreements has reduced due to the declining coverage of collective bargaining in the private sector, which affects relatively more men in traditional blue-collar industrial jobs; and the increasing coverage of collective bargaining in the public sector, which affects relatively more women in the education, health and public administration sectors. This latter institutional development has contributed to reducing the magnitude of the gender pay gaps, as collective bargaining tends to be more present in the public sector, which is also more gender neutral: entry into the public sector is often open and competitive, and promotion processes and career paths tend to be more regulated, leaving less room for the effect of individual negotiation and differentiation, which may increase pay differentials between men and women.

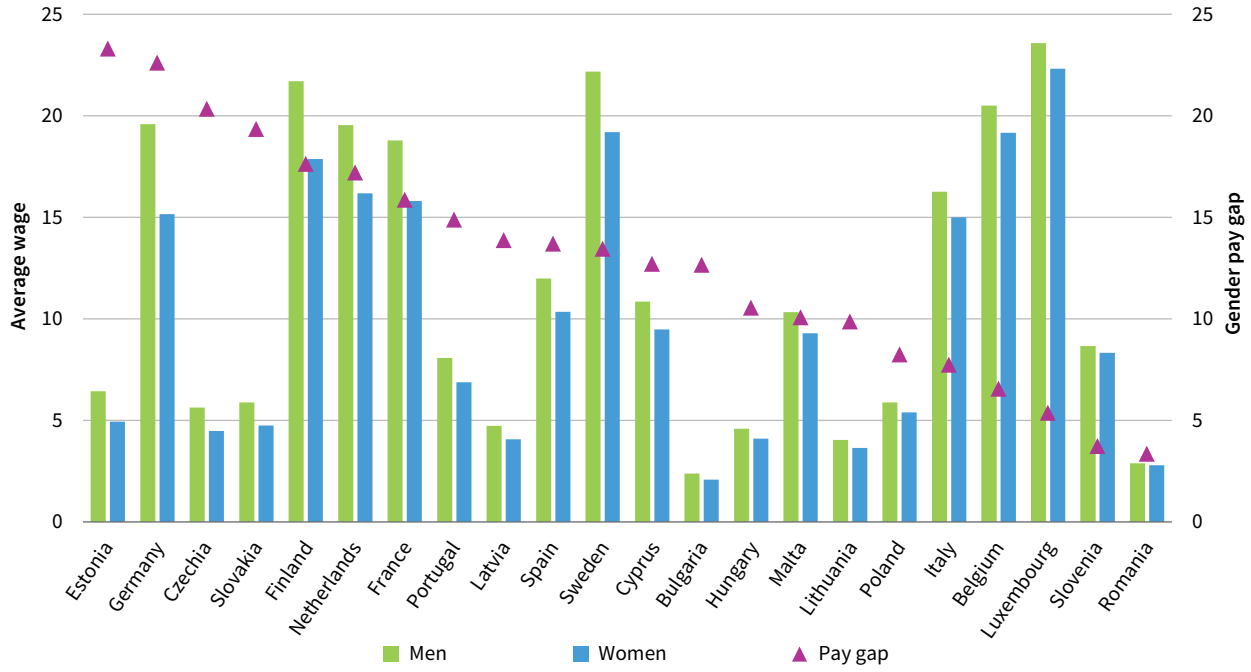
Gender pay gaps across European countries

What are the cross-country differences in the magnitude of the gender pay gap? Pay differentials between male and female employees vary greatly across EU countries, from above 20% in Estonia, Germany and Czechia (and just below 20% in Slovakia, Finland and the Netherlands), to less than 10% in Romania, Slovenia, Luxembourg, Belgium, Italy, Poland and Lithuania (Figure 30). [17]

16 A longitudinal analysis would be required to look into the trajectories of employees and determine if the gender pay gap widens over time as employees spend more time in employment, and if female employees start suffering a pay penalty as their careers experience more interruptions. However, such an analysis is not possible, first because SES data are of a cross-sectional nature and second because the SES does not include variables relating to labour market attachment over time, as distinct from tenure in current job.

17 Some discrepancies may emerge in some countries when comparing these gender pay gaps with those provided by Eurostat. The sample used here includes smaller companies in half of the countries and public administration in almost all of them (see Box 6), while Eurostat data typically exclude companies with fewer than 10 employees.

Figure 30: Gender pay gap (%) and average wage levels (euro/hour) across countries, 2014



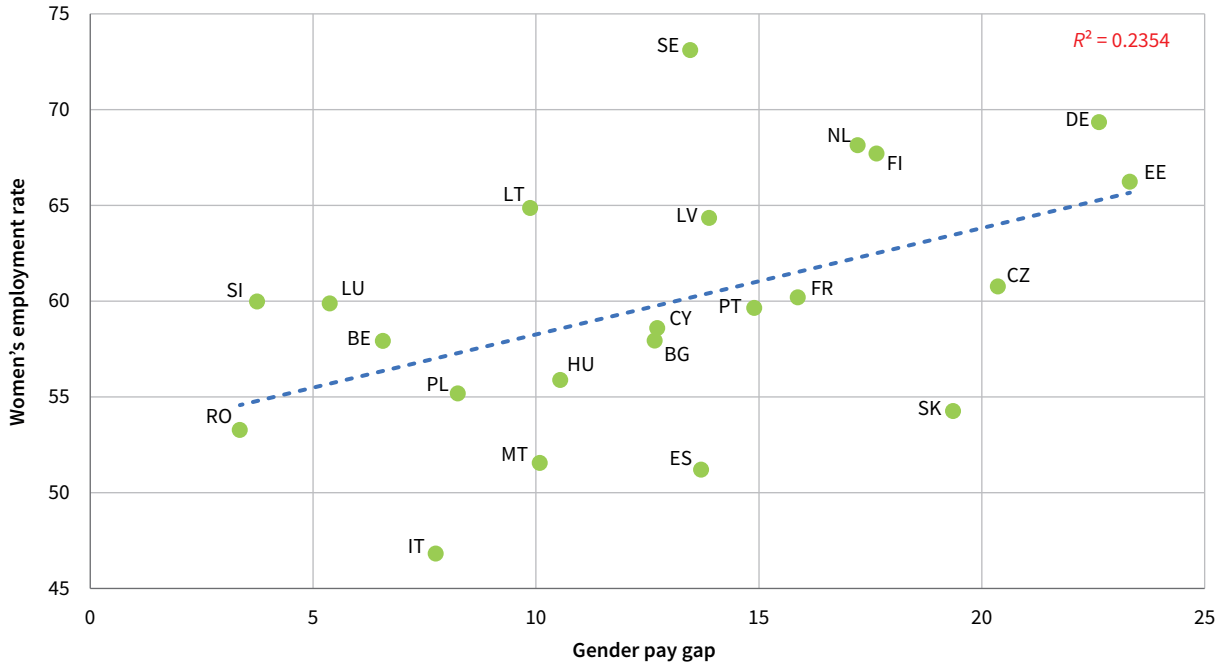
Note: *Countries are ranked (from left to right) by the magnitude of the gender pay gap (secondary axis). Data are for 22 Member States; data were not available for Austria, Denmark, Finland, Greece and Ireland.*
Source: *SES 2014*

An obvious regional country clustering does not emerge when analysing the extent of the gender pay gap, as new and old Member States and eastern and western European countries can be found in both extremes of the graph. Similarly, gender pay differentials do not seem to be related to average wage levels across countries.

There is, however, a positive correlation between the magnitude of the gender pay gap and women's presence in labour markets. The gender pay gap tends to be relatively wider in those countries where women have better employment participation outcomes, as measured by employment rates and employment shares (see Figures 31 and Figure 32, respectively).

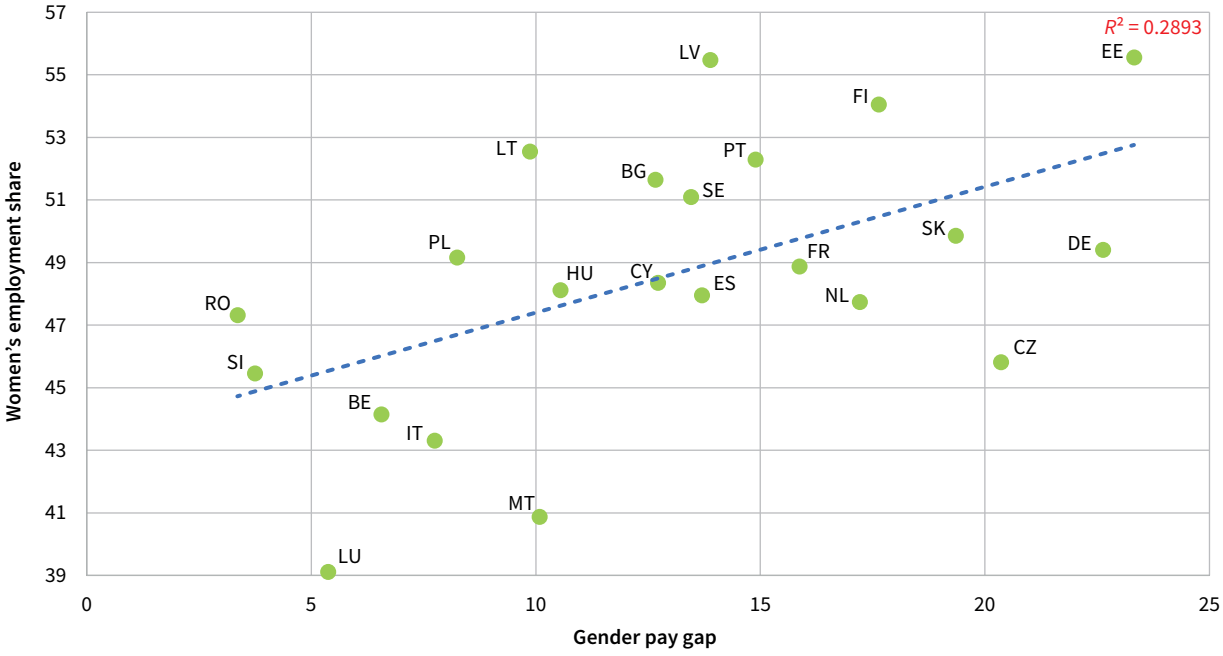
Although this can appear counterintuitive, the literature provides an explanation for this phenomenon (EIGE, 2018): in those labour markets where the participation of women is more limited (owing to the persistence of the gendered division of household caring responsibilities and limited employment opportunities, in particular for less qualified women), the women participating in paid work are more likely to be highly skilled and working in relatively highly paid jobs, which therefore contributes to reducing the gender pay gap in the aggregate.

Figure 31: Women's employment rates and gender pay gap across countries, 2014 (%)



Note: *Women's employment rate is the proportion of women working out of the total number of active women (aged 15 to 64 years). Data are for 22 Member States; data were not available for Austria, Denmark, Finland, Greece and Ireland.*
Source: *SES 2014 and EU-LFS for employment rates*

Figure 32: Women's employment shares and gender pay gap across countries, 2014 (%)



Note: *Women's employment share is the proportion of all employees who are women. Data are for 22 Member States; data were not available for Austria, Denmark, Finland, Greece and Ireland.*
Source: *SES 2014*

Gender pay gaps across sectors

Research has highlighted the importance of sector as a determinant of gender pay gaps (European Commission, 2018; Eurostat, 2018).

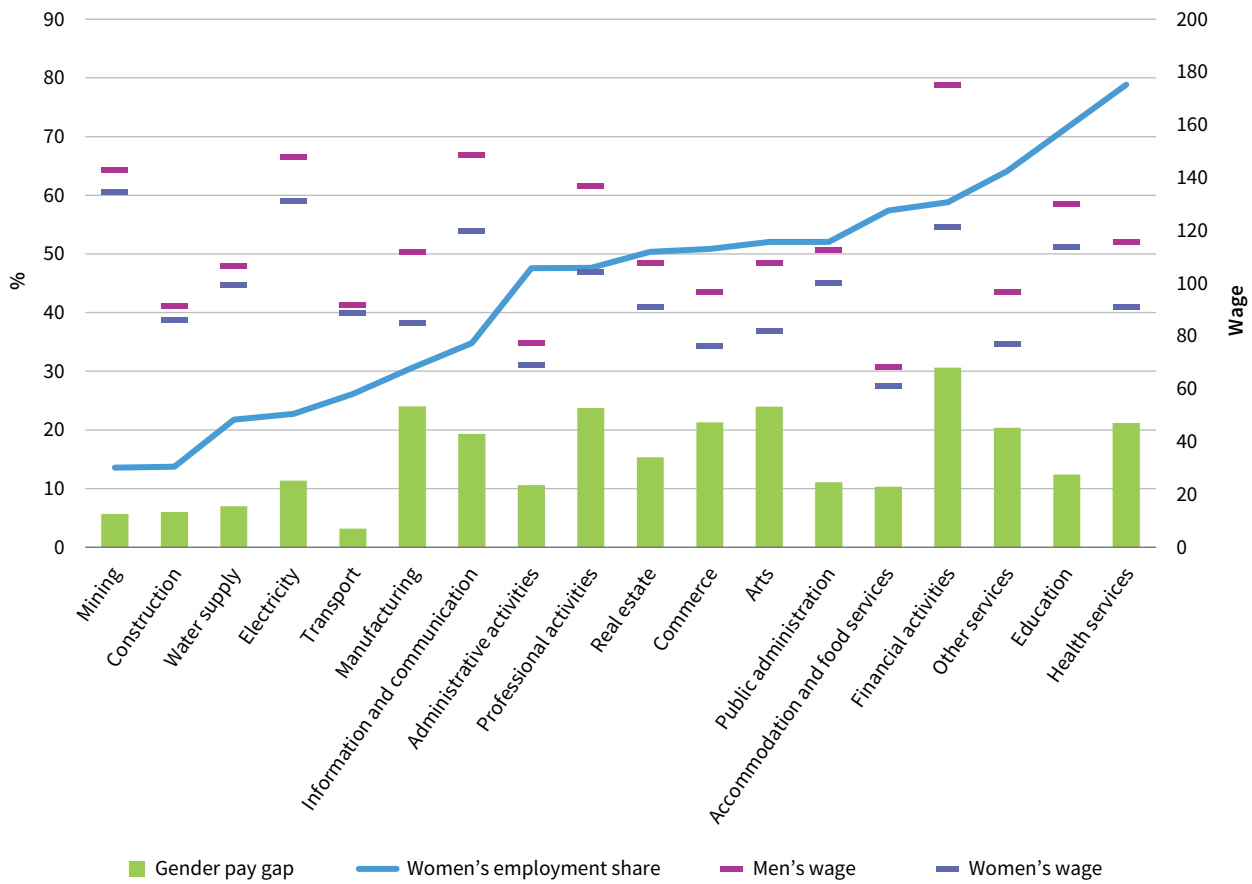
Is the gender pay gap very different across economic sectors? A first descriptive picture provided by Figure 33 shows that the magnitude of the gender pay gap varies notably across sectors: it is above 20% in several service sectors (finance, arts, professional activities, commerce and health) and in manufacturing, while it is below 10% in transport, mining, construction and water supply.

No strong relationship emerges between the magnitude of the gender pay gap and average wage levels across economic sectors: gender pay differentials are somewhat larger in some sectors characterised by relatively high wages (finance, as well as information and communication), but this is also the case in other sectors characterised by lower average wages (commerce and other services). The fact that women's employment shares are expanding in some sectors with above-average wage levels (such as finance, electricity, education and public administration) should tend to reduce gender pay gaps.

Figure 33 reveals a positive relationship between the magnitude of the gender pay gap and women's employment shares across the different sectors. This association is mainly explained by the modest gender pay gaps existing in the most male-dominated industries: mining, construction, water supply, electricity and transportation (see the left-hand side of the figure, as economic sectors have been ranked from lowest to highest share of female employees). Conversely, the gender pay gap is relatively large in some sectors with a notable presence of women (health, finance and other services).

What could explain this positive association between the gender pay gap and women's employment shares across economic sectors? It seems the rather narrow gender pay gap in very male-dominated sectors is partially due to men and women not doing the same jobs within these sectors: in sectors such as construction and manufacturing, for example, women are more likely to do office-based or administrative work, while men are more likely to be engaged in more manual labour. Conversely, when women and men are compared in sectors doing more similar jobs, as occurs in those sectors characterised by a higher female

Figure 33: Gender pay gap (%), women's employment share (%) and men's and women's wage levels (ratio, see note) by sector in the EU, 2014



Note: *Wage levels (secondary axis) are expressed as a ratio, dividing the wage of each employee by the mean hourly gross wage at national level, so that a value of 100 would equal the average wage across countries*
Source: *SES 2014*

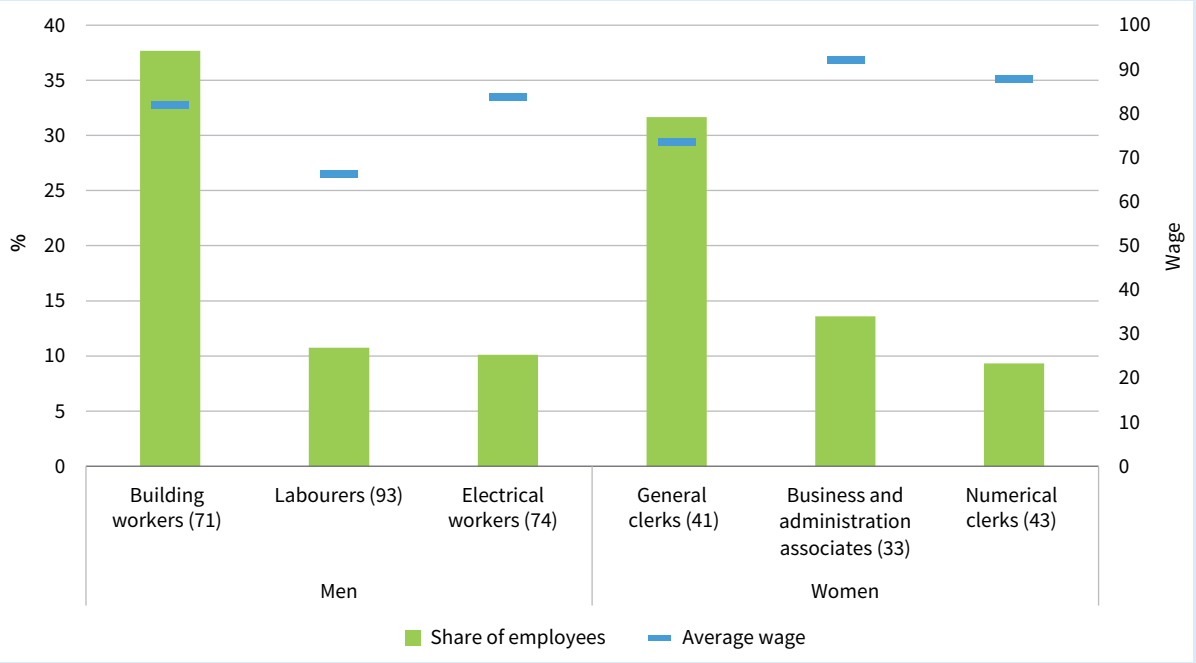
presence, the resulting gender pay gap is larger. Box 7 confirms this thesis by looking at two sectors and comparing the main occupational categories by gender, showing how men and women work in very different occupations in the very male-dominated construction sector and in more similar occupations in the more gender-mixed financial sector.

Box 7: Distribution of occupations by gender in two sectors

A detailed picture is provided here of the main jobs performed by male and female employees (as captured by occupational categories) in the construction and financial sectors. It shows that female and male employees do different jobs in the former and rather similar jobs in the latter.

The construction sector is an example of a very male-dominated sector characterised by a narrow gender pay gap. Figure 34 shows that these modest gender pay differentials could be largely explained by men and women carrying out different sets of jobs: more than half of men work in the blue-collar activities more typical of this sector (building workers, labourers and electrical workers), while more than half of the women working in construction do so in more white-collar occupations (general clerks, business and administration associates, and numerical clerks). Female employees working in these three occupational categories receive, on average, higher wages (especially among business and administration associates and numerical clerks) than male employees do in their main occupations, which helps explain the modest gender aggregate pay gap in the construction sector as a whole.

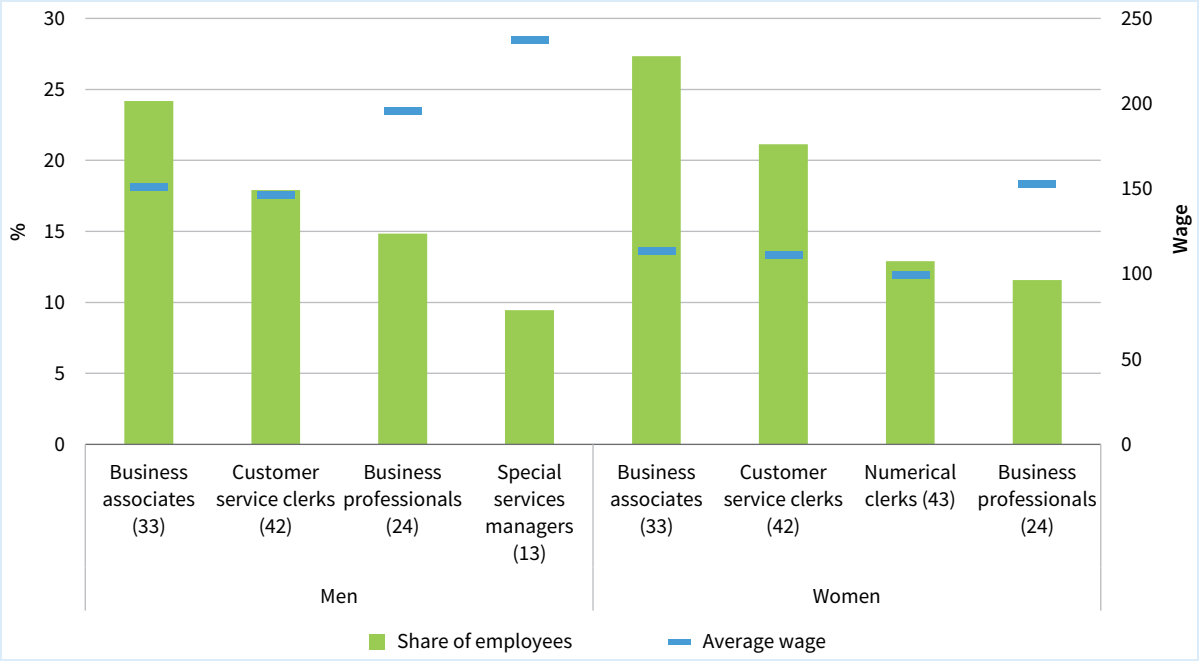
Figure 34: Share of employees (%) and wage levels (ratio, see note) in the EU by gender in selected occupations in the construction sector, 2014



Notes: *These are the three largest employing occupations for men and women in this sector. Wage levels (secondary axis) are expressed as a ratio, dividing the wage of each employee by the mean hourly gross wage at national level, so that a value of 100 would equal the average wage across countries.*
Source: *SES 2014*

Conversely, the financial sector is an example of a sector with a more balanced participation of men and women but characterised by a large gender pay gap. Figure 35 shows that, paradoxically, this could be due to men and women working in more similar jobs. A majority of both men and women (above two-thirds in both cases) work in the same occupational categories in the financial services sector, but men tend to receive significantly higher wages (especially production and specialised services managers), contributing to the large gender pay gap recorded in this sector. A significant gender pay gap emerges within the same occupational categories, which reflects the segregation of women into the lower-paying jobs within those occupations.

Figure 35: Share of employees (%) and wage levels (ratio, see note) in the EU by gender in selected occupations in the financial sector, 2014



Notes: *These are the four largest employing occupations for men and women in this sector. Wage levels (secondary axis) are expressed as a ratio, dividing the wage of each employee by the mean hourly gross wage at national level, so that a value of 100 would equal the average wage across countries.*
Source: *SES 2014*

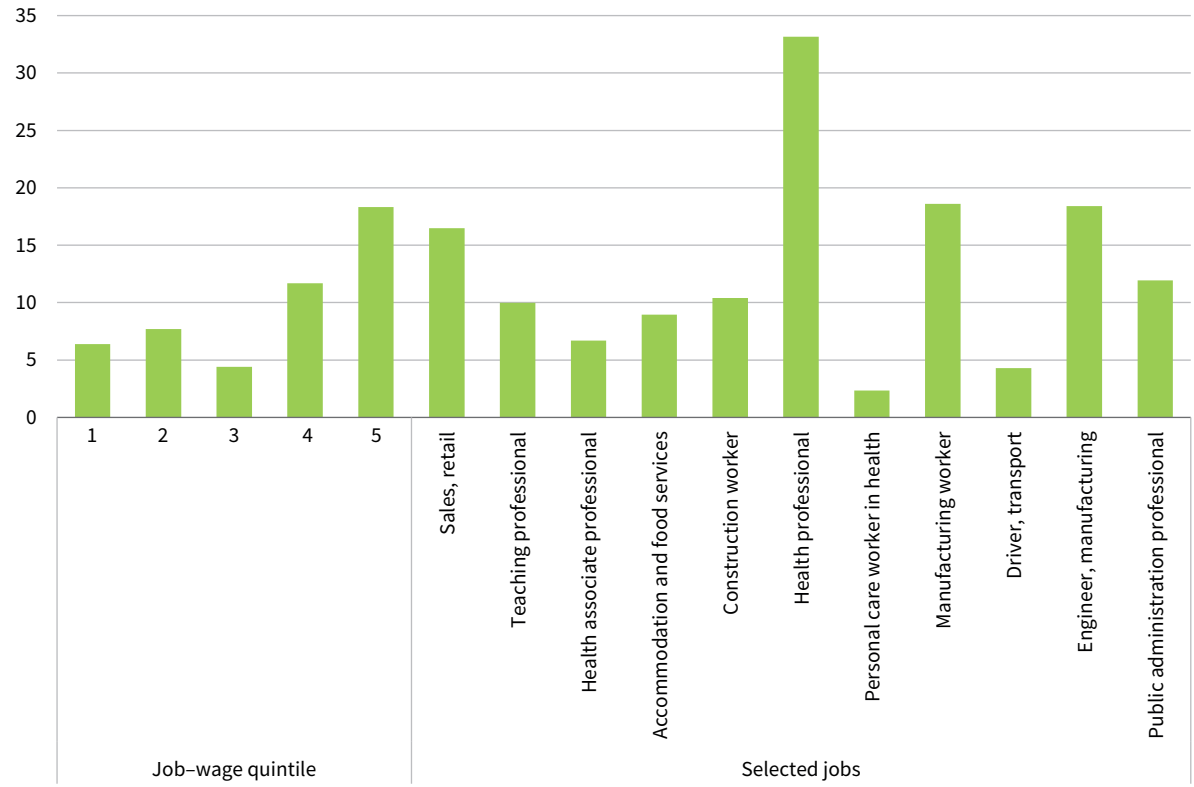
Gender pay gaps at job level

Using the 'job' level analysis used in Eurofound's European Jobs Monitor (where a job is defined as a given occupation in a given sector) allows a different view to be gained of the gender pay gap, combining the economic sector and occupational category. The gender pay gap was calculated in each job and then aggregated for the EU as a whole and across different job characteristics (see Figure 36).

- If jobs are split into job–wage quintiles (depending on the average pay levels associated with the job), the magnitude of the gender pay gap increases as the average wage level of the job increases (with the exception of the third quintile). It is worth highlighting that the gender pay gap becomes much larger among the top job–wage quintiles. Women are much less likely to occupy positions in the top-paid jobs, and these data show that, even when they do, female employees face a large wage penalty in these high-paying positions. This does not only occur for the EU as a whole, but across all EU countries, as shown in Figure A1 in the annex.
- A gender pay gap exists across all of the selected jobs presented here, representing some of the highest employing jobs in Europe. Nevertheless, its magnitude varies significantly. The gap is largest in jobs in both services (health professionals and salespersons in retail) and manufacturing (engineering associate professionals and metal and machinery trade workers in manufacturing) and is narrower among drivers in transportation and storage activities and among sector-related jobs such as personal care workers in health services, health associate professionals, and personal service workers in accommodation and food services.[18]

18 The health professional occupational category is problematic when estimating gender pay gaps as the 2-digit category includes some high paying gender mixed professions (medical consultants) as well as lower-paying female-dominated professions (mid-wives). Treating these distinctive professions as if they were one professional category leads to over-estimations of the gender pay gap.

Figure 36: Gender pay gap at job level in the EU (%)



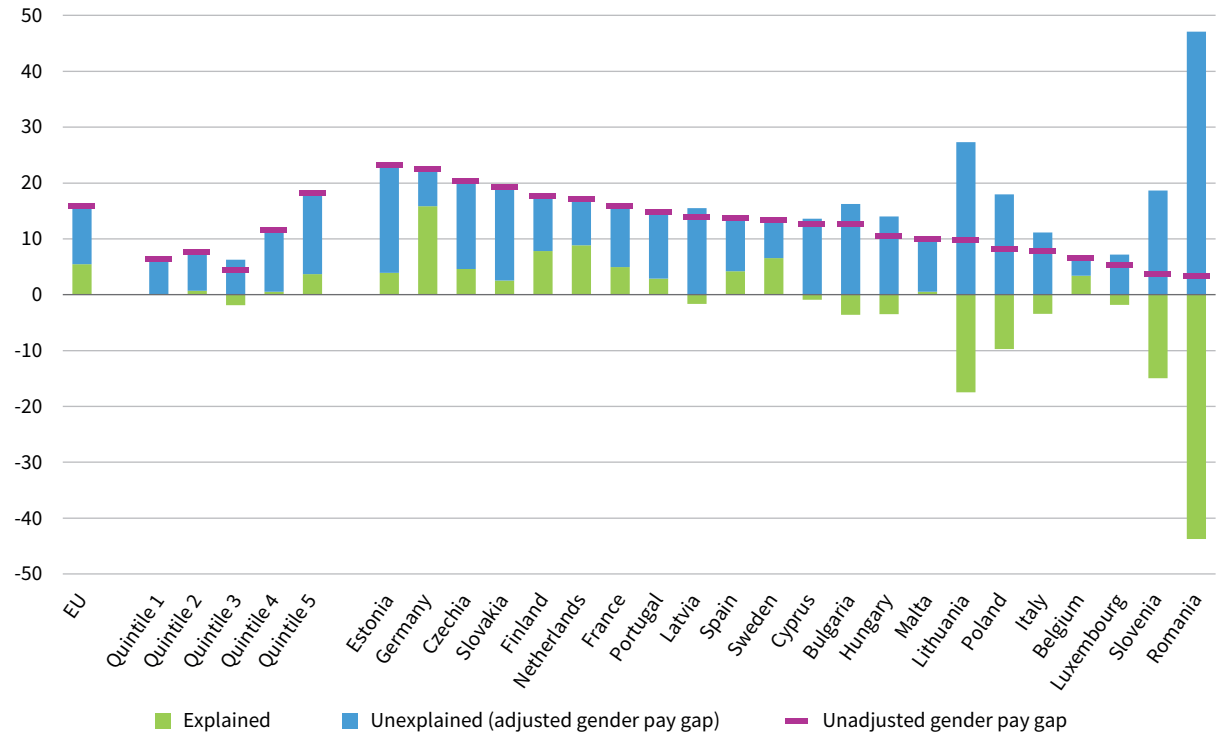
Source: *SES 2014*

Decomposition of the gender pay gap

Following the mapping of the gender pay gap in a descriptive way (the so-called unadjusted gender pay gap), a natural next step is to provide estimates for the pay differentials between men and women when several factors influencing pay determination are taken into account (the so-called adjusted gender pay gap). Such factors include the possible different characteristics between male and female employees, which could explain to a certain extent their pay differentials, for instance differences in educational levels, job tenure, sector and occupation. The underlying idea is that, once these factors are accounted for, the remaining pay differentials between male and female employees would be lower and attributable to the influence of gender (although there may be other unobservable variables that cannot be captured in this model).

The Blinder–Oaxaca decomposition is typically used to analyse the gender pay gap for two reasons: first, it allows a direct decomposition to be undertaken of the unadjusted gender pay gap, namely into an explained and an unexplained part and, second, it allows the individual contribution to be measured of each of the different variables introduced in the model to the explained part of the gender pay gap. In the analysis conducted here, the explanatory variables used in the model to explain the gender pay gap are educational attainment level, age, job tenure, working hours (full or part time), type of contract, firm size, firm's type of ownership, coverage of collective pay bargaining and job (a combination of the sector and occupation in which the employee works).

Figure 37: Blinder–Oaxaca decomposition of the gender pay gap: explained and unexplained, 2014



Note: *The size of the estimate effects is very large in Romania (and Lithuania to a lower extent), so results must be interpreted with care. Data are for 22 Member States; data were not available for Austria, Denmark, Finland, Greece and Ireland.*
Source: *SES 2014*

Figure 37 shows a first decomposition of the unadjusted gender pay gaps (presented earlier in Figures 29 and 30) into an explained and an unexplained part.[19] For the EU as a whole, the unadjusted gender pay gap (16%) can be decomposed into two subcomponents: slightly above one-third (5.5 percentage points) is explained by the different variables controlled for in the model and slightly below two-thirds (10.5 percentage points) remain unexplained and constitute the so-called adjusted gender pay gap, that is, the pay differentials existing between male and female employees that cannot be explained by their different characteristics as measured by the variables introduced in the model.

Cross-country results diverge. On the one hand, there are 12 countries where explanatory variables are able to explain, to a certain extent, the gender pay gap, which means the differences in average characteristics between male and female workers are in favour of men, in the sense that they are associated with higher wages. This is very notably the case in the EU15 countries (minus the UK): the explained part is positive and represents around a third of the gender pay gap in France and Spain, around half in Belgium, Finland, the Netherlands and Sweden, and almost 70% in Germany.

On the other hand, there are 10 countries where the explained part is negative, which means female employees in these countries have average characteristics more associated with higher wages than men, so that, in fact, the real wage penalty they suffer for being women is larger than the actual penalty measured by the descriptive data. These 10 countries are all new Member States (plus Italy and Luxembourg) and the negative explained part is especially large in Lithuania, Poland, Romania and Slovenia.

Another advantage of the Blinder–Oaxaca decomposition analysis is that it measures the individual contribution of each of the variables of the model to explain the gender pay gap. Table A1 in the annex provides a full picture of the Blinder–Oaxaca decomposition results for the EU and across all EU countries, where the sum of the overall explained part (positive or negative) and the unexplained part is 100%. A shorter version of these results is presented in Figure 38 for the EU as a whole and the five largest European countries, only depicting the contribution of each variable to the overall explained part of the gender pay gap, so that the sum of each of their contributions (positive or negative) equals the overall explained part

19 The explained and unexplained shares (for instance, for the EU as a whole, 34.2% and 65.8%, respectively) are applied to decompose the descriptive (or unadjusted) gender pay gap presented at the beginning of this chapter.

(for instance, 34.1% for the EU as a whole). The results can be summarised in the following main points.

- For the EU as a whole, the **job variable** and, to a lower extent, **working time** emerge as the most important factors explaining the gender pay gap.[20] The positive contribution of these variables to explaining the gender pay gap means the average characteristics of male employees are more related to higher wages, that is, female employees are more likely to be segregated in lower paying jobs and in part-time work. Cross-country results confirm the importance of the job variable (although it has a negative contribution in five countries, such as Italy and Poland) and working time (although the effect is clearly stronger in some EU15 countries such as France, Germany and Spain) to explain the gender pay gap.
- **Educational attainment** and, to a lower extent, **type of ownership** and **firm size** have a negative contribution to explaining the gender pay gap, which means the average characteristics of female employees are more related to higher wages in this case. Namely, women would be more likely to have higher educational attainment levels, to work in publicly owned establishments and to work in larger firms, which would be expected to translate into higher earnings, that is, existing gender pay gaps would be even larger if men and women were alike in these respects. Cross-country results point in the same direction: the negative contribution of education is widespread (with the only exceptions being Belgium and Germany), although it is much stronger in eastern European countries (such as Poland); the more moderate negative contribution of the other two variables is due to women being more likely to work in the public sector and in larger firms in around two-thirds of the EU countries.
- There are other variables that play a rather negligible role in explaining the gender pay gap for the EU as a whole. Among those having a positive contribution, type of contract has a very small contribution, while results are very mixed across countries in the cases of job tenure and coverage of collective pay agreements. On the other hand, age has a negative contribution to explaining the gender pay gap but it is small, and cross-country results are very mixed. Overall, this means women tend to have shorter job tenures, are more likely to hold temporary contracts, are less likely to work in companies covered by collective pay agreements and are more likely to be older, but the strength of these associations is generally very weak and plays no significant role in explaining the gender pay gap, at least for the EU as a whole.
- Some insights different from those mentioned for the EU as a whole emerge when the analysis is conducted across different job–wage quintiles (see Table A1 in the annex: women in the lowest paying jobs are more likely to have lower educational attainment than their male counterparts (as reflected by the positive coefficient of the education variable in wage quintile 1); female employees are generally older among the low-paying quintiles (reflected by the negative coefficients of job–wage quintiles 1 and 2), but are generally younger in the best-paid jobs (reflected by the positive coefficients of job–wage quintiles 3 to 5); female employees generally have longer job tenure than men among the lowest paying jobs; the effect of working time in explaining the gender pay gap (women are more likely to work part time than men) is strongest among the lowest paying jobs; women are less likely to hold temporary contracts than men among the lowest paying jobs; and women are more likely to work in establishments covered by collective agreements than men in the lowest paying jobs, probably reflecting the fact they are relatively more affected by wage floors set around low-pay levels.

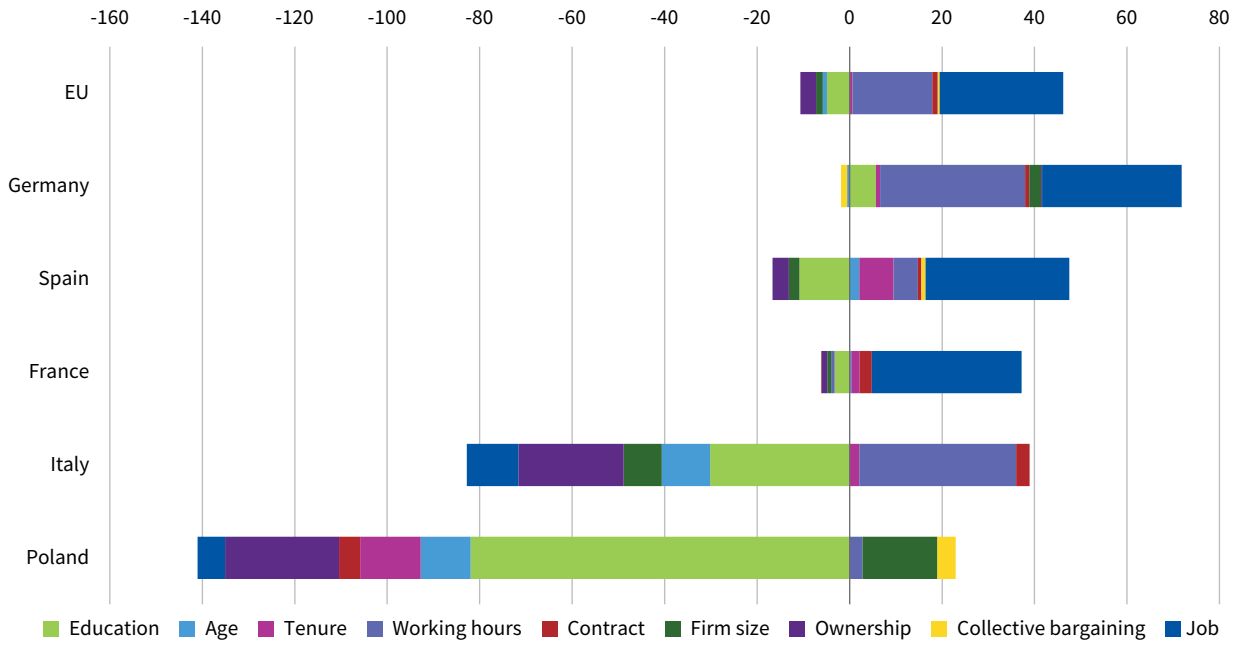
Despite all of the variables included in the model, the adjusted gender pay gap remains large for the EU as a whole (around 10.5%), which means around two-thirds of the observed gender pay differentials (16% in 2014) remain unexplained. This has often been interpreted as a proxy for discrimination, meaning the adjusted gender pay gap would capture the discrimination suffered by women, receiving lower pay for equal work. Nevertheless, caution is needed before making this interpretation. It has to be noted that the variables included in the model do not allow all of the characteristics of workers and their effect on potential earnings to be captured (for instance, professional experience), something which could severely limit the capacity of the model to explain a much larger part of

20 If sector and occupation are included as separate variables in the analysis, instead of the job variable (see Table A1 in the annex), results differ: economic activity (NACE at the one-digit level) has a large and positive contribution for the EU as a whole and across most countries, meaning women tend to work in lower paying sectors, but occupational category (ISCO at the two-digit level) has a small negative contribution for the EU as a whole (and in almost two-thirds of the countries), meaning women would tend to work in higher paying occupations. These results for sector and occupation in the Blinder–Oaxaca decomposition are in line with previous studies. Nevertheless, caution is needed when interpreting these results owing to data limitations: the ISCO categories at the two-digit level do not capture the gender heterogeneity in occupational sorting fully and do not adequately control for vertical hierarchy; in addition, a high correlation exists between occupation and sector, so that some part of the effect of occupational segregation could have been attributed to industry differences, which have a positive effect in explaining the gender pay gap (European Commission, 2018).

the gender pay gap. Therefore, the unexplained gap should be viewed as a residual gap that cannot be explained with the variables available in the SES data and that could be due to discrimination (Dittrich et al, 2014; Blau and Kahn, 2017; Neumark, 2018), but could also be due to other factors, such as the different attitudes and behaviours of male and female workers, for instance wage bargaining attitudes, personal abilities and negotiating skills, which cannot be captured by the available data (Blau and Kahn, 2017).

These results are broadly in line with previous research. For the EU, similar exercises by Eurostat (2018) and the European Commission (2018) found that most of the gender pay gap for the EU as a whole remains unexplained, with economic activity and working time emerging as the largest explanatory factors for it, while educational attainment levels have a significant negative contribution to explaining the gap.[21] For the US, recent research shows that occupation and industry differences taken together account for over one-half of the gender pay gap (Blau and Kahn, 2017). The analysis conducted here has contributed to this debate by highlighting the significance of the job variable in the EU and by observing the specific forces operating at different points of the job–wage distribution.

Figure 38: Blinder–Oaxaca decomposition of the gender pay gap in the EU and the five most populated countries: factors contributing to the explained part



Notes: *The results depict the contribution of each variable to the overall explained part of the gender pay gap, so that the sum of the different components of the explained part (positive or negative) equal the overall explained part (for instance, 34.1% for the EU as a whole, 70% in Germany and -118% in Poland). Detailed results are shown in Table A1 in the annex.*
Source: *SES 2014*

21 Depending on the specific sample used (whether smaller companies with fewer than 10 employees or the public sector are included or not in the analysis), some discrepancies may emerge between different empirical studies, regarding either the magnitude of the adjusted gender pay gap or the specific effect of some variables in explaining it. For instance, Eurostat (2018) identified a small negative contribution of the type of contract in explaining the gender pay gap at the EU aggregate.

6 Conclusions

Two distinctive features of labour market change over the last two decades have been the large increase in the labour market participation of women and the trend of workforce ageing. These are just the most recent phases of long-standing patterns of change associated with population ageing, the decline of the traditional male breadwinner model at household level and greater economic autonomy of women.

Women's inactivity rates in particular have declined sharply. This has occurred at the same time as the growth in men's employment rates has slowed or stagnated. The result has been a narrowing of the gender employment gap. However, while this gap has contracted, it still persists in nearly every EU Member State. Current policy targets set out in the European Pillar of Social Rights Action Plan aim to achieve higher employment rates and reductions in the gender employment gap (European Commission, 2021b). An important consideration is that the target levels of a 78% employment rate (72.5% in 2019) among those aged 20–64 years to be achieved by 2030 and a halving of the gender employment gap (11.7 percentage points in 2019) over the same period can be met only if women's employment growth continues to outrun men's growth at an even greater rate than that experienced since the late 1990s. This will be especially challenging given that the gender employment gap has remained virtually unchanged since 2014 (Bisello and Maftei, 2020).

One could have expected the relative expansion of women's employment in recent decades to have led to a diminution of occupational or job segregation by gender. However, the evidence from different indicators is that jobs have not become more gender mixed. The largest share of employment growth has come in jobs held mainly by women and female-dominated jobs.

The share of EU employment in gender-mixed jobs (where neither gender share is less than 60%) declined from 27% to 18% between 1998 and 2019. However, there are differences between the central and eastern European post-2004 accession Member States and the older Member States. In the former, including many that transitioned from state socialism in the 1990s with its tradition of high labour market participation of women, there has been a steady increase in gender segregation since 1998 from low starting levels. In older Member States, on the other hand, gender segregation has declined, notably after 2011. There may have been broader macroeconomic convergence (in terms of gross domestic product per head) between older and newer Member States over the last two decades, but based on evidence in this report trends in employment segregation by job and gender have instead diverged.

Gender segregation in the workforce derives in part from the different task profiles of jobs. Female-dominated jobs are often different from male-dominated or gender-mixed jobs in terms of their task profile. The biggest gender differentiation is in the 'caring' content of jobs, which is much more common in female-dominated jobs. Machine use, on the other hand, is much more common in male-dominated jobs. There were also a number of less expected results from the analysis of the EWCS data. Tasks requiring physical strength were not exclusive to jobs done primarily by men. They were also common in some female-dominated jobs (notably in caring and healthcare). Meanwhile, ICT use, literacy, numeracy and work autonomy – each associated with more cognitively demanding work – were more common in gender-mixed jobs and less common in gender-dominated jobs.

Women's employment is skewed to low-wage jobs and women represent a majority in the bottom job–wage quintile (at EU aggregate level) but a minority in all other job–wage quintiles. They are in particular underrepresented in the middle of the wage distribution, where blue-collar jobs traditionally held by men (for example, in construction and manufacturing) predominate. These gendered attributes of the job–wage distribution have changed, but only gradually.

The question of whether women's employment growth has been more polarising or upgrading (compared with that of men) was nuanced in the report's analysis and depended in part on the particular application of the jobs-based approach used in the European Jobs Monitor. Employment in low-paying jobs for most age cohorts went from being predominantly male in 1995 to being predominantly female in 2019. This suggests that much of the expansion in women's employment in the period was in low-paying jobs. At the same time, the gender gap in high-paying jobs tended to narrow. Together, these patterns suggest that women's employment polarised in the six selected countries in ways similar to that observed earlier in the US (Dwyer, 2013). On the other hand, an analysis that focused instead on marginal employment shifts at EU aggregate level over the period 1998 to 2019 emphasised that employment growth overall has been more upgrading than polarising, that women have been the main beneficiaries of employment growth in well-paid jobs and that women's employment growth has been more upgrading in tandem with men's employment growth being somewhat more polarising, notably in the decade following the Great Recession.

The state (and hence policy) has had an important role to play in boosting well-paid women's employment through its role as an employer. In most Member States, the state accounts directly or indirectly for between 15% and 35% of employment. In sectors such as health, education and public administration, policy decisions – namely whether to reduce or expand public expenditure on such services – have a very direct bearing on the shape of overall employment shifts. Employment in these sectors tends to be biased towards higher skills. It also tends to be biased towards women's employment, and these two linked features contribute strongly to relatively stronger recent growth in women's employment in well-paid jobs. Health, education and public administration combined account for around 60% of net recent (2011–2019) employment growth in mid- to high-paying jobs for women, but these sectors account for the same growth for men only very modestly (<10%). Men's employment growth has been mainly in other private service sectors.

Notwithstanding higher employment growth for women in well-paid jobs, it is still in the upper part of the wage distribution that the gap in hourly pay between men and women is greatest. The gender pay gap is higher in the highest wage quintile jobs in most countries and over twice as high in percentage terms than those in the lower three wage quintiles.

Human capital variables – education and tenure – have declined in importance over time as factors explaining the gender pay gap (Blau and Kahn, 2017). Indeed, in this analysis, controlling for education increased rather than decreased the gender pay gap. This is because women are now more likely than men to have tertiary qualifications, on average, while wage returns to education are greater for men the further up the qualification ladder one goes and are highest for those with post-tertiary qualifications. Women are outperforming men in education, but are being outperformed in terms of pay. In summary, gender gaps are closing, but they are closing more slowly than might be expected based on the characteristics of female workers.

Bibliography

All Eurofound publications are available at www.eurofound.europa.eu

Topic page 'Gender equality', http://eurofound.link/genderequality

Algan, Y. and Cahuc, P. (2007), 'The roots of low European employment: Family culture?', in Frankel, J. A. and Pissaridēs, C. A. (eds.), *NBER international seminar on macroeconomics 2005*, MIT Press, Cambridge, MA, pp. 65–109.

Angelov, N., Johansson, P. and Lindahl, E. (2016), 'Parenthood and the gender gap in pay', *Journal of Labor Economics*, Vol. 34, No. 3, pp. 545–579.

Anker, R. (1998), *Gender and jobs: Sex segregation of occupations in the world*, ILO, Geneva.

Autor, D. and Handel, M. (2013), 'Putting tasks to the test: Human capital, job tasks, and wages', *Journal of Labor Economics*, Vol. 31, No. 2, pp. S59–S96.

Autor, D. H., Levy, F. and Murnane, R. J. (2003), 'The skill content of recent technological change: An empirical exploration', *Quarterly Journal of Economics*, Vol. 118, No. 4, pp. 1279–1333.

Autor, D., Katz, L. and Kearney, M. (2006), 'The polarization of the U.S. labor market', *American Economic Review: Papers and Proceedings*, Vol. 96, pp. 189–194.

Avlijas, S. (2016), 'Vicious and virtuous cycles of female labour force participation in post-socialist eastern Europe', *LEQS Discussion Paper Series*, Vol. 119, London School of Economics, London.

Azmat, G. and Petrongolo, B. (2014), 'Gender and the labor market: What have we learned from field and lab experiments?', *Labour Economics*, Vol. 30, pp. 32–40.

Barroso, A. and Brown, A. (2021), *Gender pay gap in US held steady in 2020*, Pew Research Center, web page, accessed 14 September 2021.

Becker, G. S. (1960), 'An economic analysis of fertility', in Universities-National Bureau (ed.), *Demographic and economic change in developed countries*, Columbia University Press, New York, NY, pp. 209–240.

Becker, G. S. (1991), *A treatise on the family*, 2nd ed., Harvard University Press, Cambridge, MA.

Bertrand, M. (2011), 'New perspectives on gender', in Card, D. and Ashenfelter, O. (eds.), *Handbook of labor economics*, Vol. 4B, Elsevier, Amsterdam, pp. 1543–1590.

Bisello, M. and Maftei, A. (2020), 'Could COVID-19 unravel years of progress on gender equality in employment?', blog post, Eurofound, 9 December.

Bisello, M., Fana, M., Fernández-Macías, E. and Torrejón Pérez, S. (2021), *A comprehensive European database of tasks indices for socio-economic research*, European Commission–JCR, Seville.

Blau, F. and Kahn, L. (2003), 'Understanding international differences in the gender pay gap', *Journal of Labor Economics*, Vol. 21, No. 1, pp. 106–144.

Blau, F. D. and Kahn, L. M. (2007), 'The gender pay gap: Have women gone as far as they can?', *Academy of Management Perspectives*, Vol. 21, No. 1, pp. 7–23.

Blau, F. D. and Kahn, L. M. (2017), 'The gender wage gap: Extent, trends, and explanations', *Journal of Economic Literature*, Vol. 55, No. 3, pp. 789–865.

Blinder, A. S. (1973), 'Wage discrimination: Reduced form and structural estimates', *Journal of Human Resources*, Vol. 8, No. 4, pp. 436–455.

Boeckmann, I., Misra, J. and Budig, M. J. (2015), 'Cultural and institutional factors shaping mothers' employment and working hours in postindustrial countries', *Social Forces*, Vol. 93, No. 4, pp. 1301–1333.

Borghans, L., Ter Weel, B. and Weinberg, B. A. (2008), 'Interpersonal styles and labor market outcomes', *Journal of Human Resources*, Vol. 43, No. 4, pp. 815–858.

Braverman, H. (1974), *Labor and monopoly capital: The degradation of work in the twentieth century*, Monthly Review Press, New York, NY.

Burawoy, M. (1979), *Manufacturing consent: Changes in the labor processes under monopoly capitalism*, University of Chicago Press, Chicago, IL.

Card, D., Cardoso, A. R. and Kline P. (2016), 'Bargaining, sorting, and the gender wage gap. Quantifying the impact of firms on the relative pay of women', *Quarterly Journal of Economics*, Vol. 131, No. 2, pp. 633–686.

CEA (Council of Economic Advisors) (1996), *Job creation and employment opportunities: The United States labor market, 1993–1996*, Office of the Chief Economist, Washington, DC.

Cetrulo, A., Guarascio, D. and Virgillito, M. E. (2020), 'Anatomy of the Italian occupational structure: Concentrated power and distributed knowledge', *Industrial and Corporate Change*, Vol. 29, No. 6, pp. 1345–1379.

Cohen, P. (2016), 'The persistence of gender segregation at work', *Sociology Compass*, Vol. 7, No. 11, pp. 889–899.

Cortes, P. and Pan, J. (2017), *Occupation and gender*, No. 10672, Institute of Labor Economics (IZA), Bonn, Germany.

Dittrich, M., Knabe, A. and Leipold, K. (2014), 'Gender differences in experimental wage negotiations', *Economic Inquiry*, Vol. 52, No. 2, pp. 862–873.

Dosi, G. and Marengo, L. (2015), 'The dynamics of organizational structures and performances under diverging distributions of knowledge and different power structures', *Journal of Institutional Economics*, Vol. 11, No. 3, pp. 535–559.

Duncan, O. D. and Duncan, B. (1955), 'A methodological analysis of segregation indexes', *American Sociological Review*, Vol. 20, No. 2, pp. 210–217.

Dwyer, R. (2013), 'The care economy? Gender, economic restructuring, and job polarization in the U.S. labor market', *American Sociological Review*, Vol. 78, No. 3, pp. 390–416.

EIGE (European Institute for Gender Equality) (2018), *Study and work in the EU: Set apart by gender. Review of the implementation of the Beijing Platform for Action in the EU Member States*, Publications Office of the European Union, Luxembourg.

EIGE (2019), *Tackling the gender pay gap: Not without a better work–life balance*, Publications Office of the European Union, Luxembourg.

EIGE (2020), *Gender inequalities in care and consequences for the labour market*, Publications Office of the European Union, Luxembourg.

EIGE (2021a), *Gender equality index*, web page, accessed 14 September 2021.

EIGE (2021b), *Gender equality and the socio-economic impact of the COVID-19 pandemic*, Publications Office of the European Union, Luxembourg.

Esping-Andersen, G. and Billari, F. (2015). 'Re-theorizing family demographics', *Population and Development Review*, Vol. 41, No. 1, pp. 1–31.

Esping-Andersen, G., Boertien, D., Bonke, J. and Gracia, P. (2013), 'Couple specialization in multiple equilibria', *European Sociological Review*, Vol. 29, No. 6, pp. 1280–1294.

Eurofound (2007), *Fourth European Working Conditions Survey*, Publications Office of the European Union, Luxembourg.

Eurofound (2013), *Employment polarisation and job quality in the crisis: European Jobs Monitor 2013*, Eurofound, Dublin.

Eurofound (2014), *Drivers of recent job polarisation and upgrading in Europe: European Jobs Monitor 2014*, Publications Office of the European Union, Luxembourg.

Eurofound (2016), *What do Europeans do at work? A task-based analysis: European Jobs Monitor 2016*, Publications Office of the European Union, Luxembourg.

Eurofound (2017), *Occupational change and wage inequality: European Jobs Monitor 2017*, Publications Office of the European Union, Luxembourg.

Eurofound (2020), *Gender equality at work, European Working Conditions Survey 2015 series*, Publications Office of the European Union, Luxembourg.

Eurofound (2021), *COVID-19: Implications for employment and working life*, Publications Office of the European Union, Luxembourg.

Eurofound and European Commission–JCR (Joint Research Centre) (2019), *European Jobs Monitor 2019: Shifts in the employment structure at regional level*, European Jobs Monitor series, Publications Office of the European Union, Luxembourg.

European Commission (2017), European Pillar of Social Rights, web page, https://ec.europa.eu/info/strategy/priorities-2019-2024/economy-works-people/jobs-growth-and-investment/european-pillar-social-rights_en

European Commission (2018), *Gender pay gap in EU countries based on SES (2014)*, Publications Office of the European Union, Luxembourg.

European Commission (2021a), *Proposal for a Directive of the European Parliament and of the Council to strengthen the application of the principle of equal pay for equal work or work of equal value between men and women through pay transparency and enforcement mechanisms* (COM/2021/93 final), 4 March, Brussels.

European Commission (2021b), European Pillar of Social Rights Action Plan, Publications Office of the European Union, Luxembourg.

European Commission–JCR (Joint Research Centre) (2020a), *Gaps in the EU labour market participation rates: An intersectional assessment of the role of gender and migrant status*, EUR 30406 EN, Publications Office of the European Union, Luxembourg.

European Commission–JCR (2020b), *Teleworkability and the COVID-19 crisis: A new digital divide?*, No. 2020/05, JRC working papers series on labour, education and technology, European Commission, Seville.

European Commission–JCR (2021), *Mind the task: Evidence on persistent gender gaps at the workplace*, JRC124065, European Commission, Seville.

Eurostat (2018), *A decomposition of the unadjusted gender pay gap using Structure of Earnings Survey data*, Publications Office of the European Union, Luxembourg.

Eurostat (2021), 'Gender pay gap statistics', Statistics Explained, web page, accessed 14 September 2021.

Fernández-Macías, E. and Bisello, M. (2021), 'A comprehensive taxonomy of tasks for assessing the impact of new technologies on work', *Social Indicators Research*, August 2021, Springer Nature online.

Fernández-Macías, E. and Hurley, J. (2017), 'Routine-biased technical change and job polarization in Europe', *Socio-Economic Review*, Vol. 15, No. 3, pp. 563–585.

Ficapal-Cusí, P., Díaz-Chao, A., Sainz-Ibáñez, M. and Torrent-Sellens, J. (2018), 'Gender inequalities in job quality during the recession', *Employee Relations*, Vol. 40, pp. 2–22.

Fuller, S. (2018), 'Segregation across workplaces and the motherhood wage gap: Why do mothers work in low-wage establishments?', *Social Forces*, Vol. 96, No. 4, pp. 1443–1476.

Fuller, S. and Cooke, L. P. (2018), 'Workplace variation in fatherhood wage premiums: Do formalization and performance pay matter', *Work, Employment & Society*, Vol. 34, No. 4, pp. 768–788.

Galor, O., and Weil, D. N. (2000), 'Population, technology, and growth: From Malthusian stagnation to the demographic transition and beyond', *The American Economic Review*, Vol. 90, No. 4, pp. 806–828.

Goldin, C. (2006), 'The quiet revolution that transformed women's employment, education, and family', *American Economic Review*, Vol. 96, No. 2, pp. 1–21.

Goldin, C. (2014), 'A grand gender convergence: Its last chapter', *American Economic Review*, Vol. 104, No. 4, pp. 1091–1119.

Goos, M., Manning, A. and Salomons, A. (2009), 'Job polarization in Europe', *American Economic Review*, Vol. 99, No. 2, pp. 58–63.

Gornick, J. C. and Jacobs, J. A. (1998), 'Gender, the welfare state, and public employment: A comparative study of seven industrialized countries', *American Sociological Review*, Vol. 63, No. 5, pp. 688–710.

Green, F. (2013), *Skills and skilled work: An economic and social analysis*, Oxford University Press, Oxford.

Guiso, L., Monte, F., Sapienza, P. and Singales, L. (2008), 'Diversity: Culture, gender, and math', *Education Forum*, Vol. 320, No. 5880, pp. 1164–1165.

Hobson, B. (2004), 'The individualised worker, the gender participatory and the gender equity models in Sweden', *Social Policy and Society*, Vol. 3, No. 1, pp. 75–83.

Hospido, L., Laeven, L. and Lamo, A. (2019), *The gender promotion gap: Evidence from central banking*, European Central Bank Working Series No 2265, European Central Bank, Frankfurt.

Jaimovich, N. and Siu, H. (2012), 'The trend is the cycle: Job polarization and jobless recoveries', NBER Working Paper No. 18334, National Bureau of Economic Research, Cambridge, MA.

Jones, G. (2008), 'What is the right number of women? Hints and puzzles from cognitive ability research', *Econ Journal Watch*, Vol. 5, No. 2, pp. 227–239.

Juhn, C. and McCue, K. (2017), 'Specialization then and now: Marriage, children, and the gender earnings gap across cohorts', *Journal of Economic Perspectives*, Vol. 31, No. 1, pp. 183–204.

Klasen, S. (2019), 'What explains uneven female labor force participation levels and trends in developing countries?', *World Bank Research Observer*, Vol. 34, No. 2, pp. 161–197.

Kleven, H., Landais, C. and Egholt Søgaard, J. (2019), 'Children and gender inequality: Evidence from Denmark', *American Economic Journal: Applied Economics*, Vol. 11, No. 4, pp. 181–209.

Kraus, V. and Yonay, Y. P. (2000), 'The effect of occupational sex composition on the gender gap in workplace authority', *Social Science Research*, Vol. 29, No. 4, pp. 583–605.

Krings, T. (2020), '"Good" bad jobs? The evolution of migrant low-wage employment in Germany (1985–2015)', *Work, Employment and Society*, Vol. 36, No. 3, pp. 527–544.

Lee, R. (2003), 'The demographic transition: Three centuries of fundamental change', *Journal of Economic Perspectives*, Vol. 17, No. 4, pp. 167–190.

Lee, R. (2015), 'Becker and the demographic transition', *Journal of Demographic Economics*, Vol. 81, No. 1, pp. 67–74.

Lesthaeghe, R. (2020), 'The second demographic transition, 1986–2020: Sub-replacement fertility and rising cohabitation – A global update', *The Genus*, Vol. 76, No. 10, pp. 1–38.

Lesthaeghe, R. and van de Kaa, D. J. (1986), 'Twee Demografische Transities?' ('Two demographic transitions?'), in van de Kaa, D. J. and Lesthaeghe, R. (eds.), *Bevolking: Groei en Krimp* (*Population: Growth and decline*), Van Loghum Slaterus, Deventer, Netherlands, pp. 9–24.

Lesthaeghe, R. and Surkyn, J. (1988), 'Cultural dynamics and economic theories of fertility change', *Population and Development Review*, Vol. 14, No. 1, pp. 1–45.

Livanos, I. and Pouliakas, K. (2012), 'Educational segregation and the gender wage gap in Greece', *Journal of Economic Studies*, Vol. 39, No. 5, pp. 554–575.

Maccoby, E. E. and Jacklin, C. N. (1974), *The psychology of sex differences*, Stanford University Press, Stanford, CA.

Magnusson, C. and Tåhlin, M. (2018), 'Class and gender: Mapping the structure of work-life inequality', conference presentation, Biannual conference of the Swedish Sociological Association, 7–9 March, Lund, Sweden.

Mühlau, P. (2011), 'Gender inequality and job quality in Europe', *management revue – Socio-Economic Studies*, Vol. 22, pp. 114–131.

Murphy, E. and Oesch, D. (2016), 'The feminization of occupations and change in wages: A panel analysis of Britain, Germany, and Switzerland', *Social Forces*, Vol. 94, No. 3, pp. 1221–1255.

Murphy, E. and Oesch, D. (2018), 'Is employment polarisation inevitable? Occupational change in Ireland and Switzerland, 1970–2010', *Work, Employment and Society*, Vol. 32, No. 6, pp. 1099–1117.

Neumark, D. (2018), 'Experimental research on labor market discrimination', *Journal of Economic Literature*, Vol. 56, No. 3, pp. 799–866.

Oaxaca, R. (1973), 'Male–female wage differentials in urban labor markets', *International Economic Review*, Vol. 14, No. 3, pp. 693–709.

OECD (Organisation for Economic Co-operation and Development) (2002), 'Women at work: Who are they and how are they faring?', in OECD (ed.), *Employment outlook*, OECD Publishing, Paris.

OECD (2017), *The pursuit of gender equality: An uphill battle*, OECD Publishing, Paris.

Oesch, D. (2013), *Occupational change in Europe: How technology and education transform the job structure*, Oxford University Press, Oxford.

Oesch, D. and Piccitto, G. (2019), 'The polarization myth: Occupational upgrading in Germany, Spain, Sweden and the UK, 1992–2015', *Work and Occupations*, Vol. 46, No. 4, pp. 441–469.

Oesch, D. and Rodríguez-Menés, J. (2011), 'Upgrading or polarization? Occupational change in Britain, Germany, Spain and Switzerland, 1990–2008', *Socio-Economic Review*, Vol. 9, No. 3, pp. 503–531.

Olivetti, C. and Petrongolo, B. (2017), 'The economic consequences of family policies: Lessons from a century of legislation in high-income countries', *Journal of Economic Perspectives*, Vol. 31, No. 1, pp. 205–230.

Patten, A. (2016), *Racial, gender wage gaps persist in US despite some progress*, Pew Research Center, web page, accessed 14 September 2021.

Pollert, A. (2005), 'Gender, transformation and employment in central eastern Europe', *European Journal of Industrial Relations,* Vol. 11, No. 2, pp. 213–230.

Rafferty, A. (2020), 'Skill underutilization and under-skilling in Europe: The role of workplace discrimination', *Work, Employment & Society*, Vol. 34, No. 2, pp. 317–335.

Reilly, D., Neumann, D. L. and Andrews, G. (2017), 'Gender differences in spatial ability: Implications for STEM education and approaches to reducing the gender gap for parents and educators', in Khine, M. S. (ed.), *Visual-spatial ability in STEM: Transforming research into practice*, Springer International, Cham, Switzerland, pp. 195–224.

Rendall, M. (2017), *Brain versus brawn: The realization of women's comparative advantage*, University of Zurich, Zurich.

Smith, M., Burchell, B., Fagan, C. and O'Brien, C. (2008), 'Job quality in Europe', *Industrial Relations Journal*, Vol. 39, No. 6, pp. 586–603.

Wren, A. (ed.) (2013), *The political economy of the service transition*, Oxford University Press, Oxford.

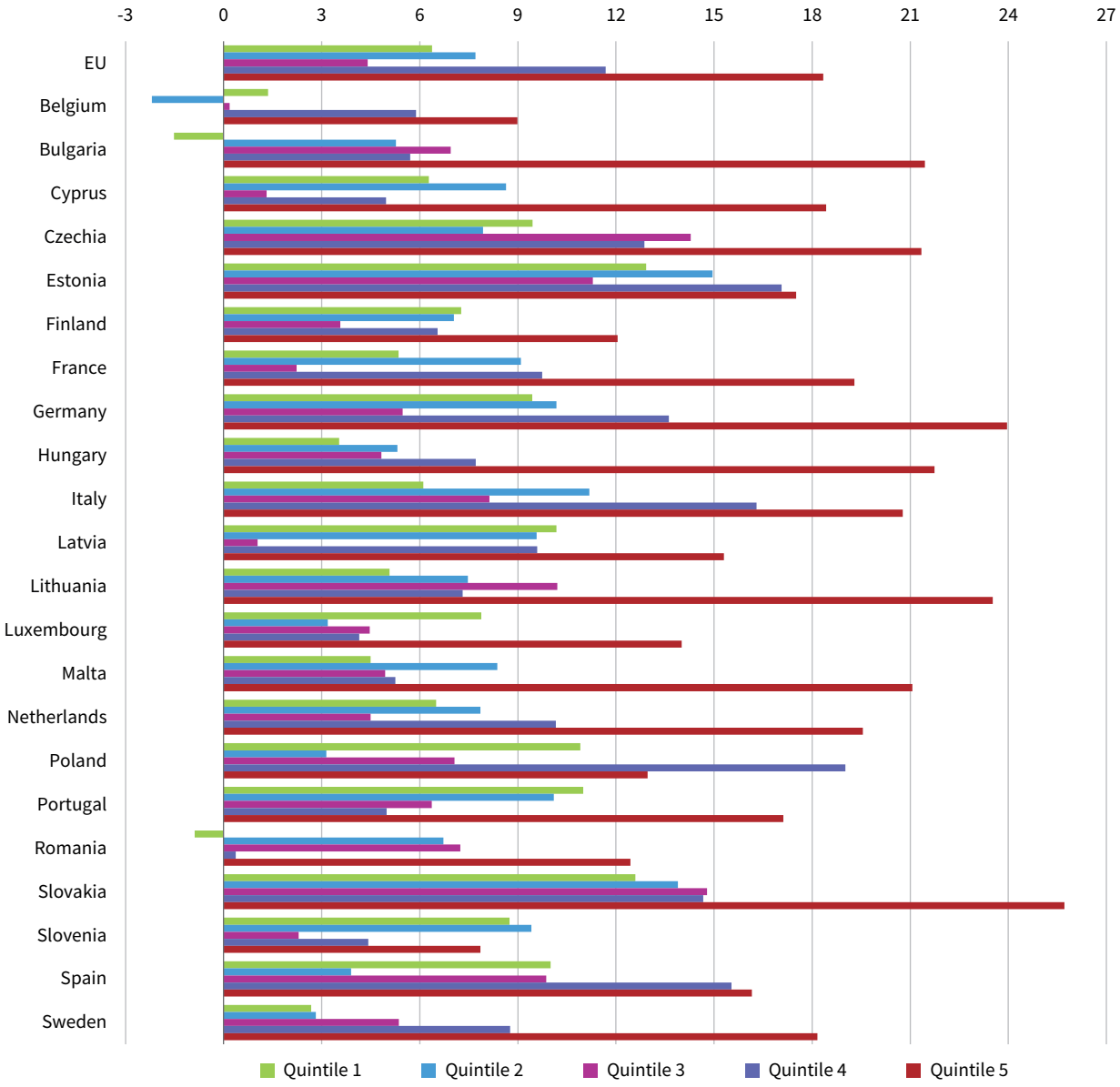
Wright, E. O. and Dwyer, R. (2003), 'The patterns of job expansions in the United States: A comparison of the 1960s and 1990s', *Socio-Economic Review*, Vol. 1, pp. 289–325.

Wrohlich, K. (2017), 'Gender pay gap varies greatly by occupation', *DIW Economic Bulletin*, Vol. 7, No. 43, pp. 429–435.

Yaish, M. and Stier, H. (2009), 'Gender inequality in job authority: A cross-national comparison of 26 countries', *Work and Occupations*, Vol. 36, No. 4, pp. 343–366.

Annex

Figure A1: Gender pay gap across job–wage quintiles, 2014 (%)



Note: *Data are for 22 Member States only: data were not available for Austria, Denmark, Finland, Greece and Ireland.*
Source: *SES 2014*

Table A1: Detailed Blinder Oaxaca decomposition of the gender pay gap, across job wage quintiles and EU countries, 2014

	Unadjusted	Unexplained	Explained part									
			Total	Education	Age	Tenure	Working hours: Full/part-time	Contract	Firm size	Ownership: Public/private	Collective bargaining	Job
EU	16	65.9	34.1	-4.9	-0.9	0.6	17.2	1.2	-1.5	-3.4	0.4	26.7
q1	6.4	98.4	1.6	0.3	-8.9	-17.7	52.9	-0.4	-3.3	0.2	-6.1	
q2	7.7	90.8	9.2	-9.7	-0.8	-3.2	44.2	0.2	-6.3	-1.1	5.4	
q3	4.4	142.6	-42.6	-62	-2.3	-18.8	83.2	-2.6	-16.8	4.8	2.1	
q4	11.7	95.4	4.6	-31.1	0.5	3.7	18.2	3.9	0.5	5.4	1.7	
q5	18.3	79.7	20.3	-6.1	8.2	1.1	8.9	3.7	-0.7	9.2	-1.2	
Belgium	6.6	48.1	51.9	20.1	1.9	1.5	19.7	0.7	-1.3	-0.8		10
Bulgaria	12.7	128.6	-28.6	-33.2	-1.9	-17.9	1.7	0.7	10.7	-4.3	-5.7	21.5
Cyprus	12.7	107.1	-7.1	-8.2	0	6.7	3.5	0.9		-2.5	-4.8	-2.5
Czechia	20.4	77.3	22.7	-0.3	-1.6	0.3	1	1.5	2.1	-6	1.5	24.2
Estonia	23.3	83.1	16.9	-7.3	4.9	-2.8	3.6	0	-9.4	0.7	0	27.2
Finland	17.6	55.6	44.4	-4.8	-2.6	0.2	-0.6	1.1	-3.6	5.2	0	49.7
France	15.9	69	31	-3.2	0.3	1.8	-0.8	2.6	-0.8	-1.3	0	32.5
Germany	22.6	30	70	5.7	-0.5	0.9	31.4	0.9	2.6	0.2	-1.3	30.2
Hungary	10.5	133	-33	-46.2	-4.8	-10.2	-56.8	1.2	-30.8	16.3	11.9	86.4
Italy	7.7	143.9	-43.9	-30.1	-10.4	2.1	33.9	2.9	-8.3	-22.7		-11.1
Latvia	9.9	277	-177	-50.8	1.2	-36.3	11.6	-0.1	-39	-13.7	-4.6	-45.3
Lithuania	5.4	134	-34	-14	30.1	8.1	15.9	-3.5		-47.3	-0.3	-23
Luxembourg	13.9	111.6	-11.6	-32	6.8	-12.7	-0.1	0.6	-39.7	-0.2	-5.1	70.8
Malta	10.1	94.7	5.3	-16.1	12.7	10	1.7	-0.3		-3.1	-0.4	0.8
Netherlands	17.2	48.6	51.4	-0.7	12	4.4	19.3	1.2	-2.7	15	0.3	2.5
Poland	8.2	218	-118	-82	-10.8	-13.1	2.8	-4.6	16.2	-24.6	4	-5.9
Portugal	14.9	80.5	19.5	-29.8	0.5	2.7	-1	-1.7	-8.3	-3	-0.3	60.2
Romania	3.4	1402.7	-1302.7	-719	0.1	-194.8	36.2	1.5	-338.6	-336.5	1.8	246.6
Slovakia	19.4	86.8	13.2	-5	-1.8	-2.3	4.5	-0.2	1.8	2.7	-6.1	19.6
Slovenia	3.7	498.9	-398.9	-207.4	-20.1	-59.2	18.5	-23.9	-62.4	-78.3		33.8
Spain	13.7	69.2	30.8	-10.9	2.1	7.4	5.2	0.8	-2.3	-3.6	0.9	31.1
Sweden	13.5	51.3	48.7	-8.9	-2.2	-3.2	3.4		-5.6	7.5		57.8

Note: *Data are for 22 Member States only: data were not available for Austria, Denmark, Finland, Greece and Ireland.*
Source: *SES 2014*

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TJ-AN-20-001-EN-N

One of the most striking developments of the last half-century has been the huge rise in the labour market participation of women. Two out of every three net new jobs created over the last two decades in the EU were taken by women. At the same time, sharply rising employment rates among older workers due to population ageing and policy changes have increased the share of older workers in the labour market. This report examines the impacts of the changing contours of labour supply on the employment structure over the last quarter-century in Europe (1995–2019). The primary focus is on gender, with a secondary focus on ageing. Among the main findings are that employment shares in gender-balanced jobs have declined despite the rising female share of employment and that gender pay gaps are highest in well-paid jobs.

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Publications Office
of the European Union

ISBN 978-92-897-2240-7
ISSN 2363-0833
doi:10.2806/16416