

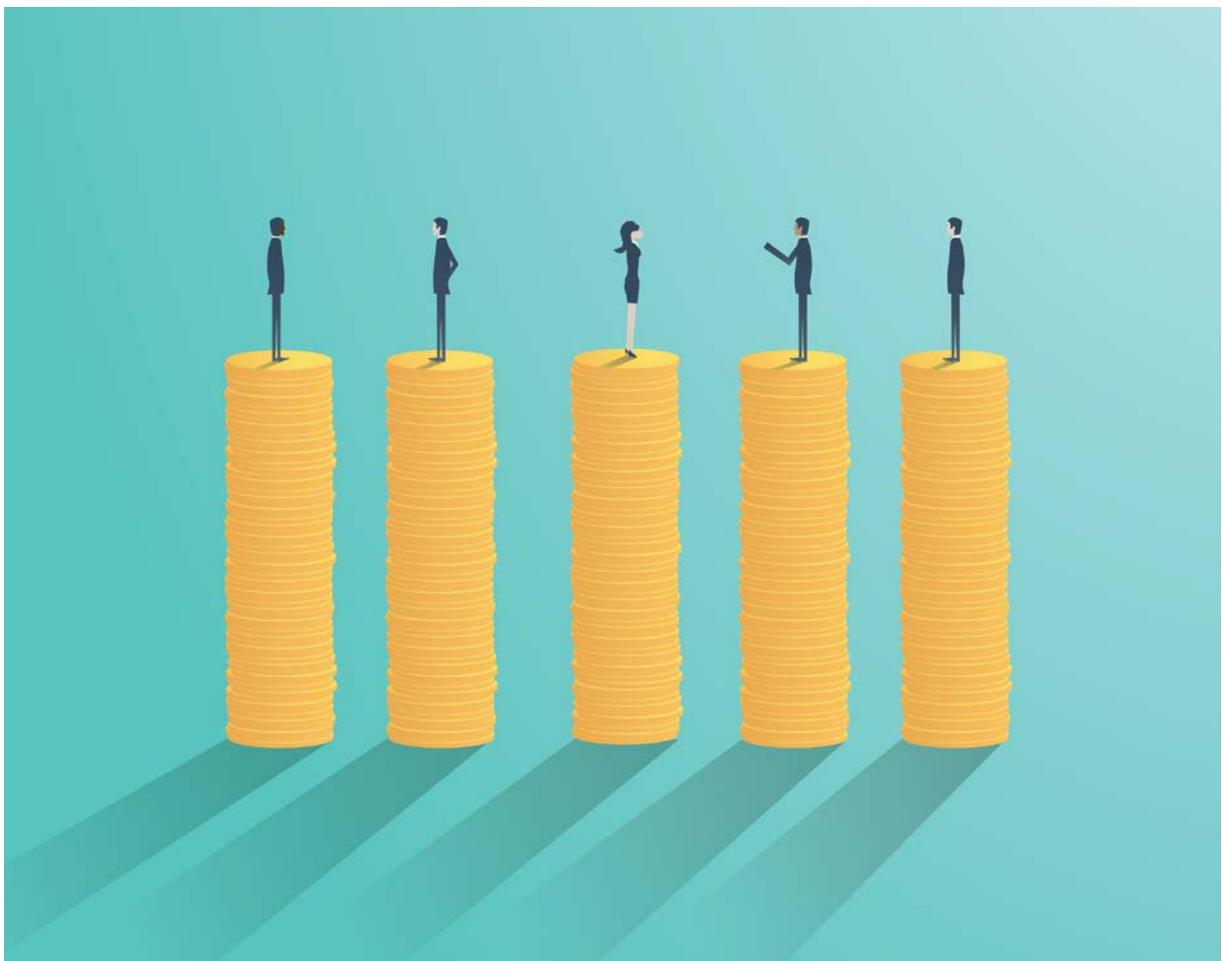
STUDY

Requested by the EMPL committee



# Equal Pay for Equal Work

Binding pay-transparency measures



Policy Department for Economic, Scientific and Quality of Life Policies

Directorate-General for Internal Policies

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# Equal Pay for Equal Work

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## Binding pay-transparency measures

### **Abstract**

This study identifies key concepts in the debate about pay transparency measures. It maps out both their implementation across EU Member States, and the positions of key stakeholders on making them legally binding through EU legislation. Evidence from the reviewed literature shows that pay transparency measures help address unjustified or discriminatory wage gaps. These measures are also associated with concerns about administrative costs (mainly for employers) and issues of pay confidentiality.

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## LIST OF ABBREVIATIONS

<b>CEEP</b>	European Centre of Employers and Enterprises providing Public Services and Services of general interest
<b>CoR</b>	Committee of the Regions
<b>EC</b>	European Commission
<b>EESC</b>	European Economic and Social Committee
<b>EHRC</b>	Equality and Human Rights Commission
<b>EIGE</b>	European Institute for Gender Equality
<b>EP</b>	European Parliament
<b>EPIC</b>	Equal Pay International Coalition
<b>EPSU</b>	European Public Service Union
<b>ETUC</b>	European Trade Union Confederation
<b>ETUCE</b>	European Trade Union Committee for Education
<b>EU</b>	European Union
<b>Eurofound</b>	European Foundation for the Improvement of Living and Working Conditions
<b>EWL</b>	European Women’s Lobby
<b>ILO</b>	International Labour Organisation
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>SMEunited</b>	Association of crafts and SMEs in Europe (formally known as UEAPME)
<b>UN Women</b>	The United Nations Entity for Gender Equality and the Empowerment of Women

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## EXECUTIVE SUMMARY

### Background

- The gender pay gap is a result of a complex set of interrelated causal factors, and as such, a multifaceted policy response is required. This also suggests there is a need for experimentation, feedback, and improvement – because such compound problems are unlikely to be solved at the first attempt. The complexity also indicates that new responses may lead to some unintended consequences, as it is difficult to predict all potential impacts if some of the links between different factors are not fully understood.
- Pay transparency legislation facilitates effective application of the equal pay principle in practice. It reveals potential gender bias or discrimination in pay structures, and contributes to raising awareness and improving understanding of the causes of the gender pay gap.
- Under the European Commission Recommendation on strengthening the principle of equal pay between men and women through transparency (7 March 2014), Member States are encouraged to adopt instruments aimed at facilitating pay transparency. These include the right to request information on pay levels, issue gender pay reports, conduct gender pay audits, and discuss the issue of equal pay during collective bargaining.
- However, the take-up of the Commission Recommendation among the Member States has been limited. As a result, the EC announced plans to propose binding pay-transparency measures in 2020.

### Aims and method

- This in-depth analysis identifies key concepts in the debate about (binding) pay transparency measures. It outlines the evidence to support the pros and cons of this policy that are identified in the literature. It maps out the state of play in all Member States and at the EU level with regards to (binding) pay transparency measures. These include the impact of existing regulations as well as summarising the position of EU institutions and other relevant stakeholders on (binding) pay transparency measures.
- This assignment provides a comprehensive literature review on pay transparency measures, scoping out the current landscape of existing research and official stakeholder positions on the subject. Rapid Evidence Assessment (REA) was used to conduct a review of existing evidence in academic and grey literature. Of the 74 sources identified and screened as part of the REA, 18 were ultimately included in the review. A further 5 sources were identified via snowballing, resulting in a total of 23 sources included in the review. Targeted search was carried out alongside the REA. This maximised the breadth and diversity of sources and identified the various positions of EU institutions and stakeholders on pay transparency measures. Websites of 15 stakeholders at the European and international level were hand-searched to identify their views on (binding) pay transparency measures.

## Findings and conclusion

- Sources included in the review identify a number of arguments for pay transparency measures, as well as some arguments against their implementation. The most commonly identified advantages relate to the potential for pay transparency measures to help address unjustified or discriminatory wage gaps. This is weighed against disadvantages, such as the administrative cost for employers and concerns about pay confidentiality.
- However, many of the arguments used both for and against (binding) pay transparency measures lack a strong evidence base. Relatively few studies evaluate the effect of pay transparency measures implemented in EU Member States on the gender pay gap and associated outcomes, although promising results are identified in countries such as Sweden, Finland and Denmark. Although there is some evidence that pay transparency can help to reduce the gender pay gap, further research is required to understand the extent to which and how this happens, as well as factors that enhance or hamper the effect.
- The literature points to a number of barriers to and facilitators of implementing pay transparency measures. Among the barriers is the low level of awareness of pay transparency measures among employees and employers alike, and limited understanding of their purpose and rationale. The importance of enforcement, follow-up actions and the role of trade unions in response to identified wage gaps is also highlighted in the literature.
- Opinions on introducing binding pay-transparency measures vary largely among key EU stakeholders, from those who fully support introducing them (representing different groups of stakeholders: the EP, EC, ETUC, EPSU and EWL), to those who strongly oppose them (representing primarily employer associations: BUSINESSEUROPE, SMEunited and CEEP).
- The Special Eurobarometer on gender equality showed that the majority of employees were in favour of the publication of average wages by job type and gender at their company, and most of them declared they would do something upon learning about the gender pay gap in their workplace.
- The EC intends to prepare a legislative proposal for binding pay-transparency measures. It will be important that:
  - the proposal seeks the right balance between advancing the principle of equal pay and introducing additional administrative requirements to employers;
  - any binding measures are accompanied by tools to support their implementation;
  - effective monitoring and enforcement mechanisms are in place to ensure compliance.

# 1. BACKGROUND

## 1.1. The Gender Pay Gap – a Persistent Problem

At the EU level, the gender pay gap is defined as the relative difference in the average gross hourly earnings of women and men within the economy as a whole (see Box 1; European Commission, 2018; OECD, 2020; EIGE, 2020).

Box 1: Key definitions

**Gender pay gap (or pay gap):** the difference between the average gross hourly earnings of female and male employees, expressed as a percentage of men’s earnings<sup>1</sup>.

**Gender wage gap:** the difference between median earnings of men and women relative to median earnings of men<sup>2</sup>.

**Equal pay for work of equal value:** equal pay for work to which equal value is attributed, without discrimination on grounds of sex or marital status, with regard to all aspects of pay and conditions of remuneration.

Source: EIGE (2020), OECD (2020)

Latest figures from Eurostat indicate a gender pay gap of 16.0 % across all 28 EU Member States, ranging from 3.5 % in Romania to 25.6 % in Estonia (see Figure 1). It has been over 60 years since the principle of equal pay for men and women in cases of equal work (or work of equal value) was adopted in the 1957 Treaty of Rome (now Article 157 of the Treaty on functioning of the EU). Since then, there have been initiatives to address the gender pay gap both at EU and Member State levels (O’Reilly et al., 2015). Although some narrowing of the gap has been recorded in most EU countries, the challenge persists – in some countries, the gap has actually widened (O’Reilly et al., 2015).

Figure 1: The unadjusted gender pay gap in EU 28 Member States, 2017 (difference between average gross hourly earnings of male and female employees as % of male gross earnings)



Source: Eurostat (2019), based on the Structure of Earnings (SES)

The literature identifies several explanations for the persistence of the gender pay gap. The commonly cited factors behind pay inequalities include: (i) individual choices, (ii) horizontal segregation,

<sup>1</sup> Gross earnings are wages or salaries paid directly to an employee before income tax and social security contributions are deducted. In the EU, the gender pay gap is referred to officially as the ‘unadjusted gender pay gap’, as it does not take into account all of the factors that impact on the gender pay gap, such as differences in education, labour market experience, hours worked, type of job, etc.

<sup>2</sup> Data refer to full time employees and those who are self-employed.

(iii) value of work, (iv) caring responsibilities, (v) stereotypes and (vi) discriminatory practices (see European Commission, n.d.; Perez, 2019).

**Individual choices** (to the extent that these are truly free, rather than dictated by circumstances or structural inequalities – as discussed below) may play a role in explaining part of the gender pay gap. These choices start with educational choices of major subjects studied, jobs and work patterns (full-time versus part-time). However, Rubery et al. (2005) point out that factors contributing to the gender pay gap go beyond women's preferences and also relate to existing general wage structures, as well as job and workplace characteristics.

Many explanations centre around **horizontal segregation**, 'the sexual division of labour' and 'occupational segregation' (Gow & Middlemiss, 2012). Women and men work in different sectors, occupations and jobs – some are dominated by women (such as nursing or teaching), while others are dominated by men and offer higher wages, even when the same level of experience and education is needed.

As well as women being over-represented in lower paid sectors and occupations, it could be argued that traditionally female-dominated sectors and occupations are under-valued and under-paid (Rubery, 2017; Perez, 2019). This ties in with another factor: **how work is valued**. Women tend to do more unpaid work (such as housework) that – rightly or not – offers no financial reward but benefits families, society and economy at large. This unpaid work limits women's opportunities to seek or stay in full-time paid employment. Women may also earn less than men for doing jobs of equal value, if women's skills are undervalued compared to men's.

Another factor relates to **caring responsibilities**. It has also been argued that women face more challenges to balance work and family life than men, a factor that can channel them into lower ranking – and consequently lower paid – positions (O'Reilly et al., 2015). The arrival of children significantly affects women's pay (Anderson et al., 2002). Women are more likely than men to take time out of the labour market when they have children and to work part-time rather than full-time, and these factors contribute to the gender pay gap (Costa Dias et al., 2018). Mandel and Shalev (2009) highlight that national family policy can have an impact on the gender pay gap as it affects women's ability to integrate into the labour market.

However, perhaps the most entrenched factor relates to **stereotypes** around gender roles. These affect early aspirations of boys and girls, what types of work men and women can or should do and the types of skills appreciated in men and women in the workplace, all of which affect career and salary progression. Stereotypes are perpetuated in society through education, media, workplace (recruitment, pay structures, training and promotion opportunities) and the design of social security systems (Perez, 2019).

Finally, there are different forms of **direct and indirect discrimination**: this includes women being paid less than men for the same work, and women being paid less for a job of equal value in occupations dominated by women.

Rather than achieving consensus on what factors have caused, or are causing, the gender pay gap, it has been recognised that all of these factors are interdependent and may shape one another to such an extent that it is not possible to effectively determine whether discrimination or structural factors are to blame (Rubery et al., 2005). This point was highlighted by reports on employment and social developments in Europe (e.g. European Commission, 2019a).

Several studies use decomposition analysis to estimate the contribution of different explanatory factors (such as levels of economic activity, part-time or full-time employment, highest levels of educational

attainment) to the gender pay gap (e.g. Leythienne and Ronkowski, 2018). However, such analyses identified a large ‘unexplained’ component. Leythienne and Ronkowski (2018) estimated this unexplained gender pay gap at 11.5 % (which means that women earn 11.5 % less than men after correcting for the different average characteristics of men and women). However, the authors did not agree with the hypothesis that this unexplained gap is due to discriminatory or unjust differences in pay. Instead they suggest that the data used for their analysis missed some important variables (e.g. length of working experience), which could provide further explanation of the gender pay gap.

The financial effects of the gender pay gap on women are substantial and often life-long. As such, actions are required to change this. A study on the economic benefits of gender equality shows the positive impacts of reducing gender inequalities in the labour market (EIGE, 2017). It demonstrates that an increase in women’s salaries is likely to lower poverty rates among women and reduce the gender gap in old age pensions (EIGE, 2016). It further shows that a reduction in the pay gap can also increase women’s confidence and allow them to gain more responsibility at work and progress into leadership positions (Booth et al., 2003). Higher wages can also encourage more women to enter the labour market, leading to increased employment (EIGE, 2017).

## 1.2. Relevant EU Action

It is clear that the gender pay gap is a result of a complex set of interrelated causal factors, and as such, a multifaceted policy response is required. This also suggests there is a need for experimentation, feedback, and improvement – because such compound problems are unlikely to be solved at the first attempt. The complexity also indicates that new responses may lead to some unintended consequences, as it is difficult to predict all potential impacts if some of the links between different factors are not fully understood.

The EU has taken several measures in an attempt to address the issue. The following legislative actions are key examples:

- Article 157 of the Treaty on the Functioning of the European Union (originally Article 119 of the Treaty of Rome Establishing the European Community, 1957) relays the principle of equal pay for men and women for equal work and work of equal value;
- Equal Pay Directive 1975/117/EEC focused on the application of the principle of equal pay for men and women; it was later replaced by the following:
- Recast Directive 2006/54/EC on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation.

In addition to these regulatory measures, the EU has put forward a range of ‘soft-law measures’ with the aim of encouraging a narrowing/closure of the gender pay gap (Peruzzi, 2015). Examples include:

- Framework Strategy for equality between women and men 2001–2005, Roadmap for equality between women and men (2006–2010) and the subsequent Strategy for equality between women and men 2010–2015;
- European Commission (1996). A Code of Practice on the Implementation of Equal Pay for Work of Equal Value for Women and Men, COM(96)336 final, 17 July 1996;
- Employment guidelines for Member States as part of the European Employment Strategy (see Smith & Villa, 2010);

- Country-specific recommendations that address the causes of the gender pay gap during the European Semester<sup>3</sup>.

A report on the Recast Directive 2006/54/EC highlighted problematic areas in terms of the practical application of equal pay provisions in Member States. This was '*illustrated by the persistent gender pay gap, which could be caused in considerable part by pay discrimination and by the lack of challenges by individuals in national courts*' (European Commission, 2013). It further announced new Commission plans to focus on wage transparency (European Commission, 2013). A 2017 report explains that enforcement of equal pay for equal work or work of equal value is commonly achieved through individuals bringing cases to national courts (European Commission, 2017a). Given this, it is important that employees are able to access information about pay. Pay transparency is therefore an essential piece in facilitating the closing or elimination of the gender pay gap.

### **1.3. Pay Transparency Measures as a Vehicle for Addressing the Gender Pay Gap**

Pay transparency legislation facilitates effective application of the equal pay principle in practice, as it reveals potential gender bias or discrimination in the pay structures, and contributes to raising awareness and better understanding of the causes of the gender pay gap (EIGE, 2019). The Commission Recommendation on strengthening the principle of equal pay between men and women through transparency encouraged Member States to adopt at least one of the four suggested instruments aimed at facilitating pay transparency, including:

- providing the right for employees to request information on pay levels;
- requiring companies with more than 50 employees to issue regular reports on gender and pay in their organisation;
- requiring gender pay audits from companies with at least 250 employees;
- ensuring that the issue of equal pay, including pay audits, is discussed at the appropriate level of collective bargaining.

The state of play at the EU and national level with regard to pay transparency measures is discussed in Section 3.3 below.

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<sup>3</sup> The European Semester is a process for the coordination of economic policies across the EU. It allows the EC and the Member States to discuss their plans and monitor progress at specific times throughout the year.

## 2. OBJECTIVES AND METHODS

### 2.1. Objectives and Research Questions

This in-depth analysis:

- identifies key concepts in the debate about (binding) pay transparency measures and the pros and cons identified in the literature (and the evidence for these measures);
- maps out the state of play in all Member States and at the EU level with regards to (binding) pay transparency measures, including the impact of existing regulations;
- summarises the position of EU institutions and other relevant stakeholders on (binding) pay transparency measures.

The analysis addresses the following research questions:

- 1) What are the advantages (and limitations) of (binding) pay transparency measures identified in the literature?
- 2) What are the barriers to and facilitators of (binding) pay transparency measures identified in the literature?
- 3) What is the state of play at the EU and national level with regard to (binding) pay transparency measures?
- 4) What are the position of EU institutions and other stakeholders on (binding) pay transparency measures?

### 2.2. Methods

This report provides a comprehensive literature review on pay transparency measures, scoping out the current landscape of existing research and official stakeholder positions on the subject. A two-pronged approach to this analysis was adopted:

- 1) A Rapid Evidence Assessment (REA) was used to conduct a review of existing evidence in academic and grey literature. REAs follow the principles of a systematic literature review, but make concessions to the breadth of the process by limiting some aspects, such as the databases searched or time-span of eligible studies;
- 2) A targeted search was carried out alongside the REA to maximise the breadth and diversity of sources identified on positions of EU institutions and stakeholders on pay transparency measures.

Detailed descriptions of each method are presented in the Annexes.

## 3. FINDINGS

### 3.1. Advantages and Limitations of (Binding) Pay Transparency Measures Identified in Literature Review

This section provides an overview of advantages and limitations of pay transparency measures identified in the literature. It begins with a discussion of arguments for and against pay transparency measures in general, and then moves on to discuss each of the four types of measures covered by the Commission Recommendation, along with other pay transparency measures identified in the literature – namely legislation prohibiting pay secrecy. Particular focus is given to the effectiveness of mandatory statutory pay transparency measures.

The majority of sources identified as part of the review discuss arguments for and against pay transparency measures, although not all sources present primary evidence in support of these arguments. The identified evidence is relatively sparse in relation to the effects of pay transparency measures (expected and observed) introduced in EU Member States (European Commission, 2017). Some sources directly estimate the effect of specific policies or measures, but these sources most often relate to pay secrecy legislation in the US, rather than to the application of pay transparency measures recommended by the EC in EU Member States.

#### 3.1.1. Arguments for and against pay transparency measures in general

This section provides an overview of arguments for and against pay transparency measures in general; the following section (3.1.2) discusses arguments for and against specific pay transparency measures. The main argument made in support of pay transparency measures is that they aid the identification and reduction of discriminatory wage gaps including the gender pay gap, although some sources point to potential negative effects, such as employers offering lower wages or dissatisfaction and resentment amongst employees.

#### Identifying and reducing discriminatory wage gaps

The key argument for, and advantage of, pay transparency measures identified in the literature is that they **enable unjustified or discriminatory wage gaps to be identified** (Ramachandran, 2011; Estlund, 2014; Castilla, 2015; Trotter et al., 2017; Veldman, 2017; McGregor et al., 2017; Smit et al., 2019). Sources most commonly discuss the gender pay gap, but some also mention wage gaps according to race or ethnicity (Ramachandran, 2011; Estlund, 2014; Castilla, 2015; Smit et al., 2019).

Because they identify unjustified or discriminatory wage gaps, pay transparency measures are portrayed in the literature as a catalyst for helping to **reduce discriminatory wage gaps** (Kim, 2013; 2015; Castilla, 2015; Veldman, 2017; European Commission, 2014; 2017; Aumayr-Pintar, 2018). The literature suggests a number of mechanisms – that might co-exist and reinforce one another – for how this might occur. Information gained via pay transparency measures may prompt employers to consider the fairness of their wage systems (Estlund, 2014), and to take steps to address discrimination and wage gaps (Aumayr-Pintar, 2018). This information may be used by employees, their representatives or other actors to either negotiate with employers or take legal action (European Commission, 2017; Veldman, 2017). These actions (e.g. a successful tribunal case) may have a knock-on effect, whereby other employers are incentivised to pre-emptively address any wage gaps in their organisation (European Commission, 2017).

## Informed choices

Another key argument for pay transparency measures is that they allow individuals to gain a **better understanding of whether their pay is fair** in the sense of being aligned with peers who occupy comparable positions (Smit et al., 2019). This information enables employees to make **more informed labour market choices** (Cullen and Pakzad-Hurson, 2019; Smit et al., 2019) and to **negotiate more frequently and successfully** with employers (Trotter, 2011; Kim, 2015; Cullen and Pakzad-Hurson, 2019). Being able to negotiate more easily with employers is of particular importance for women and minorities, since these groups may be less comfortable entering into negotiations due to cultural conditioning (Ramachandran, 2011).

## Increasing or reducing labour costs

The counter-argument is that employers may be concerned about pay transparency measures **driving up the cost of labour** or increasing staff turnover, since employees may become dissatisfied upon learning more about their pay relative to others in the organisation (Cherradi, 2016). Employers may **negotiate more aggressively at the point of hiring** in situations of wage transparency, anticipating later negotiations with employees (Cullen and Pakzad-Hurson, 2019). This may result in **lower average wages** for employees and **growth in low-paid employment**, a proposition that finds some empirical support in one experimental study (Cullen and Pakzad-Hurson, 2019)<sup>4</sup>. Wage information may also lead to **greater competition amongst employers** and ‘employee poaching’ (Veldman, 2017).

## Effect on morale and satisfaction

Some sources point to potential negative effects for employees such as **low morale and dissatisfaction** if one learns that peers are paid more (Estlund, 2014; Canales, 2018; Smit et al., 2019). Transparency could lead to **distress and confusion for employees**, as well as **tension, conflict and resentment** (Cherradi, 2016), particularly if pay levels are disclosed without context or information about the determinants of pay. However, other sources questioned these assumptions or presented evidence against these arguments. In contrast to the arguments made by Cherradi (2016), Canales (2018) argues that pay transparency measures can also **improve satisfaction and work motivation** because employees know that top performers are receiving the highest compensation, although the author does not present primary evidence in support of this claim. One study using an experimental design (Scheller and Harrison, 2018) finds that a sample of US employees working full-time report that satisfaction with pay and work commitment would be higher in situations where employers were transparent about pay<sup>5</sup>. Another source identifies an effect whereby pay transparency measures increase job satisfaction because they result in fairer and more equal pay systems (European Commission, 2014), although this indirect effect is not measured in any of the identified studies.

<sup>4</sup> Cullen and Pakzad-Hurson (2019) analysed data on jobs posted on the online platform TaskRabbit between 2010 and 2014, and estimated the differences in wages for jobs with and without pay transparency (defined in two ways: (a) whether the job advertisement specified the rate of pay and (b) whether jobs involved working alongside co-workers with whom they may discuss payment). They found that under conditions of transparency in the job posting, wages are lower, on average. The authors attribute this to employers being in a stronger bargaining position if they define a price for the work up-front. On-the-job discussions between employees (the other type of transparency) tend to raise wages, since it results in more on-going negotiations between workers and employers. Women tend to bid for work at a lower price than men in conditions of non-transparency in the job posting, meaning that pay transparency results in greater equality in wages between men and women. However, women appear to benefit less from men from the other type of transparency (i.e. workers being able to discuss wages). The generalisability of these findings is limited because the analysis only considers job postings on a specific online platform, which is skewed towards temporary, low-paid jobs in specific sectors.

<sup>5</sup> This study is based on a relatively small sample of full-time employees in the US (N=293), and measures self-reported responses to hypothetical scenarios rather than real-world experiences.

## Longer term impacts of pay transparency measures

Some of the identified sources highlight the wider effects or longer term impacts of pay transparency measures. In as much as pay transparency measures **help reduce the gender pay gap** (a view contested by employers – see Section 3.4), they can be expected to result in **an increase in labour force participation** and working hours for women (since incentives are stronger where pay is higher – see EIGE, 2017). One study finds that in addition to reducing the gender pay gap, pay transparency legislation in Denmark was associated with an increase in firms hiring and promoting women (Bennedsen et al., 2018)<sup>6</sup>. This suggests that pay transparency measures may have a ‘ripple effect’, prompting firms and other actors to look beyond pay, prioritising gender equality more broadly.

The economic ramifications of this could be profound: imposing binding pay-transparency measures at the EU level was estimated to produce an additional €132 billion per year across the EU as a whole (European Commission, 2014). Other outcomes associated with this trend would be making **better use of women’s skills** and **improved productivity** (European Commission, 2014).

### 3.1.2. Arguments for and against specific pay transparency measures

This section presents arguments identified in the literature for and against specific pay transparency measures, including the four types of measures covered by the Commission Recommendation: right to request; duty to publish pay reports; duty to conduct pay audits; and collective bargaining, as well as other measures (namely policies prohibiting pay secrecy and making salary information publicly available). The reviewed sources frequently cite the advantages and disadvantages of pay transparency measures discussed previously, particularly the potential to identify unjustified or discriminatory wage gaps and to take action to address them. Arguments for and against pay transparency measures that are tied to specific measures or types of measures are outlined below.

#### a. Employees’ right to request pay information

##### Concerns about the sensitive nature of pay information

The main argument against establishing a right for employees to request pay information that was identified in the literature relates to concerns about **the sensitive nature of wage information** (Veldman, 2017). Sharing salary information between employees from the same organisation has the potential to create **tension or conflict in the workplace** – a factor noted earlier in relation to pay transparency measures in general (Smit et al., 2019) – but identified as a specific concern in relation to employees’ right to request pay information (Veldman, 2017). While there may be cultural differences among countries, there is some suggestion in the literature that the taboo around discussing salary information is being eroded, at least in the US (Trotter et al., 2017), and indeed that pay transparency measures may be instrumental in this regard (Ramachandran, 2011).

##### Placing the onus on employees rather than employers

One advantage of employees’ right to request pay information that was identified in the literature (other than the advantages of pay transparency measures in general outlined above) is that it imposes a relatively small administrative cost on employers, since employers are only required to take action in cases where employees request information (European Commission, 2014; Veldman, 2017). Implementing a binding measure at the EU level in relation to employees’ right to request pay information is estimated to cost employers €9 million per year across all EU Member States (European

<sup>6</sup> This study uses a differences-in-differences method to estimate the effect of pay transparency on employee pay and other firm-level outcomes including hiring patterns, productivity and profitability.

Commission, 2014), a considerably smaller figure than the corresponding estimate for publishing pay reports (see below, b. Employers' duty to publish pay reports). Measures of this kind place the onus on employees to take action first, which may be challenging given **low awareness of pay transparency measures among the general public** in EU Member States<sup>7</sup> – even in those Member States where governments have gone the furthest in introducing pay transparency measures (Aumayr-Pintar, 2018).

## b. Employers' duty to publish pay reports

### Administrative burden

One key argument identified in the literature against imposing a duty to publish pay reports is that it **increases an administrative burden on employers**. This is also identified as an argument against implementing employees' right to request pay information, as outlined above, but the cost is greater for the employer to produce pay reports and conduct pay audits (see section c below) than for employees' right to request pay information (European Commission, 2014). Assuming a certain level of administrative competency, and particularly for larger employers who are more likely to have systems in place, the additional workload for employers was considered relatively small (Veldman, 2017) but this view was contested by employers (see Section 3.4). Estimates suggest that a mandatory reporting requirement for larger employers<sup>8</sup> would impose a cost of up to €2,028 per organisation per year, amounting to a total of €38 million across all EU Member States (European Commission, 2014).

### Compliance

The administrative burden may result in **low compliance** (Veldman, 2017; Aumayr-Pintar, 2018). Research from Denmark suggests that after statutory pay reporting was introduced, only 30 % of relevant organisations compiled a report, although this could also be attributed to other factors such as a lack of awareness amongst employers about the legislation (cited in Aumayr-Pintar, 2018)<sup>9</sup>. Low compliance was also an issue in relation to pay reporting in the UK, a key reason driving the decision to switch from voluntary to statutory pay reporting (Milner, 2019; discussed in more detail in section 3.2.3). A tension is identified in the literature, whereby pay reports are more meaningful and effective when a greater depth and breadth of information is required from employers, a factor that tends to reduce compliance (Aumayr-Pintar, 2018).

### Follow-up action

Even in situations where employers comply with the legislation, they may **fail to take action to address any unjustified or discriminatory wage practices** uncovered. There is a danger that employers may view pay reporting as a purely statistical procedure or a 'box ticking' exercise, rather than a stimulus for action. One study finds that employers are more likely to take action in response to publishing pay reports if follow-up action is mandatory – as is the case in countries such as Finland and Sweden – compared to countries such as Denmark and Austria, where it is not (Aumayr-Pintar, 2018). A review of legislation obliging employers to report employee pay in Sweden found that over a two-year period, approximately 6,000 persons received wage adjustments following the identification

<sup>7</sup> Even though 90 % of respondents of the Eurobarometer survey said it was unacceptable for a woman to be paid less than a man for the same job, only 26 % thought that equal pay for equal work was guaranteed by law in their country – see European Commission (2017b).

<sup>8</sup> The impact assessment excludes small and micro enterprises (i.e. enterprises with fewer than 50 employees) on the grounds that the cost would be relatively high for these organisations, and also because to be effective, pay reports need to be broken down by different categories of employees, which is not feasible in small organisations.

<sup>9</sup> The original source was published in Danish and therefore not included in the review. See: Holt, H. and Larsen, M. 'Kønsopdelt lønstatistik og redegørelse om lige løn, Evaluering af Loven' ['Gender segregated pay statistics and report about equal pay, Evaluation of the Act'], SFI The Danish National Centre for Social Research, Copenhagen, 2011.

of unjustified wage gaps in organisations (referenced in European Commission, 2017<sup>10</sup>). Research has also identified positive effects of the mandatory reporting requirement in Denmark, where a 7 % reduction in the gender pay gap was observed (Bennedsen et al., 2018).

### c. Employers' duty to conduct pay audits

#### Analysis, diagnosis and action

Pay audits impose requirements on employers to analyse and understand identified wage gaps and to take steps to address them; they require diagnosis as well as description (Veldman, 2017). Therefore, **pay audits may be more effective at stimulating employers and other actors to take actions** to address identified wage gaps than pay-reporting requirements (Veldman, 2017), although no primary evidence was identified in support of this position.

#### Administrative burden

Pay audits impose a relatively **large administrative burden** on employers and may therefore suffer from the same **issues with compliance** identified in relation to pay reports (Veldman, 2017; Aumayr-Pintar, 2018). The cost of mandatory pay audits is higher than for pay reports, since pay audits require additional analysis and follow-up action. The administrative cost of a mandatory requirement for large employers to conduct regular pay audits is estimated to be €10,000 per organisation per year, or €188 million across all EU Member States (European Commission, 2014). The administrative cost of pay audits is cited in the literature as a reason why only three EU Member States – Finland, Sweden and France – have implemented mandatory pay audits (Veldman, 2017).

### d. Measures relating to collective bargaining

#### Reach and scale

An advantage of measures relating to collective bargaining is the **potential reach and scale** of their effects, since collective agreements benefit a large number of workers, often covering entire sectors or industries (European Commission, 2014). There is some evidence that the share of collective agreements dealing with the gender pay gap has increased (from 3 % in 2007 to 10 % in 2010) following the introduction of this obligation in France (European Commission, 2014). There is also a concern related to different levels of unionisation among EU Member States and between different sectors – which renders this measure less applicable where union representation is lacking (European Commission, 2014).

#### Autonomy of social partners

One disadvantage of measures relating to collective bargaining identified in the literature is the **potential to undermine the autonomy of social partners**, since measures of this kind dictate to some extent the content of collective bargaining (noted as a barrier to implementing measures of this kind in Italy, Bulgaria, Portugal and Slovakia; see Veldman, 2017). However, a consultation on the topic of pay transparency measures found that no employers' organisations viewed measures related to collective bargaining as a threat to the autonomy of social partners (European Commission, 2014). Measures of this kind place a requirement on social partners to incorporate gender equality into collective bargaining, but it can be **difficult to ensure that the issue is prioritised** in discussions (Veldman, 2017).

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<sup>10</sup> The source cites a report from the Swedish Equality Ombudsman but does not provide a full reference.

## e. Other pay transparency measures

### Prohibiting pay secrecy

One type of pay transparency measure identified in the literature that does not fall into the four types of measures recommended by the EC is legislation that prohibits employers from banning or discouraging employees from sharing salary information (Kim, 2013; Kim, 2015; Scheller, 2018), as implemented in some US States. Using difference-in-differences analysis to compare wages over time, Kim (2015) finds that the gender pay gap is lower in US States with legislation in place (i.e. where employees are free to discuss their wages with colleagues). Although wages in general are not higher in States prohibiting pay secrecy, wages for women are (a similar finding is identified in Kim, 2013); there is also a concomitant **reduction in the gender pay gap**. These effects are stronger for college-educated women compared to women who have not graduated from college. College-educated women increase their earnings by 3 % in States with pay transparency laws, and the gender pay gap for these workers is reduced by between 5 and 15 % (estimates vary according to model specification). Another source identified as part of the review argues (without providing supporting evidence) that both men and women will take advantage of pay transparency legislation to extract higher pay from their employers, meaning the gender pay gap is not affected (Cherradi, 2016). However, estimates produced by Kim (2015) dispute this, showing that enabling employees to discuss pay with one another results in higher wages for women and a lower gender pay gap.

### Making salaries public if they exceed a certain threshold

A different type of pay transparency measure is addressed by Baker et al. (2019), who assess the effect of legislation in some Canadian provinces requiring salaries for public sector workers (the author focuses on university faculty) to be made public if they exceed a certain threshold. This measure occupies an intermediary space between an employee's right to request salary information and an employer's duty to publish pay reports since employers must publish pay information (usually online), but salaries are linked to specific named individuals rather than presented as averages. Exploiting variation across provinces and over time, Baker et al. find a 30 % **decrease in the gender pay gap** for university staff associated with the introduction of legislation. This is primarily due to an **increase in salaries for female employees** rather than a decrease in salaries for male employees.

### 3.1.3. Arguments for and against binding pay-transparency measures

At the EU level, non-binding measures mean that Member States who do not take appropriate steps will not receive formal sanctions (Tomlinson, 2011). Only some of the identified sources explicitly consider the advantages and disadvantages of whether pay transparency measures are binding or non-binding (Tomlinson, 2011; European Commission, 2014; Milner, 2019; Francis-Devine and Pyper, 2020).

### Compliance

In the UK, low voluntary compliance led to mandatory statutory reporting for private or voluntary sector organisations with a minimum of 250 employees (Milner, 2019). Mandatory reporting has been associated with significantly **improved levels of reporting** (Milner, 2019; Francis-Devine and Pyper, 2020). In the year 2017/2018 1,456 firms failed to report information on their gender pay gap by the specified deadline, but after the Equality and Human Rights Commission (EHRC) started investigation proceedings (outlined in section 3.2.3) this was reduced to fewer than 400 firms, all of whom subsequently complied without the EHRC resorting to prosecution (Milner, 2019).

## Flexibility

An impact assessment conducted by the EC showed that binding pay-transparency measures would produce substantially larger benefits than voluntary measures (European Commission, 2014). However, this was balanced against the fact that binding measures were **less flexible** compared to recommendations (a soft-law instrument) that would allow Member States to adapt national legislation to specific country contexts. A number of arguments against introducing binding pay-transparency measures have been raised by employers and these are discussed in Section 3.4.

### 3.1.4. Summary

Sources included in the review identify a number of arguments for pay transparency measures, as well as some arguments against their implementation. The advantages most commonly identified in the literature relate to the potential for pay transparency measures to help address unjustified or discriminatory wage gaps, particularly in relation to the gender pay gap. This is weighed against disadvantages such as the administrative cost for employers and concerns about confidentiality. One source points to a trade-off between the effectiveness of pay transparency measures and their costs for companies (pay reporting and pay audits having a comparatively large impact, but imposing a heavy burden on employers) (European Commission, 2014).

Many of the arguments used both for and against (binding) pay transparency measures lack a strong evidence base. Relatively few studies evaluate the effect of pay transparency measures implemented in EU Member States on the gender pay gap and associated outcomes, although promising results are identified in countries such as Sweden (referenced in European Commission, 2017<sup>11</sup>), Finland (Aumayr-Pintar, 2018) and Denmark (Bennedsen et al., 2018). Although there is evidence that pay transparency can help to reduce the gender pay gap, further research is required to understand the extent to which and how this happens, as well as factors that enhance or hamper the effect.

## 3.2. Barriers to and Facilitators of (Binding) Pay Transparency Measures in the Identified Literature

The literature reviewed for this analysis mentions barriers and facilitators to the effective implementation of pay transparency measures. Some of the factors correspond with the arguments for and against pay transparency measures outlined in the previous section: the 'right to ask', awareness, monitoring and enforcement, financial costs, collective bargaining and challenges for employers.

### 3.2.1. Overcoming the barrier of pay secrecy through the 'right to ask'

#### Culture of pay secrecy

Barriers impeding the effectiveness of pay transparency measures include a strong **culture of pay secrecy**. This tends to be more common in sectors where union representation is limited. According to Rosenfeld (2017), non-unionised workers and workers in the private sector report more frequently that their employers actively discourage discussion of pay. There are several reasons employers may not want their employees to openly discuss pay, including concerns around protecting employees' privacy, as well as aiming to prevent conflict amongst colleagues (e.g. staff feeling upset upon learning how much their co-workers earn) (Trotter et al., 2017; Smit et al., 2019). However, employees cannot take action to rectify discrimination (e.g. take their employer to a tribunal) unless they are able to place their own pay into context, comparing it to pay received by comparable co-workers (Trotter et al., 2017). As

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<sup>11</sup> The source cites a report from the Swedish Equality Ombudsman but does not provide a full reference.

such a culture of pay secrecy constitutes a barrier, especially considering that women are less likely to ask for information about their pay (European Commission, 2017c).

Some trends have been identified that alleviate people's reluctance to discuss pay (Trotter et al., 2017). One source points to generational differences, noting greater willingness to discuss pay amongst the Millennial generation compared to older generations (Trotter et al., 2017). The emergence of **new technologies may also encourage and facilitate the disclosure of pay information** (Trotter et al., 2017). It is becoming increasingly common for employees to share pay information on the Internet, such as Salary.com, Payscale.com, and Salaryscout.com (Trotter et al., 2017). On the website Glassdoor, companies may post salary information to help employees make informed choices (Trotter et al., 2017). These trends help reduce pay secrecy, aiding the success of pay transparency measures.

### A 'right to ask'

In addition, **the 'right to ask' can contribute to eliminating pay secrecy**. McGregor et al. (2017) suggests that the 'right to ask' is 'a morally pragmatic way of allowing women to know whether or not they are receiving equal pay'. While the authors acknowledge that this would not eliminate the gender pay gap, it would help address some of the factors that have been contributing to the gender pay gap. This includes the suggestion that 'women don't ask'. This is especially important considering that the McGregor et al. (2017) study shows that even in organisations where transparency measures are in place, some women still do not know whether they are receiving equal pay. McGregor et al. (2017) argue that this 'softer measure' could help to compliment pay equity audits by bringing the issue more frequently to employers' attention, and therefore contributing to organisational change. This could be an especially helpful facilitator in professions where gaps between men and women – in terms of education, occupational choice and experience – have been closing, and yet, a wage gap remains, as is for example the case in the field of engineering (McGregor et al., 2017). This point is further illustrated in Kim's (2015) comparison of US States with and without secrecy law. Kim (2015) argues that although pay transparency laws do not increase wages overall, they do help increase the wages of women and reduce the gender pay gap.

### 3.2.2. Awareness about existing measures

#### Awareness

To ensure success of any pay transparency measures, it is important that **both employers and employees are aware of the existing measures**. Employees will not be able to execute the 'right to ask' if they are not aware that such measures exist (Aumayr-Pintar, 2018). According to Trotter et al. (2017), the 1935 National Labor Relations Act in the US was not very successful because people did not know about it, unless a specific complaint triggered the procedure.

#### Interest and engagement

Milner (2019) makes a similar point in an analysis of pay transparency measures in the UK. Milner (2019) argues that although the effectiveness of the non-binding pay-transparency measures enacted in the UK was disappointing, it – in combination with the growing number of litigation cases going through the courts – served the purpose of **bringing the issue to the forefront of the Government's agenda**. This paved the way for the introduction of new processes, namely statutory reporting introduced in 2010, as well as a change in attitudes amongst the business community and the general public towards gender equality (Milner, 2019). In general, Milner (2019) points out that the policy environment and stakeholders make a difference – the author believes that the increase in the number of women in the British Parliament contributed to the decision to introduce mandatory rather than voluntary reporting in the UK.

## Knowledge and understanding

Aumayr-Pintar (2018) argued that **employers are more likely to comply if there is awareness that a gender pay gap is indeed present**. Accordingly, for employers, this means not only being aware about the existence of binding pay-transparency measures, but also having knowledge of how to comply with them, and what to do if breaches occur (McGregor et al., 2017). As such, employers should receive training, including a code of conduct or practices and an action plan (McGregor et al., 2017). As pointed out by Aymayr-Pintar (2018), the success of any existing measures may depend on whether employers see them as a meaningful process rather than a tick-box exercise. However, there is no guarantee that employers will take any actions voluntarily even if they recognise and acknowledge the gender pay gap and the role of pay transparency measures in addressing it.

### 3.2.3. Monitoring and enforcement

#### Penalties and repercussions

An important factor in the successful implementation of pay transparency measures discussed in the literature is **the existence of strong monitoring and enforcement agencies** (Milner, 2019). Although compliance with pay reporting duties in the UK is high (Francis-Devine and Pyper, 2020), one source points to possible issues with enforcing action for non-compliant organisations due to funding cuts to the EHRC that have hindered its ability to successfully carry out monitoring duties (Milner, 2019). Another source highlights ambiguity in the legal basis for the EHRC prosecuting non-compliant companies (Francis-Devine and Pyper, 2020). In 2018, the EHRC introduced new measures to enhance compliance (outlined in Francis-Devine and Pyper, 2020): non-compliant employers receive a letter explaining that an EHRC investigation has been launched, and providing terms of reference for the investigation. Employers are given 14 days to respond, after which the EHRC gathers and analyses relevant evidence, and writes a report. If the employer refuses to comply with recommendations, the EHRC issues an unlawful act notice, requiring the employer to prepare an action plan. If the employer still fails to comply, court proceedings are initiated. According to Milner (2019), in 2017/2018 all non-compliant employers provided data after investigation proceedings were initiated, without the EHRC having to resort to prosecution. The EHRC also announced in 2018 that it would investigate 'statistically implausible' data in order to identify and rectify inaccuracies in gender pay gap reporting (Milner, 2019).

### 3.2.4. Financial costs

**Financial costs** may influence the degree to which employees, employers and other actors respond to information revealed via pay transparency measures, and therefore the effectiveness of these measures. Any fees associated with employees or social partners bringing claims against employers can act as a barrier and hinder any measure's effectiveness (Milner, 2019). Similarly, large **administrative costs for business** in reporting on the gender pay gap may affect their compliance (Veldman, 2017; Aumayr-Pintar, 2018). One means of addressing this issue is to make pay reports or audits mandatory only in certain circumstances, such as in the UK where employers may be required to carry out a pay audit in cases where a successful discrimination case has been brought at a tribunal (Milner, 2019).

### 3.2.5. Unionisation/collective bargaining

**Unions can contribute to the reduction of the gender pay gap** (Kim, 2013; Ramachandran, 2011; Baker et al., 2019; Castilla, 2015). According to the Baker et al. (2019) analysis of selected pay transparency measures in Canada and their effectiveness in universities, '*reduction in the gender gap is*

primarily in universities where faculty are unionized'. Accordingly, if measures to encourage labour unions and structures that enable them – and especially female membership – were to accompany pay transparency measures, that could serve as an enabling factor. However, according to Veldman (2017), effectiveness also depends on whether social partners prioritise the issue. A report by the European Commission (2014) estimated that if social partners were required to consider equal pay as a separate issue in collective bargaining, it could reduce the gender pay gap by up to 0.33 %, and lead to economic effects of around €17 billion EU-wide, or about €1 billion per year.

### 3.2.6. Challenges for employers

#### Company size and resource

Employers may also experience barriers in terms of their ability to comply, which can further affect the effectiveness of pay transparency measures. According to Aumayr-Pintar (2018), there is some evidence that **company size** matters in an employer’s ability to comply. Larger organisations seem to be more likely to comply. Veldman (2017) points out that the additional reporting and audit requirements may place **an administrative and financial burden on employers**. Employers are also more likely to comply if reporting requirements are reasonably simple (Aumayr-Pintar, 2018).

#### Follow-up actions

Beyond complying with reporting and/or auditing requirements, employers may face challenges in responding to and addressing any unjustified wage gaps that have been identified. Veldman (2017) points to the importance of employers **developing an action plan** in order to avoid pay reports becoming a mere formality, and failing to have an impact. This can be mitigated by allowing individual employees and/or equality bodies to have access to reports, and giving employers and employee representatives more guidance on how to proceed if pay differentials are found (Veldman, 2017). These could include discriminatory differences in pay for work of equal value, as well as differences in pay due to the structure of the workforce, division of roles, career choices and opportunities, and other factors that contribute to the gender pay gap and are more difficult and complex to address. Part of this difficulty may be that little is known about what employer actions are effective to address the gender pay gap and gender inequalities in the workplace (Table 1).

Table 1: Evidence level of actions available to employers to close the gender pay gap and improve gender equality

Evidence level	Actions for employers
<b>Effective actions</b> (tested empirically and found to have a positive impact)	<ol style="list-style-type: none"> <li>1) Include multiple women in shortlists for recruitment and promotions</li> <li>2) Use skill-based assessment tasks in recruitment</li> <li>3) Use structured interviews for recruitment and promotions</li> <li>4) Encourage salary negotiation by showing salary ranges</li> <li>5) Introduce transparency to promotion, pay and reward processes</li> <li>6) Appoint diversity managers and/or diversity task forces</li> </ol>
<b>Promising actions</b> (require further evidence on effectiveness and implementation)	<ol style="list-style-type: none"> <li>7) Improve workplace flexibility for men and women</li> <li>8) Encourage the uptake of Shared Parental Leave</li> <li>9) Recruit people returning to work after a career break</li> <li>10) Offer mentoring and sponsorship</li> <li>11) Offer networking programmes</li> </ol>

	12) Set internal targets
<b>Actions with mixed results</b> (found to have a positive impact in some studies and a negative impact in others)	13) Unconscious bias training 14) Diversity training 15) Leadership development training 16) Performance self-assessments 17) Diverse selection panels

Source: BIT (2017)

### 3.2.7. Summary

This section has highlighted the barriers to – and facilitators of – implementing pay transparency measures, as identified in the literature. The literature points to the importance of employees, employers and other actors being aware of pay transparency measures, and understanding their purpose and rationale (i.e. recognising the gender pay gap). The importance of employers having the understanding and resources to comply with pay transparency measures is a factor highlighted in the literature, as well as making sure that employers know how to respond to any wage gaps that are identified. Sources identified as part of the review point to the need to effectively enforce pay transparency measures and to the role of unions in facilitating their effective implementation.

## 3.3. The State of Play at the EU and National Level with regard to (Binding) Pay Transparency Measures

### 3.3.1. Implementation of the Commission Recommendation thus far

Following the Commission Recommendation on strengthening the principle of equal pay, a comprehensive legal analysis of the situation in the EU Member States, Iceland, Liechtenstein and Norway was carried out in 2017. The main findings of the analysis showed that 10 out of 31 countries (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Norway and Sweden) implemented at least one core pay transparency measure (Veldman, 2017). Among these 10 countries:

- three implemented an employee's right to obtain pay information (Finland, Ireland and Norway);
- five implemented a pay reporting duty (Austria, Belgium, Denmark, France and Italy);
- three implemented a pay auditing duty (Finland, France and Sweden);
- five implemented collective bargaining measures (Belgium, Finland, France, Germany and Sweden).

By 2017, 19 EU Member States had not adopted any transparency measure that was recognised as a recommended core measure on pay transparency in view of strengthening the principle of equal pay between men and women (Veldman, 2017). The EC acknowledged the challenges with the implementation and a non-binding character of the Recommendation and concluded that *'the lack of visible progress in combating pay discrimination, as well as the persisting gender pay gap and the limited follow-up to the Recommendation suggest a possible need for further targeted measures at EU level'* (European Commission, 2017c).

The EC issued the EU Action Plan 2017–2019: Tackling the gender pay gap and committed to assess the possibility of amending the Recast Directive and making some or all of the measures on pay transparency binding (European Commission, 2017d). The Action Plan also proposed reinforcing policies including actions to combat gender segregation in occupations and sectors, work-life balance policies, initiatives related to better valorisation of women’s skills, awareness-raising activities and initiatives focused on enhancing social partnerships to tackle the gender pay gap.

The most recent assessment of the state of play was carried out in 2018 and showed a similar picture (see Table 2). Examples of the instruments recommended by the EC and implemented in selected countries are presented below.

Table 2: Overview of state of play of pay transparency measures

	Implemented	Changed legislation	Planned
Employees’ right to request pay information	FI, IE, NO	DE (2017), LT (2017)	
Employers’ duty to report in average gender pay levels	AT (2011, in full force since 2014), BE (2014), FR, DK, IT	DE (2017), LT (2017), UK (2017)	NL (draft law in 2014), IT (draft law from 2015)
Employers’ duty to conduct an audit on pay	FI (2005, amended in 2014), FR, SE (1994, revised in 2009)	SE (2017 revised)	IE (2016), IT (draft law from 2015)
Promoting collective bargaining on equal pay	‘Strong’ incentives: BE, FR ‘Soft’ incentives: FI, DE, SE	-	-
None of the four pay transparency measures implemented or considered to date	BG, CY, CZ, EE, EL, ES, HU, HR, MT, LV, LU, PT, RO, PL, SI, SK		

Note: In Spain, tripartite negotiations about the possible introduction of pay auditing started in December 2017

Source: Aumayr-Pintar (2018)

Box 2: Examples of instruments in selected countries

**Austria** requires companies with more than 150 employees to provide pay reports. The reports must contain average or median wages, disaggregated by gender, either by company job classifications or by the job classifications used in the collective agreements. The reports must be shared with the chair of the works councils and – where such a body does not exist – must be made accessible for the employees in another way. The pay reports are not publicly available.

**Denmark** requires firms with at least 35 employees (and at least 10 employees of each gender employed in the same job category), either to produce annual gender-segregated wage statistics or to enter into an agreement with staff to draw up a pay report or pay audit every three years.

**Finland** requires companies with more than 30 employees to carry out a pay audit every two to three years. This includes gender-segregated pay data across different ‘comparable’ groups of workers. Follow-up action is mandatory.

**France** requires employers and trade unions to discuss specific topics (including gender equality) in collective agreement negotiations. Firms have to compile a report and negotiate a company-level agreement or provide an action plan on gender equality.

**Sweden** has a mandatory mapping of wages for all employers, reported annually. The mapping should include an analysis of policies on wages and other employment conditions. For workplaces with at least 10 staff, the analysis has to be documented ('pay audits'). Firms with more than 25 employees have to make a wage action plan. Follow-up action is mandatory.

**The UK** requires private-sector organisations with a minimum of 250 employees to produce gender-disaggregated pay reports. Businesses could face fines for failing to report on time, if a case were to reach the courts.

Sources: Aumayr-Pintar (2018), European Commission (2014), Milner (2019), Francis-Devine and Pyper (2020)

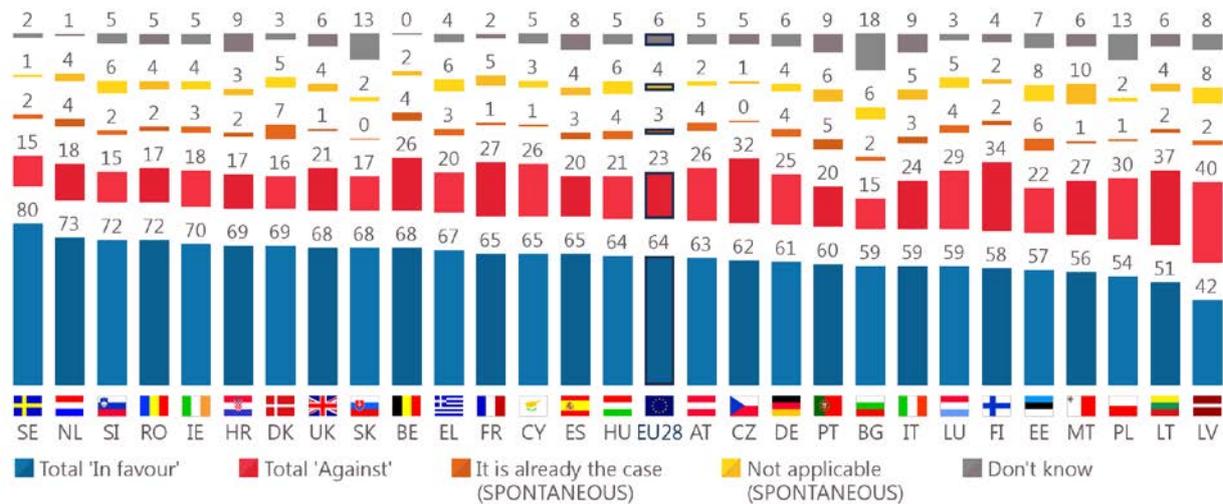
These examples illustrate different approaches implemented by Member States that adopted some of the Commission Recommendation. In particular, they highlight practices that differentiate requirements for employers depending on their characteristics (e.g. size, private vs public sector) and the frequency of reporting.

### 3.3.2. Public opinion views on gender pay gap and pay transparency

A special Eurobarometer survey explored citizens' opinions about gender equality, with a particular focus on gender equality in politics and at work, the gender pay gap, both in general and in companies where respondents work (European Commission, 2017b). The results show that:

- the majority (62 %) of employees were aware of the salary of their immediate colleagues;
- just about half of employees (51 %) thought men and women in equivalent positions in their company or organisation were paid the same, 33 % thought women were paid less (33 %), while 3 % thought they were paid more;
- over half of employees (55 %) said that there was sufficient attention given to equal pay for men and women for equal work in their company or organisation;
- the majority of employees (64 %) were in favour of the publication of average wages by job type and gender at their company (see Figure 2);
- if they learned about a gender pay gap in their company, employees were most likely to talk about it with their boss (39 %), to talk about it with their colleagues (35 %) or to contact trade unions (26 %). Only 16 % said they would not do anything (European Commission, 2017c).

Figure 2: Would you be in favour or against publishing the average wages per job type earned in the organisation or company where you work by each sex? (N=12,249)



Source: European Commission (2017c)

In 2019, the EC carried out a public consultation to gather input from citizens, public authorities, social partners and other stakeholders on the ways in which the Recast Directive and the Commission Recommendation on strengthening the principle of equal pay could be better implemented and enforced (European Commission, 2019b). The questionnaire was completed by 386 individuals or organisations and results showed that:

- more than 70 % of respondents agreed or somewhat agreed that the EU intervention has increased public debate about the need to ensure pay transparency and to introduce effective measures;
- more than 50 % of respondents agreed that the EU intervention has increased attention on the need to develop gender neutral job-classification and job-evaluation systems, and has given rise to pay transparency being included within wider policy measures;
- more than 60 % of respondents agreed or somewhat agreed that progress has been made in facilitating the enforcement of the right to equal pay and in protecting workers who claim their right to equal pay (54 %). Notably, businesses and companies had more positive views on those issues compared to other groups of respondents.

Barriers to effective implementation of the principle of equal pay for women and men reported by respondents included: a lack of dissuasive penalties for employers, lack of awareness among employees about equal pay rules and lack of effective application of job evaluation systems (European Commission, 2019b).

In terms of benefits and costs of pay transparency measures, more than 60 % of respondents thought that greater pay transparency was very important or rather important to reducing the gender pay gap and to improving the public image of the employer. Two thirds of respondents (68 %) thought that the benefits of pay transparency measures exceeded any implementation costs. According to the report, this view was more concentrated among responding EU citizens (82 %), NGOs and trade unions (92 %), while only between 13 % and 24 % of responding businesses and companies shared the same positive outlook on the subject (European Commission, 2019b).

### 3.4. Positions of EU Stakeholders on (Binding) Pay Transparency Measures

#### 3.4.1. Overview

When considering findings on the positions of EU stakeholders on the binding pay-transparency measures, a few issues should be kept in mind. Firstly, only key stakeholders’ views are outlined here – these include main EU institutions and agencies with the remit in employment, gender equality and non-discrimination issues. Secondly, rather than exploring any changes over time in perspectives on the binding pay-transparency measures, only the most recent positions are captured. Thirdly, the most recent reports or publications issued by these stakeholders are used to outline findings on binding pay-transparency measures supported by the institution or organisation in question. These studies do not necessarily represent official positions of the stakeholders involved. These distinctions are noted carefully in the ensuing text.

Table 3 illustrates the positions of key EU stakeholders and the opinions within different groups and between individual institutions and organisations.

Table 3: Summary of key EU stakeholders’ positions on binding pay-transparency measures

Stakeholder group	Favour introducing binding measures	Support better implementation of the 2014 recommendations	Oppose introducing binding measures
EU institutions	EP EC	Council (EPCSO) EESC EIGE CoR Eurofound	
EU social partners	ETUC EPSU	ETUCE	
		BUSINESSEUROPE SMEunited CEEP	
Civil society organisations	EWL		
International organisations		EPIC	

Source: Authors’ elaboration

#### 3.4.2. Positions of key EU institutions, bodies and agencies

Among the key EU institutions, the EP and the EC explicitly favour introducing binding pay-transparency measures. However, the majority of other institutions – including the Council, relevant committees and agencies – either explicitly stated or supplied research evidence indicating the need for better implementation and enforcement of existing and new pay transparency measures. Individual positions of these stakeholders are presented below.

- EP** The EP’s own initiative report considered wage transparency as one of indispensable measures to foster equal treatment (European Parliament, 2014). It further encouraged the Member States to implement the Commission Recommendation on strengthening the principle of equal pay and promoting wage transparency, and it called on the EC to include the transparency measures in a new legislative proposal replacing the ‘Recast Directive’ (European Parliament, 2014). **The EP seemed to favour introducing binding pay-transparency measures.**
- EC** The new President of the EC **supported binding pay-transparency measures** and committed to propose them in 2020 (von der Leyen, 2019). The new Commissioner for Gender Equality planned to put forward a new European Gender Strategy, which would contain pay transparency and measures to ensure equal work pay for work of equal value (Dalli, 2019; Dalli, 2020). **The EC favours introducing binding pay-transparency measures.**
- Council** The Council (2019) called on the Member States to take effective measures to close the gender pay gap, including measures to combat pay discrimination, including by promoting pay transparency. It further encouraged the Member States to improve existing measures – or introduce new ones – to improve pay transparency, drawing on the Commission Recommendation on strengthening the principle of equal pay. **No official position on binding pay-transparency measures was identified.**
- EESC** The Committee believed that further efforts are required to address the persistent gender pay gap (EESC, 2018a). It further urged the Member States and the EU to take appropriate measures to step up implementation of the Commission Recommendation on strengthening the principle of equal pay. The Committee supported the Commission’s proposal<sup>12</sup> for pay transparency and pay audits to be introduced in sectors and businesses (EESC, 2018b). **No official position on binding pay-transparency measures was identified.**
- CoR** The Committee recognised the need for equal pay for equal work for people in non-standard employment, and that transparency is useful for workers insofar as it reduces asymmetries between the two contracting parties (CoR, 2018). **No official position on binding pay-transparency measures was identified.**
- EIGE** The research note found that pay transparency measures more effective in tackling the gender pay gap if data are reported with disaggregation by gender and employment position (EIGE, 2019). The note also argued that pay transparency legislation should target a broad range of companies and proposed measures (wage gap calculators) to support more effective implementation of pay transparency legislation. **No official position on binding pay-transparency measures was identified.**
- Eurofound** The research reports found that to be effective, pay reports and audits need to be sufficiently detailed, discussed with employee representatives and scrutinised (Eurofound, 2018). According to the report, follow-up actions were more likely to take place when they were mandatory, or when substantial pay gaps were uncovered. The report further stated that *‘[s]oft measures to accompany enforceable mandatory*

<sup>12</sup> The EC committed to assess the possibility of amending the Recast Directive and making some or all of the measures on pay transparency binding (see: European Commission, 2017d).

*requirements probably work best* (Eurofound, 2018). **No official position on binding pay-transparency measures was identified.**

### 3.4.3. Positions of EU social partners

The positions of the EU social partners are notably more contrasting. On the one hand, the employer organisations speak in a unified voice against any further actions in this regard, specifically against any legally binding measures. On the other hand, trade union associations either did not formulate their views on binding pay-transparency measures, or – in the case of some organisations (ETUC, EPSU) – support strengthening the current framework and call for introducing binding measures. Detailed positions of these stakeholders are presented below.

**ETUC** The Confederation called for a Gender Pay Transparency Directive (ETUC, 2019). According to their press release, this new directive should include:

- obligatory, annual gender pay audits for employers with more than 10 staff;
- fines for firms with more than 10 staff who fail to produce a gender pay report;
- the right of workers to request the pay data of colleagues and information on gender pay within their companies;
- a ban on pay secrecy clauses in contracts and a new requirement for employers to provide pay scales with job advertisements;
- support for collective bargaining (ETUC, 2019).

**The ETUC favours introducing binding pay-transparency measures.**

**ETUCE** The Committee supported the active role that trade unions can play in negotiating pay transparency agreements at regional, national and European level (ETUCE, 2019). **No official position on binding pay-transparency measures was identified.**

**EPSU** The Union argued that the Commission Recommendation on strengthening the principle of equal pay provided a first tool to reduce pay inequalities if supported by the employers in its implementation (EPSU, 2014). In 2018, EPSU’s Executive Committee called on the Commission to develop legislation to ensure pay transparency (2018). The organisation believes that legislation remains crucial to close the gender and pensions gap (EPSU, 2019). **The EPSU favours introducing binding pay-transparency measures.**

**BUSINESS - EUROPE** The organisation expressed *‘deep concerns about the suggested reopening of the Recast Directive on gender equality and any further measures at EU level leading to disclose individual pay’* (BUSINESSEUROPE, 2018). While being committed to the principle of gender-neutral pay systems and tackling the gender pay gap, the organisation said the equal pay principle was adequately embedded in EU and national legislations and that these should be better enforced. Business Europe further stated that *‘[c]losing the gap requires a cultural shift, rather than a legislative effort’* (BUSINESSEUROPE, 2018)<sup>13</sup>. **BUSINESSEUROPE opposes introducing binding measures.**

<sup>13</sup> BUSINESSEUROPE was highly critical of the Commission Recommendation on strengthening the principle of equal pay, and warned that it would increase administrative burdens and pose risks linked to personal data disclosure, without addressing the real causes of the gender pay gap (see BUSINESSEUROPE, 2015).

**SMEunited** The organisation considered that existing measures at EU level are sufficient, and saw no need for further legislative action (SMEunited, 2019). Instead, focus should be placed on the implementation of existing rules with the close involvement of social partners. **SMEunited opposes introducing binding measures.**

**CEEP** The Centre welcomed the Commission's choice to use recommendations rather than a legislative proposal (CEEP, 2014). While agreeing with the pay transparency principle, the organisation emphasised that policies on wage setting should remain a competence of the Member States and national social partners, and said it '*would not be possible or appropriate to try to regulate this at EU level*' (CEEP, 2014). **CEEP opposes introducing binding measures.**

#### 3.4.4. Positions of EU civil society organisations

The European Women's Lobby is the largest umbrella organisation of women's associations in the EU, with more than 2,000 members working to promote women's rights and equality between women and men. The EWL supports binding pay-transparency measures.

**EWL** The Lobby proposed a set of measures for future EU action and legislation in relation to the equal pay for equal work principle (EWL, 2019). In relation to pay transparency, it called for improving the Recast Directive and making the Commission Recommendation on strengthening the principle of equal pay into a legally binding measure. **The EWL favours introducing binding pay-transparency measures.**

#### 3.4.5. Positions of international organisations

The most notable position on pay transparency measures was expressed by the Equal Pay International Coalition (EPIC) comprising the ILO, UN Women and OECD, which support greater pay transparency but stop short of calling for these measures to be binding.

**EPIC** The Coalition stated that the lack of pay transparency plays an important role in pay differentials between men and women, and that increased pay transparency can help to reduce gender pay gaps (EPIC, 2018). It also noted that further progress can be made by promoting equal remuneration for work of equal value through wage transparency, including gender-neutral job evaluation, training and awareness-raising. It called on governments to introduce pay transparency measures. **No official position on binding pay-transparency measures was identified.**

#### 3.4.6. Summary

The opinions on binding pay-transparency measures among the key EU stakeholders represent the full spectrum, from those who fully support introducing them, to those who passionately oppose them. In the first group are some key EU institutions (the EP and the EC), trade union organisations (ETUC, EPSU) and the women's civil society organisations (EWL). In the latter group are the employer organisations (BUSINESSEUROPE, SMEunited, CEEP).

The majority of remaining stakeholders (including the Council of the EU, relevant EU committees and agencies, some trade union associations and international organisations) seem to emphasise the need for better implementation and enforcement of existing and new pay transparency measures, and stop short of endorsing legally binding measures.

## 4. CONCLUSION

The debate on whether to implement binding pay-transparency measures contains a number of arguments in support, as well as some arguments against. The main advantages relate to the potential for pay transparency measures to help reduce unjustified or discriminatory wage gaps. The main counter-arguments include a potentially high administrative cost for employers, and concerns about sensitivity and confidentiality of pay information. However, most arguments used for and against (binding) pay transparency measures lack a strong evidence base. Relatively few studies evaluate the effects that pay transparency measures implemented in the EU Member States have had on the gender pay gap and associated outcomes. Further research is required to understand the extent to which – and how – pay transparency can help reduce the gender pay gap.

The literature points to the importance of employees, employers and other actors being aware of pay transparency measures and understanding their purpose and rationale (i.e. recognising the gender pay gap). The importance of employers having the understanding and resources to comply with pay transparency measures – and the knowledge of how to respond to any wage gaps identified – are factors that are highlighted in the literature. Sources identified as part of the review point to the need to effectively enforce pay transparency measures and to the role of unions in facilitating their effective implementation.

So far, the majority of the EU Member States have failed to adopt any transparency measures promoted by the Commission Recommendation. The non-binding character of this instrument means that there are no sanctions for failing to take up the recommendations.

Opinions on introducing binding pay-transparency measures among the key EU stakeholders vary largely from those who fully support introducing them (representing different groups of stakeholders: the EP, EC, ETUC, EPSU and EWL), to those who passionately oppose them (representing primarily employer associations: BUSINESSEUROPE, SMEunited and CEEP).

The Special Eurobarometer on gender equality showed that the majority of employees were in favour of the publication of average wages by job type and gender at their company. Most of the employees reported they would do something upon learning about the gender pay gap in their workplace: they would talk about it with their boss or colleagues, or they would contact trade unions.

Against this background, the EC intends to prepare a legislative proposal for binding pay-transparency measures that includes pay transparency and measures to ensure equal work pay for work of equal value in a new European Gender Strategy. It will be important that:

- (i) such proposals seek the right balance between advancing the principle of equal pay and introducing additional administrative requirements;
- (ii) any binding measures are accompanied by tools to support their implementation;
- (iii) effective monitoring and enforcement mechanisms are in place to ensure compliance.

## REFERENCES

### Legislation and official documents

- Commission Communication of 7 June 2000: Towards a Community framework strategy on gender equality (2001–2005)' [COM(2000) 335 final].
- Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions – A Roadmap for equality between women and men 2006–2010 [COM(2006) 92 final].
- Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Strategy for equality between women and men 2010–2015 SEC(2010) 1079 SEC(2010) 1080 [COM(2010) 491 final].
- Commission Recommendation of 7 March 2014 on strengthening the principle of equal pay between men and women through transparency, C(2014) 1405 final, 2014/124/EU, OJ L 69, 8.3.2014, pp. 112–116. As of 30/01/ 2020:  
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014H0124&from=EN>
- Directive 2006/54/EC on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation (recast), OJ L 204, of 26 July 2006.
- Directive 75/117/EEC on the approximation of the laws of the Member States, relating to the application of the principle of equal pay for men and women, OJ L 45, of 19 February 1975.
- Treaty on the Functioning of the European Union (consolidated version). OJ 115, of 9 May 2008, pp. 117–118.

### EU publications

- EIGE. 'Poverty, Gender and Intersecting Inequalities – Review of the implementation of area A: Women and poverty of the Beijing Platform for Action', Publications Office of the European Union, Luxembourg, 2016.
- EIGE. 'Economic Benefits of Gender Equality in the European Union How closing the gender gaps in labour market activity and pay leads to economic growth', Publications Office of the European Union, Luxembourg, 2017.
- EIGE. 'Tackling the gender pay gap: not without a better work-life balance', Luxembourg: Publications Office of the European Union, 2019.
- EIGE. 'Glossary & Thesaurus: gender pay gap', 2020. As of 03/01/2020:  
<https://eige.europa.eu/thesaurus/terms/1196>
- European Commission. 'Causes of unequal pay between men and women', n.d. As of 16/01/2020:  
[https://ec.europa.eu/info/policies/justice-and-fundamental-rights/gender-equality/equal-pay/causes-unequal-pay-between-men-and-women\\_en](https://ec.europa.eu/info/policies/justice-and-fundamental-rights/gender-equality/equal-pay/causes-unequal-pay-between-men-and-women_en)
- European Commission. Report from the Commission to the European Parliament and the Council. Report on the application of Directive 2006/54/EC of the European Parliament and of the Council of 5 July 2006 on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation (recast). /\* COM/2013/0861 final \*/ Luxembourg: Publications Office of the European Union, 2013.

- European Commission. The enforcement of the principle of equal pay for equal work or work of equal value. A legal analysis of the situation in the EU Member States, Iceland, Liechtenstein and Norway. Directorate-General for Justice and Consumers. European network of legal experts in gender equality and non-discrimination. Luxembourg: Publications Office of the European Union, 2017a.
- European Commission. Gender Equality 2017. Special Eurobarometer 465. 2017b.
- European Commission. Report on the implementation of Commission Recommendation on strengthening the principle of equal pay between men and women through transparency. Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee. Brussels, 20.11.2017 COM(2017) 671 final. 2017c.
- European Commission. Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee. EU Action Plan 2017–2019. Tackling the gender pay gap. Brussels, 20.11.2017 COM(2017) 678 final. 2017d.
- European Commission. Report on equality between men and women in the EU. Luxembourg: Publications Office of the European Union, 2018.
- European Commission. Employment and Social Developments in Europe Sustainable growth for all: choices for the future of Social Europe. Luxembourg, European Commission, 2019a.
- European Commission. Evaluation of the EU legal framework on 'equal pay for equal work or work of equal value.' Summary report – public consultation Spring 2019. 2019b.
- Eurostat. 'Gender pay gap statistics'. 2019. As of 24/01/2020: [https://ec.europa.eu/eurostat/statistics-explained/index.php/Gender\\_pay\\_gap\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php/Gender_pay_gap_statistics)
- OECD. 'Gender wage gap (indicator)'. 2020. doi:10.1787/7cee77aa-en.

### Academic articles

- Anderson, D.J., Binder, M. and Krause, K. 'The motherhood wage penalty: Which mothers pay it and why?' *American Economic Review*, 92(2), 2002, pp. 354–358.
- BIT. 'Reducing the gender pay gap and improving gender equality in organisations: Evidence-based actions for employers', Government Equalities Office, 2017. As of 03/01/2020: [https://www.bi.team/wp-content/uploads/2018/06/GEO\\_BIT\\_INSIGHT\\_A4\\_WEB.pdf](https://www.bi.team/wp-content/uploads/2018/06/GEO_BIT_INSIGHT_A4_WEB.pdf)
- Booth A., Burton, J. and Mumford, K. 'The position of women in UK academic economics', *The Economic Journal*, Vol. 110, 2003, pp. 312–333.
- Centre for Reviews and Dissemination. 'Systematic Reviews: CRD's guidance for undertaking reviews in health care,' 2009.
- Costa Dias, M., Joyce, R. and Parodi, F. 'The gender pay gap, children and experience in work', IFS Working Paper W18/02, 2018. As of 30/01/2020: <https://www.ifs.org.uk/publications/10356>
- Gow, L. and Middlemiss, S. 'Equal Pay Legislation and Its Impact on the Gender Pay Gap', *International Journal of Discrimination and the Law*, Vol. 11, Issue 4, 2012, pp. 164–186.
- Higgins, J.P.T. and Green, S. (eds) *Cochrane Handbook for Systematic Reviews of Interventions, Version 5.1.0* [updated March 2011], The Cochrane Collaboration, 2011.
- Leythienne, D. and Ronkowski, P. 'A decomposition of the unadjusted gender pay gap using Structure of Earnings Survey data', Luxembourg: Publications Office of the European Union, 2018.

- Mandel, H. and Shalev, M. 'How Welfare States Shape the Gender Pay Gap: A Theoretical and Comparative Analysis', *Social Forces*, vol. 87, no. 4, 2009, pp. 1873–1911. *JSTOR*, As of 30/01/2020: [www.jstor.org/stable/40345002](http://www.jstor.org/stable/40345002)
- O'Reilly, J., Smith, M., Deakin, S. and Burchell, B. 'Equal Pay as a Moving Target: International perspectives on forty-years of addressing the gender pay gap', *Cambridge Journal of Economics*, Volume 39, Issue 2, March 2015, pp. 299–317.
- Perez, C.C. *Invisible Women: Exposing Data Bias in a World Designed for Men*. Random House, 2019.
- Peruzzi, M. 'Contradictions and misalignments in the EU approach towards the gender pay gap', *Cambridge Journal of Economics*, Volume 39, Issue 2, March 2015, pp. 441–465.
- Rubery, J., Grimshaw, D. and Figueiredo, H. 'How to close the gender pay gap in Europe: towards the gender mainstreaming of pay policy', *Industrial Relations Journal* 36.3, 2005, pp. 184–213.
- Rubery, J. 'Why is Women's Work Low-Paid? Establishing a framework for understanding the causes of low pay among professions traditionally dominated by women', Oxfam Discussion Papers, Oxford, 2017.
- Smith, M. and Villa, P. 'The ever-declining role of gender equality in the European Employment Strategy', *Industrial Relations Journal*, 41(6), 2010, pp. 526–543.
- Veldman, A. 'Pay Transparency in the EU. A legal analysis of the situation in the EU Member States, Iceland, Liechtenstein and Norway,' Brussels: European Commission, 2017.

### Sources included in the REA

- 1) Aumayr-Pintar, C. 'Pay Transparency in Europe: First Experiences with Gender Pay Reports and Audits in Four Member States', Publications Office of the European Union, Luxembourg, 2018.
- 2) Baker, M., Halberstam, Y., Kroft, K., Mas, A. and Messacar, D. 'Pay Transparency and the Gender Gap', (No. w25834). National Bureau of Economic Research, 2019.
- 3) Bennedsen, M., Simintzi, E., Tsoutsoura, M. and Wolfenzon, D. 'Do Firms Respond to Gender Pay Gap Transparency?' NBER Working Papers: 25435, National Bureau of Economic Research, Inc, 2019.
- 4) Canales, B. 'Closing the Federal Gender Pay Gap through Wage Transparency', *Hous. L. Rev.*, 55(4), 2018, p. 969. As of 30/01/2020: <https://houstonlawreview.org/article/7048>
- 5) Castilla, E.J. 'Accounting for the gap: A firm study manipulating organizational accountability and transparency in pay decisions', *Organization Science*, 26(2), 2015, pp. 311–333.
- 6) Cherradi, S. 'Pay Transparency Laws: Vogue, Mirage, Miracle, Untested Theory, Needed Remedy, Conspiracy, or Cynical Plan?' *EEO Insight*, 8(1), 2016, pp. 7–44.
- 7) Cullen, Z. and Pakzad-Hurson, B. 'Equilibrium Effects of Pay Transparency in a Simple Labor Market', Mimeo, 2018.
- 8) Estlund, C. 'Extending the case for workplace transparency to information about pay', *UC Irvine L. Rev.*, 4, 2014, p. 781.
- 9) Eurofound. 'Developments in working life in Europe 2016: EurWORK annual review', Publications Office of the European Union, Luxembourg, 2017.
- 10) European Commission. 'Impact Assessment on Costs and Benefits of Measures to Enhance the Transparency of Pay', Commission Staff Working Document, 2014.

- 11) European Commission. 'Report on the Implementation of Commission Recommendation on strengthening the Principle of Equal Pay between Men and Women through Pay Transparency', Report from the Commission to the European Parliament, The Council and the European Economic and Social Committee, 2017.
- 12) Francis-Devine, B. and Pyper, D. 'Chapter 9: Gender Pay Gap Reporting', in *The Gender Pay Gap*, Briefing Paper Number 7068, House of Commons Library, 2020.
- 13) Kim, M. 'Policies to End the Gender Wage Gap in the United States', *Review of Radical Political Economics*, 45(3), 2013, pp. 278–283. doi:10.1177/0486613413487159.
- 14) Kim, M. 'Pay Secrecy and the Gender Wage Gap in the United States', *Industrial Relations*, Vol. 54, No. 4, 2015.
- 15) McGregor, J., Davies, S.G., Giddings, L.S. and Pringle, J. 'Pursuing equal pay: The perspectives of female engineers and potential policy interventions', *Journal of Industrial Relations*, 59(1), 2017, pp. 3–21. doi:10.1177/0022185616659677.
- 16) Milner, S. 'Gender pay gap reporting regulations: advancing gender equality policy in tough economic times', *British Politics*, 14(2), 2019, pp. 121–140. doi:10.1057/s41293-018-00101-4.
- 17) Ramachandran, G. 'Pay transparency', *Penn St. L. Rev.*, 116, 2011, p. 1043.
- 18) Rosenfeld, J. 'Don't ask or tell: Pay secrecy policies in US workplaces', *Social Science Research*, 65, 2017, pp. 1–16. doi:10.1016/j.ssresearch.2017.01.009.
- 19) Scheller, E.M. and Harrison, W. 'Ignorance Is Bliss, or Is It? The Effects of Pay Transparency, Informational Justice and Distributive Justice on Pay Satisfaction and Affective Commitment', *Compensation & Benefits Review*, 50(2), 2018, pp. 65–81.
- 20) Smit, B.W. and Montag-Smit, T. 'The pay transparency dilemma: Development and validation of the Pay Information Exchange Preferences Scale', *Journal of Applied Psychology*, 104(4), 2019, pp. 537–558.
- 21) Tomlinson, J. 'Gender equality and the state: a review of objectives, policies and progress in the European Union', *International Journal of Human Resource Management*, 22(18), 2011, pp. 3755–3774. doi:10.1080/09585192.2011.622923.
- 22) Trotter, R.G., Zacur, S.R. and Stickney, L.T. 'The new age of pay transparency', *Business Horizons*, 60(4), 2017, pp. 529–539. As of 31/01/2020: <https://doi.org/10.1016/j.bushor.2017.03.011>
- 23) Veldman, A.G. 'Pay Transparency in the EU: A Legal Analysis of the EU Member States, Iceland, Liechtenstein and Norway', Brussels: European Commission, 2017.

### Sources included in the targeted review

- BUSINESSEUROPE. 'Addressing the Gender pay Gap', Position paper 23/06/2015. As of 16/01/2020: <https://www.businesseurope.eu/sites/buseur/files/media/imported/2015-00575-E.pdf>
- BUSINESSEUROPE. 'EU action plan on tackling the gender pay gap - a BusinessEurope position paper', 29/05/2018. As of 16/01/2020: <https://www.businesseurope.eu/publications/eu-action-plan-tackling-gender-pay-gap-businesseurope-position-paper>

- CEEP. 'CEEP Response to Commission Recommendation on Strengthening the Principle of Equal Pay between Men and Women through Transparency', 11/06/2014. As of 16/01/2020: [https://www.ceep.eu/wp-content/uploads/2014/11/14opinion07\\_CEEP-Response-to-Commission-Recommendation-on-Strengthening-the-Principle-of-Equal-Pay-Between-Men-and-Women-Through-Transparency.pdf](https://www.ceep.eu/wp-content/uploads/2014/11/14opinion07_CEEP-Response-to-Commission-Recommendation-on-Strengthening-the-Principle-of-Equal-Pay-Between-Men-and-Women-Through-Transparency.pdf)
- CoR. 'Transparent and predictable working conditions in the European Union', Opinion, 2018. As of 16/01/2020: <https://cor.europa.eu/EN/our-work/Pages/OpinionTimeline.aspx?opId=CDR-1129-2018>
- Council of the European Union. 'Council Conclusions on *Closing the Gender Pay Gap: Key Policies and Measures*, adopted by the EPSCO Council at its meeting held on 13 June 2019', 2019. As of 16/01/2020: <https://data.consilium.europa.eu/doc/document/ST-10349-2019-INIT/en/pdf>
- Dalli, H. 'Commitments made at the hearings of the Commissioners-designate Von der Leyen Commission 2019–2024. Briefing.' European Parliament, 2019. As of 16/01/2020: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/629837/IPOL\\_BRI\(2019\)629837\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/629837/IPOL_BRI(2019)629837_EN.pdf)
- Dalli, H. 'Commission statement: Gender pay gap. Plenary sitting, Monday, 13 January 2020', European Parliament, 2020. As of 16/01/2020: [https://www.europarl.europa.eu/doceo/document/PV-9-2020-01-13-ITM-016\\_EN.html](https://www.europarl.europa.eu/doceo/document/PV-9-2020-01-13-ITM-016_EN.html)
- EESC. Exploratory Opinion (12/12/2018): 'Gender equality in European labour markets (Exploratory opinion from the European Parliament)', 2018a. As of 16/01/2020: <https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/gender-equality-european-labour-markets-exploratory-opinion-european-parliament>
- EESC. 'EU Action Plan 2017–2019 - Tackling the gender pay gap'. Opinion (19/04/2018), 2018b. As of 16/01/2020: <https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/eu-action-plan-2017-2019-tackling-gender-pay-gap>
- EIGE. 'Tackling the gender pay gap: not without a better work-life balance', Research note. Publications Office of the European Union, Luxembourg, 2019.
- EPIC. 'ILO, UN WOMEN and OECD's Vision for the Equal Pay International Coalition', 2018. As of 16/01/2020: <https://www.equalpayinternationalcoalition.org/wp-content/uploads/2018/10/EPICs-Vision.pdf>
- EPSU. 'Consultation Meeting with Social Partners at European Institute for Gender Equality (EIGE) in Vilnius', 2014. As of 16/01/2020: <https://www.epsu.org/el/node/7680>
- EPSU. 'Women's Rights Are Workers' Rights: "The Prague Statement". Adopted by the EPSU Executive Committee, 8–9 May 2018'. As of 16/01/2020: <https://www.epsu.org/sites/default/files/article/files/EPSU%20Prague%20Statement%20New%20Gender%20Contract%20-%20EN.pdf>
- EPSU. 'EPSU reaction on Council's gender-equal economies: Legislation remains crucial to close the gender and pensions gap', 2019. As of 16/01/2020: <https://www.epsu.org/node/12056>
- ETUCE. 'Broad policy approach needed to combat multiple causes of gender pay and pension gap', 11 June 2019. As of 16/01/2020: <https://csee-etuice.org/en/news/archive/3146-broad-policy-approach-needed-to-combat-multiple-causes-of-gender-pay-and-pension-gap?highlight=WyJwYXkiLCJ0cmFuc3BhcmVuY3kiLCJwYXkgdHJhbnNwYXJlbnN5Ii0=>

- ETUC. 'Fine companies who refuse gender pay transparency, unions tell Von der Leyen', 25 October 2019. As of 16/01/2020: <https://www.etuc.org/en/pressrelease/fine-companies-who-refuse-gender-pay-transparency-unions-tell-von-der-leyen>
- Eurofound. 'Pay transparency in Europe: First experiences with gender pay reports and audits in four Member States', Research report. Publications Office of the European Union, Luxembourg, 2018.
- European Parliament. Resolution of 8 October 2015 on the application of Directive 2006/54/EC on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation, 2014/2160(INI). 2015. As of 16/01/2020: [https://www.europarl.europa.eu/doceo/document/TA-8-2015-0351\\_EN.pdf](https://www.europarl.europa.eu/doceo/document/TA-8-2015-0351_EN.pdf)
- EWL. 'Response to EC Consultation on the implementation on the *Evaluation of the provisions in the Directive 2006/54/EC implementing the Treaty principle on "equal pay"*', 12 April 2019. As of 16/01/2020: <https://www.womenlobby.org/EC-Consultation-on-the-implementation-of-the-Principle-on-equal-pay?lang=en>
- SMEunited. 'Reducing the Gender Pay Gap', 7 May 2019. As of 16/01/2020: <https://smeunited.eu/news/reducing-the-gender-pay-gap>
- von der Leyen, U. 'A Union that Strives for More: My Agenda for Europe. Political guidelines for the next European Commission 2019–2024', 2019. As of 16/01/2020: [https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission\\_en.pdf](https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf)

## ANNEX 1. RAPID EVIDENCE ASSESSMENT

The REA was conducted following the principles of reviewing as set out in the guidance published by the Centre for Reviews and Dissemination (2009 and Higgins and Green (2011)).

### Step 1: Framing the research question(s) and developing the protocol

The first stage of the review involved defining and refining the research questions. In order to systematically search the available literature and policy documents, the team defined inclusion and exclusion criteria (Table A1.1) for studies to guide document identification and collection. Inclusion and exclusion criteria relate to the content of identified sources, as well as publication date, language and geographical scope. The aim of the review is to describe rather than evaluate the evidence base on pay transparency measures, so no restrictions were placed on the robustness of the sources identified or the methodology used.

Table 4: Initial inclusion/exclusion criteria

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> <li>• Studies on pay transparency measures aimed at specifically addressing the gender pay gap</li> <li>• Studies published since 2009 to capture the most recent developments</li> <li>• Studies focused on at least one EU Member State</li> <li>• Studies published in English</li> </ul>	<ul style="list-style-type: none"> <li>• Studies on gender pay gap</li> <li>• News articles, conference presentations and doctoral theses</li> </ul>

The team outlined a list of search terms to ensure consistency and replicability of the review. An initial search of literature was performed to pilot the search terms and inclusion criteria, and assess the relevance of the identified studies. The results of the pilot search are presented below.

Table 5: Preliminary search

Database	Initial search terms used	Search results
Web of Science	("wage*" OR "pay" OR "earning*" OR "compensate*")	233 (only 2 with transparency in the title)
Cochrane Database of Systematic Reviews	AND ("gap" OR "differential" OR "(un)equal*" OR "equit*" OR "discriminat*")	22
Campbell Collaboration Library of Systematic Reviews	AND ("women" OR "men" OR "gender" OR "sex")	0
Econlit	AND ("transparen*" OR "publish" OR "disclos*" OR "reveal*" OR "report" OR "audit" OR "request" OR "bargaining" OR "union" OR "social partner") AND	322
Academic Search Elite	("polic*" OR "measure*" OR "regulat*")	304

Business Source Plus		264
ERIC		38
SSRN		1
Google Scholar		118

While databases returned many results, the majority seemed to be out of scope: judging from the titles, many studies related to gender equality and the gender pay gap in general, rather than pay transparency measures specifically. In order to focus the search on more relevant results, the search terms were modified. The revised search terms are outlined below and the final search was carried out in English.

Box 3: Final search terms

("pay" AND "gender" AND "gap")  
AND ("transparency" AND "measure" OR "regulation")

**Step 2: Identifying relevant literature (database searching)**

The following databases were searched:

- Web of Science;
- Science Direct;
- Cochrane Database of Systematic Reviews;
- Campbell Collaboration Library of Systematic Reviews;
- Econlit;
- Academic Search Elite;
- Business Source Plus;
- ERIC;
- SSRN;
- Google Scholar.

The results are presented below.

Table 6: Final search

Database	Number of results
Web of Science	17
Science Direct	2
Cochrane Database of Systematic Reviews	0
Campbell Collaboration Library of Systematic Reviews	0
Econlit	6

Academic Search Elite	9*
Business Source Plus	38*
ERIC	0
SSRN	0
Google Scholar*	23*

Note: \* News articles, conference presentations and doctoral theses were excluded

The search resulted in **95** references. After removing duplicates **74** sources were identified.

**Step 3: Study selection (screening)**

Titles and abstracts were screened against inclusion/exclusion criteria to confirm whether each source could be selected for full text review. One researcher screened the literature, with a sample screened by a second researcher to ensure that inclusion/exclusion criteria were applied consistently.

All sources were included in the outline for the purposes of transparency, separated into three lists: articles and titles meeting the original inclusion and exclusion criteria (**7** sources), articles and titles partially meeting the original inclusion and exclusion criteria (**22** sources) and articles and titles not meeting the original inclusion and exclusion criteria (**45** sources).

The study team amended the original inclusion and exclusion criteria to include articles that partially met these criteria (Table A1.4). This is due to the small number of sources identified that fully met the original criteria, but also in recognition that literature relating to non-EU countries may hold useful lessons for EU Member States about the pros and cons of pay transparency measures and their effects. In some cases, it is unclear from the title and abstract whether pay transparency measures are addressed in the source (as opposed to other policies to address the gender pay gap). In these cases, the study team reviewed the main text to establish whether the source should be included in the review.

Table 7: Final inclusion/exclusion criteria

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> <li>• Studies on pay transparency measures specifically</li> <li>• Studies published since 2009 to capture the most recent developments</li> <li>• Studies published in English</li> </ul>	<ul style="list-style-type: none"> <li>• Studies on gender pay gap</li> <li>• News articles, conference presentations and doctoral theses</li> </ul>

A total of **11** sources were excluded following a detailed reading of the source because they did not meet the inclusion/exclusion criteria (generally because the source related to the principle of pay transparency more broadly rather than pay transparency measures aimed at reducing the gender pay gap). After amending the inclusion/exclusion criteria and reviewing all sources, a total of **18** sources were identified from the REA.

**Step 4: Complementary evidence gathering**

To maximise the breadth and diversity of sources identified, a snowballing approach was used to identify additional sources cited in the identified literature. The inclusion/exclusion criteria were applied as outlined in the previous section and titles and abstracts were screened as described above. A total of **5** sources were identified via snowballing and included in the review, resulting in a total of **23** sources included in the review.

**Step 5: Characterisation of selected studies**

In order to structure the review, a data extraction tool was developed to record information from the reviewed papers. This tool captured the details of each source, including an assessment of the quality.

**Step 6: Analysis and synthesis of the evidence**

The study team carried out a narrative synthesis of findings from the different data sources. By synthesising findings, relevant evidence from the different data sources was brought together into a cohesive in-depth analysis, from which recommendations for future research and policy could be made.

**Step 7: Interpreting the findings**

The types of sources identified were heterogeneous, including academic publications, legal commentary, reports from relevant agencies and discussion pieces. Although no specific restrictions were imposed on the quality or robustness of sources included in the review, findings were interpreted in light of the quality of the evidence base. A formal quality assessment was not undertaken, but factors such as the degree to which arguments were based on supporting evidence, the degree of consistency across findings, generalisability to other settings (including a consideration of potential bias), the transparency of the write-up and the nature of the source informed the interpretation of the results. In the analysis, greater weight was given to sources with a strong evidence base, whether grounded in existing literature or on primary evidence. A number of studies included in the review did not present primary evidence in support of the arguments made, but these studies did cite relevant literature, some of which were published in languages other than English and would therefore not have otherwise been included in the review.

## ANNEX 2. TARGETED SEARCH

A targeted hand-search of the websites of European bodies and institutions was carried out to identify positions of EU institutions on the issue. The search included key EU institutions (such as the European Commission and European Parliament), agencies with the remit in employment, gender equality and non-discrimination issues (e.g. EIGE, Eurofound), as well as European social partners (e.g. ETUC, BUSINESSEUROPE) and civil society organisations (e.g. EWL). The targeted search is documented below.

Table 8: Description of how specialist websites were searched

Website	Search procedure
ec.europa.eu/	Clicked on the section "The European Commission's political leadership" and looked for "Commission priorities 2019–2024".
europarl.europa.eu/	Went to the "Plenary" tab – "Plenary sitting" option – "Texts adopted". In the search function, searched in last two Parliamentary terms (2014–2019 and 2019–2024) for "pay transparency" and "gender pay gap" in text and looked for INI (own-initiative reports). Sorted through results. For Commissioners designates' commitments, went to "thank tab" button at the bottom of the EP's main page and in the search function looked for "commitments" and "hearings". Looked for "Briefings".
data.consilium.europa.eu/	In the "Documents & Publications" tab, "Document register" option, searched for "Council conclusions" in "Words in subject" field and for "pay transparency" in "Words in Text" field. Sorted through adopted (not draft) and recent Conclusions.
eesc.europa.eu/	In "Advanced search" function, introduced search terms "pay transparency" and sorted results by type "Policies" and "Opinion and information report". Sorted through most recent results.
cor.europa.eu/	In the search function, searched for "pay transparency" and looked at most recent results.
eige.europa.eu/	In the search function, looked for "pay transparency" and "pay gap" until more targeted results appeared. Sorted through the different results, taking into account latest dates of publication.
eurofound.europa.eu/	In the search function, looked for "pay transparency" and refined the search filtering by type: "publication".
etuc.org/	Under the "Issues" tab, clicked on "Gender equality" and looked for "Press release" in "Content type" menu.
csee-etuce.org/	In the search function, introduced the search terms "pay transparency" and sorted through the results (6).

womenlobby.org/	Looked for “pay transparency” in the search function and sorted through the results (74).
epsu.org/	In the search function, ran several searches (“pay transparency”, “pay gap”, “gender pay gap”), until results narrowed down. Looked for “gender pay gap” and sorted through the results (8), taking into account their dates of publication.
businessseurope.eu/	In the search function, introduced the search terms “pay transparency” and specified the category “Position papers”. Since this did not yield any result, searched for “pay gap” and sorted through the results (6).
ceep.eu/	In the search function, introduced the search terms “pay transparency” and sorted through the results (3).
SMEunited.eu	In the search function, introduced the search terms “pay transparency” and reviewed the result (1).
equalpayinternationalcoalition.org/	Within the “The Coalition” tab, looked for “vision”.



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This study identifies key concepts in the debate about pay transparency measures. It maps out both their implementation across EU Member States, and the positions of key stakeholders on making them legally binding through EU legislation. Evidence from the reviewed literature shows that pay-transparency measures help address unjustified or discriminatory wage gaps. These measures are also associated with concerns about administrative costs (mainly for employers) and issues of pay confidentiality.

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