A coordinated EU minimum wage policy?

Enrique Fernández-Macías and Carlos Vacas-Soriano
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Introduction

Minimum wages exist in all EU member states, even if, as we shall see in this report, they are set up and established in very different ways. Minimum wages, in fact, can be considered as a cornerstone of the "European Social Model". Yet, the on-going process of European integration has so far had very little to do with them. Wages are explicitly excluded from the competences of European institutions in the existing treaties, contrary to other areas of work and employment such as working time or health and safety.

But in the context of increasing European integration, it seems at least plausible that sooner or later there would be some attempt of coordinating this important aspect of social policy across countries. As we will see in this report, the idea has been discussed at the European level several times since the EU was born, and it seems to be gaining momentum the context of the current economic crisis. Of course, the discussion is by no means settled, as many important European and national actors consider that this area should remain within the remit of national governments and according to national traditions and practices. It is certainly possible that wages, and minimum wages, would remain squarely at the level of national competence in the foreseeable future.

Still, it seems like a worthwhile exercise (useful to the debate) to explore what kind of implications would be associated with such a coordination of European minimum wage policy. This is what we will try to do in this report. Without taking ourselves a position, we will try to provide arguments and facts that we hope can be useful in this debate. The report is organized in two big sections. In the first one, we will discuss the theoretical and policy considerations around a coordinated EU minimum wage policy. We will review the social sciences literature on the effects of minimum wages, present a broad picture of the current debates around the coordination of EU minimum wage policy and discuss the institutional difficulties that such a coordination would in our view have to face. In other words, that section will try to provide a balanced summary of the theoretical and policy arguments around this debate. The second big section will try to complement the arguments with some facts, by carrying out a "simple accounting exercise" to evaluate how many and what types of workers would be most affected by a hypothetical coordination of minimum wage policy in the different countries, using a baseline scenario of a single national wage floor of 60% of the median national wages and drawing from the two most recent EU-wide data sources on wages and income.

Eurofound was established in 1975 with the mandate of contributing with knowledge to the planning and design of better living and working conditions in Europe. We hope that this report can at least contribute to the debate.[1]

Part 1: Theoretical and policy considerations around a coordinated EU minimum wage policy

Broadly speaking, a minimum wage is a level of pay under which no employment relation is permitted. The existence of a minimum wage is primarily justified on moral grounds: although in a market economy the determination of wages is in principle the result of the (individual or collective) negotiation between employers and workers, the society might consider that there is a

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threshold of pay below which employment is not acceptable, even if there would be employers and workers willing to trespass it. The operationalization of such threshold may take different forms, as we shall see: most importantly, it may be set by the government through regulation, or by social partners through collective bargaining. Although there may be other justifications for the existence of minimum wages (for instance, the stimulation of aggregate demand within a Keynesian policy framework), the ultimate rationale behind the existence of minimum wages is normative.

Since the 19th Century, trade unions have tried to introduce (and raise) wage floors for their constituencies, but wide-coverage minimum wages only became established in the second half of the 20th Century. Where unions were strong, minimum wages were often established through collective bargaining, usually sector-specific and sometimes non-binding (ie, only affecting union members, which were nevertheless the vast majority of employees). Where unions were less strong, governments established statutory minimum wages or extended by law collectively agreed wage floors, in most cases with a single national threshold and no exclusions. Those different origins are behind the different existing systems of minimum wage setting in Europe[2], shown in table 1.

	Statutory regulation	Collective agreements
Single national minimum wage	*Western countries:* France, Luxembourg, Netherlands, Ireland, UK *Southern countries:* Malta, Spain, Portugal *Eastern countries:* Croatia, Czech Republic, Hungary, Latvia, Lithuania, Romania, Slovenia	*Bipartite agreements:* Belgium, Estonia, Greece *Tripartite agreements:* Bulgaria, Poland, Slovakia
Sectoral and/or occupational minimum wages	Cyprus	*Nordic countries:* Denmark, Finland, Sweden *Continental countries:* Austria, Germany, Italy

Table 1: Different systems of minimum wage settings in Europe (source: Schulten 2012)

Today, the majority of EU member states have national statutory minimum wages, as can be seen in table 1. The predominance of this system was reinforced by the EU enlargement to the East, because most of the acceding countries adopted it in the 1990s. But even in the old member states, recent developments have reinforced the predominance of the statutory model: most importantly, the adoption of national statutory minimum wages in the UK and Ireland at the turn of the century, and the possible introduction of a national statutory minimum wage in Germany in the near future.[3]

So although the diversity in the mechanisms and structure of minimum wages across Europe is still important, such diversity has been considerably reduced in recent years, and it is likely to be even further reduced in the future. Such convergence can facilitate considerably the design and implementation of a hypothetical common minimum wage policy across the EU.

[2] For obvious reasons, the historical origins of the minimum wage systems in Eastern European countries do not fit entirely this narrative. But although they were established much later and in very different circumstances, the fact that they all opted for the statutory system is surely related to the weakness of their industrial relations systems.

[3] See http://www.eurofound.europa.eu/eiro/2013/03/articles/de1303019i.htm.

In this section, we will discuss from a theoretical and policy perspective some of the potential implications of such a policy. First, we will briefly summarize the economic and social sciences literature on the impact of minimum wages on employment, competitiveness and social inequalities. Then, we will present a broad picture of the current debates on the possibility of establishing a common EU minimum wage policy. Finally, we will discuss the institutional difficulties for establishing such a policy across different member states.

1. Review of the literature on the effect of minimum wages

Minimum wage policy is a highly controversial subject in the specialized literature, in which we often find surprisingly contradictory theoretical and empirical arguments. The present section will try to make a brief overview of the main arguments about the potential effects of minimum wages on employment, poverty and inequality, competitiveness and other social and economic issues.

Employment effects

In the standard neoclassic model which is taught in most introductory economics textbooks, the minimum wage is either irrelevant or produces unemployment. In the context of a competitive labour market, a minimum wage set below the equilibrium level (the one that results from the free interaction of suppliers and buyers of labour) would simply be irrelevant. But a minimum wage set above the equilibrium level would necessarily lead to unemployment, since it would make some low-paid (normally low-skilled and/or young) workers too costly for employers to hire with profit, while simultaneously increasing the number of people willing to work because of the attractiveness of higher salaries. Therefore, from this perspective the minimum wage policy tends to actually damage those that it intends to help.

According to the Keynesian approach, on the other hand, higher minimum wages do not necessarily increase unemployment at the macroeconomic level: they will affect relative prices of the affected industries, altering the structure of demand and supply with unpredictable effects on overall employment. But since workers receiving minimum wages have a higher propensity to consume, it is often argued from this perspective that minimum wage hikes may actually lift aggregate demand, output and employment (Herr and Kazandziska 2011).

Economic theory predicts that a minimum wage may as well increase employment under certain scenarios. For instance, in the case of a monopsony, where a single buyer of labour exists, a binding minimum wage (that is, one which is set above the monopsonic equilibrium level) can increase the number of people employed by the firm.[4] Moreover, even if we assume a potentially negative impact of minimum wages for the employment of the least productive workers, a binding minimum wage could work as an incentive for such workers to increase their education and training in order to raise their productivity levels and remain employed (Cahuc and Michel 1996). Under efficiency wage models, the productivity of labour depends on the wage paid, so

[4] In monopsony, the firm is not a price-taker: it can reduce the wage by employing fewer workers. This means that both employment and wages will be lower than in the conditions of a competitive market. In this context, a skillfully set minimum wage can increase employment (and efficiency), by imposing a (higher) wage level closer to the one that would obtain in competitive conditions. For a discussion, see Manning 1995.

that employees will be more productive when earning higher wages due to higher commitment, which may encourage employers to maintain or expand their labour force (Georgiadis 2012).

So overall, the impact of minimum wages on employment is indeterminate according to economic theory: although the simple neoclassic model would assume a negative impact, such effect only holds in a purely competitive model which is hardly ever found in reality. In non-competitive labour markets, such effect is unclear even from a neoclassic perspective; and in Keynesian approaches, the impact of minimum wages on employment depends on their impact on demand and price structures, being again highly uncertain. In other words, theory alone cannot solve this issue, which makes it necessary to turn to empirical analysis.

At an empirical level, the employment effect of minimum wages is one of the most researched topics in labour economics, but again the results are inconclusive. The consensus view among mainstream economists until the early 1980's was that minimum wages had a negative impact on employment, especially for low-skilled and younger workers, as summarized by the statement of Brown (1982) that "a 10% increase in the minimum wage reduces teenage employment by 1 to 3%".[5] But these results were challenged in the early 1990s by a new wave of studies on minimum wages.

By using both natural experiments (Card and Krueger 1994, 2000) and other robust empirical approaches (Allegretto at al. 2011), these more recent studies found much smaller negative employment effects of minimum wages even for teens, often not statistically significant. Despite the higher levels of minimum wages existing in Europe, different empirical studies (Dolado et al. 1996; Vaughan-Whitehead 2010) also failed to identify significant disemployment effects of minimum wages. As summarized by Martin and Immervoll (2007), "the evidence shows that an appropriately set minimum wage need not have large negative effects on job prospects, especially if wage floors are properly differentiated (e.g. lower rates for young workers) and non-wage labour costs are kept in check."

Some researchers have pointed out that this apparent contradiction between the standard economic theory and empirical results can be explained by the existence of adjustment channels to maintain profitability when minimum wages are established or increased without necessarily having to lay off workers. Such adjustment channels would include: cost reductions resulting from a lower labour turnover; efficiency improvements by the organization or by more motivated staff; reductions in wages of higher earners ("wage compression"); small price increases; a reduction in working hours and cuts in training or other fringe benefits, etc. (Schmitt 2013).

Inequality and poverty

In general, minimum wages are not explicitly aimed at reducing wage inequality and poverty, but at establishing a minimum rate under which any employment relation is considered to be

[5] The US Minimum Wage Study Commission published in 1981 a long review of the main theoretical arguments and empirical research on the topic, concluding that negative employment effects existed for teenagers and possibly other younger workers. Brown, Gilroy and Kohen (1982) summarized it and distinguished employment effects between different groups: for teenagers (16-19 years old), a 10% increase in the minimum wage reduced employment by 1-3%; for young adults (20-24) the impact is negative but smaller than for teenagers; for adults, the impact is uncertain both according to theory and empirical research.

unacceptable (ie, the establishment of morally-based labour standards). But minimum wages are obviously related to both wage inequality and poverty. Indeed, minimum wages compress the wage distribution by raising the lowest wages and therefore reduce inequality, provided the increase in the minimum wage is not compensated by a similar increase in other wages. To the extent that such an increase would affect some workers under the poverty line, it would also reduce poverty. But as was the case for employment, the scale and importance of such effects are largely an empirical issue, which depend on the number of workers affected by the increase and the household distribution of income.

It is a very well-established fact that wage inequality has increased considerably over the last few decades across most advanced market economies, but most of that increase has taken place at the upper tail of the distribution[6] (Atkinson at al, 2011; see also Gordon and Dew-Becker 2008). The earnings of the highest paid (the upper 10%, 1% or even 0.1%) have increased much faster than the those of everyone else, and this on its own explains most of the increase in inequality. Since minimum wages have only an effect on the lower tail of the distribution of wages (they obviously have no impact on very high wage levels), this suggests that they can have only a relatively low impact on overall inequality.

That said, most existing research on this issue does show that minimum wages (and their evolution) play an important role in explaining the patterns of wage inequality in the lower tail of the distribution, not only directly by raising the lowest wages, but also indirectly through spillover effects (Teulings 2003; Autor, Manning and Smith 2010). Of course, the impact of a minimum hike on the wage distribution will be larger in those cases where there are many workers currently paid at minimum wages levels.[7]

On the other hand, some argue that the effect of minimum wages on poverty reduction is not so clear-cut, because most minimum wage earners are not found in poor households[8] (and therefore, minimum wage hikes would have a limited impact on poverty at a household level; Brown 1999). To the extent that one of the main causes of poverty in Europe is being out of employment (one would not expect minimum wages to raise the living standards of households in which nobody works), the welfare systems would be better tools than minimum wages to fight poverty. For instance, according to Maitre et al. (2012), most European low-paid employees live in households with more than one wage earner and are not affected by relative household poverty. The literature indicates that rather than the level of minimum wages, the household composition and the number of wage earners are the key factors behind household poverty levels (Marx et al. 2012).

[6] This increase in wage inequality is the main driver behind a more general increase in income inequality. "This rise of top income shares is due not to the revival of top capital incomes, but rather to the very large increases in top wages (especially top executive compensation). As a consequence, top executives (the "working rich") replaced top capital owners (the "rentiers") at the top of the income hierarchy during the twentieth century" (Piketty and Saez 2006)

[7] If minimum wages are set at a relatively high level and there are no spillover effects, there can be some unintended social consequences. A large spike in the bottom of the wage distribution can create excessively compressed wage structures for some low-paid jobs, practically eliminating wage increases over the career of the worker, for instance (Gautié 2010). Such an effect largely depends on the strength of collective bargaining in each country and even sector (Grimshaw, Bosch and Rubery 2013).

[8] The usual example would be teenagers in middle-class households.

Competitiveness and other economic effects

In the current economic situation, European policy places a strong focus on the relationship between national wage developments and international competitiveness, as underpinned in the recent Euro Plus Pact.[9] Within one of the four objectives of the initiative, that of fostering competitiveness, a strong emphasis is placed on the idea that wages should evolve in line with productivity to keep unit labour costs stable. If unit labour costs, equivalent to the ratio between labour costs per hour and labour productivity (output per hour), undergo large increases, competitiveness may be damaged.[10] It could be argued that if a country decides to increase its minimum wage, without any corresponding increase in productivity, the costs faced by national companies will increase and they will become less competitive vis-à-vis competitors from other countries. This effect will be larger in labour intensive industries, where labour costs represent a higher share of the total costs faced by firms.

There are a number of potential objections to the previous argument. First, increases in minimum wages tend to foster increases in productivity (Rizov and Croucher 2011; McLoughlin 2007), so that the final result in terms of unit labour costs and therefore competitiveness may even be positive. After all, it is empirically the case that the most competitive European economies tend to have higher, rather than lower minimum wage levels (ie, Nordic countries). Second, low-paid employees are not typically concentrated in trade-intensive industries such as manufacturing, but in non-traded sectors such as services, especially personal services (Dolado et al. 1996). This means that an increase in minimum wages will have a limited impact on internationally competitive industries, since moderate wages are rarely the key factor behind international competitiveness, at least in Europe.[11] Furthermore, competitiveness is influenced both by price factors (wages and productivity, which together explain unit labour costs, but as well exchange rates and inflation) and non-price factors (such as product quality and design, marketing and consumer after-sales service). Wages, or even unit labour costs, are just one element among many, and many researchers have warned against taking unit labour costs as a comprehensive measure of competitiveness (Ark et al. 2005).

Minimum wages may as well have an effect on inflation, since companies employing minimum wage workers may adjust its prices upwards following a minimum wage hike. The effect would not be across the board, but would concentrate on the industries that employ minimum wage workers, and hence would alter the price structure in ways which are difficult to predict. And indirectly, it may end up having cascading effects on other industries, even in those not directly

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[9] EUCO 10/1/11 "The Euro Plus Pact: Stronger Economic Policy Coordination for Competitiveness and Convergence", Brussels, 20 April 2011.Conclusions from the 24/25 March 2011 European Council. The Euro Plus Pact was agreed by the euro area Heads of State or government and joined by Bulgaria, Denmark, Latvia, Lithuania, Poland and Romania.

[10] More concretely, the Euro Plus Pact states: "To assess whether wages are evolving in line with productivity, unit labour costs (ULC) will be monitored over a period of time, by comparing with developments in other Euro area countries and in the main comparable trading partners. For each country, ULCs will be assessed for the economy as a whole and for each major sector (manufacturing; services; as well as tradable and non-tradable sectors). Large and sustained increases may lead to the erosion of competitiveness, especially if combined with a widening current account deficit and declining market shares for exports."

[11] A counter-argument would be that a wage increase in the non-traded sector may exert pressure on wages in the traded sectors. In the next section we will discuss these spill-over effects in the context of industrial relations systems.

employing low-paid workers, since the input of certain industries is the output of others. To what extent this would be a problem is open to interpretation and depends as well on the general economic conditions: some have argued that in a context of crisis such as the current one, minimum wages can be used as a tool against deflation (Herr and Kazandziska 2011).

As we have already mentioned, some argue that minimum wages foster productivity and efficiency (Kaufman 2009). On the one hand, they can increase the incentive to work and the motivation of employees, as well as reduce turnover (Card 1995). On the other hand, by acting as a "beneficial constraint" for employers, they make it difficult to choose a low-cost competitive strategy, fostering efficiency and innovation (Brosnan and Wilkinson 1988; Kleinknecht 1998). Although such link has been difficult to establish empirically, some recent studies in the UK have been able to identify it, especially in large firms (Croucher and Rizov 2011; Riley and Bondibene 2013).

Other economic effects of a minimum wage increase that are mentioned in the literature are demand stimulation (even if an increase of minimum wage is just a redistribution of income from profits to wages, it would increase aggregate demand and output because low-wage earners have a higher propensity to consume; see Herr and Kazandziska 2011, also Stockhammer 2011) and reduced welfare spending (since it increases the income of the lowest paid, it reduces the need for redistributive and welfare programs for those groups –some argue that this amounts to ensuring that employers pay the full social costs of low paid employment, rather than subsidizing low-paid jobs as do other forms of redistribution; see Freeman 1996, Kaufman 2009).

Interaction between minimum wages and industrial relations

Of course, minimum wages do not exist in a vacuum. They interact with other wage-setting institutions, most importantly with collective bargaining, in ways that crucially determine their final impact on employment, inequality, and all the other aspects we have been discussing (Grimshaw, Bosch and Rubery 2013; Lee 2012). Some of the literature, particularly the mainstream economic one, often disregards such interaction, though modern institutionalist and heterodox approaches do bring this aspect to the fore (see the contributions to Grimshaw 2013; also to Vaughan-Whitehead 2010). It is particularly important to take this issue into account when evaluating the possibility of coordinating minimum wage policy across Europe, because the wide differences in industrial relations systems may lead to very different outcomes for the very same minimum wage policy.[12]

Although minimum wages have a direct effect only on those workers whose wages fall below the specified threshold, they often have an indirect effect on wages above the threshold, which can extend to a sizeable part of the lower half of the earnings distribution (Freeman 1996). These "ripple" or "spill-over" effects exist because the minimum wage level is often used as a reference in individual or collective wage negotiations at the bottom of the wage distribution, with workers often aiming at maintaining their relative distance to the threshold. Sometimes, these ripple

[12]In fact, as we already mentioned, in countries without a strong industrial relations tradition, in which unions were not strong enough to establish a functioning collective bargaining structure, statutory minimum wages were introduced to ensure an adequate minimum standard. In countries with strong industrial relations and efficient bargaining structures, wage floors were established directly by collective agreement, without need of government intervention. In other words, statutory minimum wages can be understood as a substitute for effective collective bargaining.

effects can have a bigger impact on the wage distribution at the bottom than the minimum wage increase on its own. The relative strength of collective bargaining in the different countries is one of the main determinants of the existence and scale of these ripple effects (Grimshaw, Bosch and Rubery 2013): where collective bargaining is very weak, it may not be able to capitalize on a minimum wage increase to facilitate a more or less general increase of wages in the low-paid sector. In this case, an increase in the minimum wage would simply compress wage distribution at the bottom, which can lead to some undesirable results such as excessively flat earnings trajectories in the low-paid sectors (generating a "low-wage trap"; Gautie 2010). Where collective bargaining is stronger, an increase in the minimum wage level can lead to a more or less generalized expansion of wages in the low-paid sectors, multiplying its effects in terms of pay equity, etc.

But this interaction is made even more complicated by the fact that minimum wages can also have an effect on the strength and structure of the collective bargaining system. Some researchers have argued that high statutory minimum wages can have a "crowding out" effect on collective bargaining in the low-pay sector (Aghion et al. 2008), by reducing both the need and the incentive to engage in collective bargaining for setting wages (which may apply both to workers and employers). To the extent that this argument is based on the empirical correlation between statutory minimum wages and the strength of collective bargaining, it may inadvertently reverse causation: as we have already said, statutory minimum wages have often been introduced as a substitute for ineffective collective bargaining, and hence the observed correlation may be explained in exactly the opposite way (weak collective bargaining leads to statutory minimum wages, and not the other way round). Still, some empirical evidence does suggest (though not prove) the possibility of "crowding out" effects, and the reticence of unions against statutory minimum wages in some European countries is partly based on their own perception of this possibility (Eldring and Alsos 2012), so it is something that must be taken into account.

2. Debate on the EU minimum wage policy

In principle, the EU has no competences with respect to wage levels or wage formation mechanisms. The article 153 of the Lisbon Treaty, which deals with the EU attributions with respect to work and employment (including the areas of working conditions, health and safety, social security and employment protection), finishes with a sentence (point 5) which succinctly says "the provisions of this article shall not apply to pay". According to this, the level and mechanisms for establishing minimum wages are a matter of member states.

That does not mean that the issue of minimum wages has never concerned EU institutions. For instance, the European Parliament has repeatedly expressed its concern about low pay and minimum wage levels across Europe, in some occasions (as we will see later) even explicitly asking member states to ensure that minimum wage levels reach at least a certain percentage of the average or median national wages (normally, 50 or 60%). But the Commission has not attempted to transform such concerns into some form of soft or hard regulation, on the basis of the explicit exclusion of wages from EU competences in the treaties.

But the current economic crisis has changed the situation in this respect. Under the assumption that the crisis in the periphery was largely a problem of competitiveness that could only be resolved through wage reductions (internal devaluations) and structural reforms, and with European support for strained public finances acting as a disciplinary device, European institutions (most importantly, the Commission and the Central Bank) have been increasingly

intervening in wage developments and wage formation mechanisms.[13] Furthermore, such interventions have been reinforced by recent intergovernmental pacts (Six Pack, Euro Plus Pact) that, aside from committing countries to strict financial rules in the short and long term, explicitly include a compromise with austere wage developments and wage decentralization.

So even though the treaties still exclude wages from EU competences, the crisis has made wages (both their development and the mechanisms of their formation) one of the central targets of EU policy-making. This is surely one of the reasons why the debate on establishing more explicit mechanisms of wage policy coordination, in particular with respect to minimum wage levels, is currently re-emerging in European policy[14] and academic[15] circles. In this section, we will make a brief review of such debate. First, we will revise its history. Then, we will discuss the different modes of coordination that are being discussed.

A brief history of the debate

In the early stages of the European project, the main concern was the establishment of a common market, and employment and social issues remained squarely at the national level. But from the sixties until the nineties, the competences of EU institutions in social and employment issues expanded considerably, and there were even some attempts at wage coordination, including minimum wages. The 1961 European Social Charter of the Council of Europe[16] established the right of workers to a fair remuneration for a decent standard of living, and the Council's European Committee of Social Rights put forward some definitions on what decent wages could be in the 1970s and 1990s.[17] Following the adoption of the Charter of Fundamental Social Rights for

[13] The countries receiving EU bailouts had to sign memorandums that often included reductions of minimum wage levels, public pay levels and decentralizing reforms of the collective bargaining systems (Busch et al. 2013). For instance, the 2010 Memorandum of Understanding with Ireland states that "the government will introduce legislation to reform the minimum wage in such a way as to foster job creation notably for categories at higher risk of unemployment and prevent distortions of wage conditions across sectors associated with the presence of sectoral minimum wages in addition to the national minimum wage", as well as reduce it by 1% in nominal terms (http://ec.europa.eu/economy_finance/articles/eu_economic_situation/pdf/2010-12-07-mou_en.pdf). Similar provisions can be found in the Memorandums for Greece and Portugal (http://ec.europa.eu/economy_finance/publications/occasional_paper/2010/pdf/ocp61_en.pdf, http://ec.europa.eu/economy_finance/eu_borrower/mou/2011-05-18-mou-portugal_en.pdf).

[14] In recent years, some very prominent European policymakers have floated the idea. For example, the head of the group of euro-area finance ministers, Jean-Claude Juncker, considered "indispensable to agree on a European legal minimum wage", in January 2013 (http://www.bloomberg.com/news/2013-01-10/juncker-says-euro-area-countries-need-common-minimum-wage.html). A bit earlier, László Andor, the EU commissioner in charge of social and employment affairs, also suggested the introduction of minimum wages across Europe (http://www.euractiv.com/socialeurope/brussels-push-eu-wide-minimum-wa-news-512189).

[15] The origins of this debate can be traced back to Schulten et al 2005. More recent contributions include Schulten 2012, Eldring and Alsos 2012.

[16] The Council of Europe is an international organization including 47 European countries, not an EU body.

[17] In the 1970's, it stated that they should be at least 68% of the national average gross wage, while in the second half of the 1990's the threshold of 60% of the national average net wage was proposed. The change from a gross to a net definition of decent wages was very criticized because bringing tax and benefit systems complicates the picture and because it places the responsibility to provide adequate levels of wages in the State instead of the employers (Lorcher 2006; Murray 2004).

Workers in 1989, which included the right to an "equitable wage", the European Commission and Parliament made some proposals that can be seen as early attempts to coordinate national minimum wages at the European level (Eldring and Alsos 2012). In 1993, the European Commission asked member states to "take appropriate measures to ensure that the right to an equitable wage is protected" (Opinion on an Equitable Wage, 19OJC 248, 11 September 1993), while a report from the European Parliament encouraged them "to establish a minimum wage which amounts to a certain proportion of the national average wage" (Schulten 2008). But because of resistance from several member states, the idea was more or less abandoned by the second half of the 1990s, which explains the explicit exclusion of wages from EU competencies in the treaties of Maastricht, Amsterdam and Lisbon, or the lack of any mention to wages in the EU Charter of Fundamental Rights.

The debate on minimum wage coordination resurfaced around the second half of the first decade of the new millennium, first related to the EU enlargements and concerns with their impact on low wages and social dumping, and then (more strongly) in the context of the economic crisis and the already mentioned *de facto* increasing levels of wage coordination.[18] In 2007, the European Parliament stated that "the minimum wage is set very low or at below subsistence level" in many European countries (European Parliament 2007) and in the following year called on the Council "to agree an EU target for minimum wages...to provide for remuneration of at least 60 percent of the relevant...average wage" (European Parliament 2008), asking later on the European Commission to study the impact that the introduction of a minimum income at the EU level would have in each country.[19] As previously mentioned, also the Commission has recently expressed interest in this matter.[20]

However, some key European actors remain reluctant to the coordination of minimum wage policy. On the one hand, Nordic member states and more in general countries where minimum wages are set up by collective bargaining rather than statutory regulation have traditionally opposed the idea, considering that it may undermine the existing national wage setting mechanisms. Germany used to belong to this category, but a more or less general dissatisfaction with the results of the current minimum wage setting mechanisms has led to a shift towards the statutory model, which may happen soon.[21] On the other hand, European social partners have also sometimes opposed the idea of an EU minimum wage policy, defending the need to respect national specificities in wage-setting mechanisms as well as national and social partners sovereignty. Nonetheless, the European trade union movement seems to be shifting its position, having recently recommended that “where it exists the effective national minimum wage should be at least equal to 50% of the average wage or 60% of the median wage” (ETUC 2012) - although it certainly does not recommend extending the statutory model to countries where minimum wages are collectively agreed. European employers have argued that minimum wages should remain a responsibility of member states according to the subsidiarity principle (Business Europe 2012).

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[18] The EU-level debate also echoes the debate in some countries on this matter in recent years, particularly in Germany (see box X).

[19] “The Commission should study the impact which a legislative proposal it might submit concerning the introduction of an adequate minimum income at European level would have in each Member State; suggests, in particular, that any such study should examine the difference between the adequate minimum income and the minimum wage in the Member State concerned” (European Parliament, 2010).

[20] See for instance the 2012 Employment and Social Developments Report (EC 2012). See also note 10 above.

[21] http://www.eurofound.europa.eu/eiro/2013/03/articles/de1303019i.htm

What type of coordination?

There would be many possible ways to coordinate European minimum wage policies, and even the defenders of this idea often have different opinions in this respect. To discuss such possibilities, we will focus on three main axes of coordination: 1) the mode of regulation (basically, hard vs. soft law in EU terminology); 2) the extent of coordination (levels vs. systems); and 3) the definition of target levels (a proportion of median or average wages, GDP per capita, or others).

1. The mode of regulation. Several of the proponents of the idea of an EU minimum wage policy (for instance, Schulten 2008) have argued that the coordination could be carried out using the mechanisms of "soft law" that have been applied in recent years for the coordination of employment and social policies in Europe, what in EU terminology is called "Open Method of Coordination". The OMC basically consist in a commitment to broadly defined European objectives by member states, which have then to develop nationally specific action plans, with progress towards the objectives being periodically reviewed through commonly agreed indicators, and a common discussion of results with the aim of spreading best practices and common learning and improving.[22]

Considering the important existing differences in national minimum wage systems, it has been argued that the OMC provides "a very practicable way to introduce a European minimum wage policy" (Schulten 2008: 431). Some have argued, though, that the OMC has delivered few results in terms of actual policy coordination and harmonization (its explicit goals), since the lack of any type of enforcement mechanism renders it ineffective in practice (for a review, see Borras and Radaelli 2010). A "hard" form of regulation, ie. a directive, would surely be more effective, but since pay is currently explicitly excluded from the treaties it can only be considered in the long run (it would require changing the treaties), and it would involve a considerably higher degree of harmonization, which may be opposed by many countries and EU actors, as mentioned in the previous section.[23]

2. The extent of coordination. Most proposals for an EU minimum wage policy refer to a common target level (for instance, a proportion of average wages), without mentioning the institutional mechanisms that should bring about such minimum pay level in each country. In fact, some of the proposals explicitly argue that the system for setting out the minimum level should be decided by each country according to its own institutional and industrial relations traditions. What this would imply is that countries where minimum wages are set up by collective agreement could maintain such system, only adopting the compromise to ensure that it is at least as high as the common target.

[22] For more details, see http://europa.eu/legislation_summaries/glossary/open_method_coordination_en.htm.

[23] Since the treaties exclude so explicitly wages from the remit of EU institutions, in fact it is not clear whether they would allow for even the type of soft coordination associated with OMC. Probably, other options for voluntary and "soft" coordination would have to be explored, such as autonomous agreements concluded by the EU social partners (www.eurofound.europa.eu/areas/industrialrelations/dictionary/definitions/autonomousagreement.htm).

Although that would make the policy much more feasible on the face of the existing diversity, there would be some problems. First, a minimum wage system purely established by collective agreements (such as the one in Sweden or Denmark) leaves uncovered some workers (those not covered by collective agreements). If the common target level is defined as a minimum for all workers, it may require the extension of collective agreements or the establishment of some kind of second-level statutory floor. In both cases, this would imply an important change in the existing industrial relations practices, with a higher degree of state intervention.

Taking this a step further, the EU coordination could aim at harmonizing not only levels, but also systems, requiring that below the collectively agreed minimum wages (which are generally higher) there would be a statutory minimum threshold corresponding to the EU target. If this would be the case, the impact of coordination would differ considerably across Europe: in the countries which currently have statutory minimum wages, only the level would change, not the system; in the countries where they are collectively agreed, the system itself would have to change, and therefore the institutional impact would be more significant (we will discuss this in more detail in the following section). It is important to note that even in the latter case, the statutory minimum wage would not (necessarily) replace the collectively bargained level, but supplement it by setting an absolute minimum covering the whole workforce (in other words, nothing would prevent social partners agreeing higher minima for specific sectors, etc).

3. The definition of target levels. A final important aspect in which current proposals differ is in how the target levels should be defined. The most frequently mentioned is a proportion of median or average wages, normally 50 or 60% (for instance, the EU Parliament has mentioned a level of 60% of the median; ETUC 50% of the average or 60% of the median; Schulten 60% of the median, etc., refs.). Other proposals anchor the target to GDP per capita (o per worker) rather than to wages (for instance, the proposal by Rasmussen and Delors 2006).

The choice of the target level is obviously not trivial, since it has important distributional implications and imply different interpretations of what would be a fair distribution of income. For instance, anchoring the minimum level to the median wage (the wage that occupies the middle position of the distribution in each country) makes it insensitive to developments at the very high end of the wage distribution, which is precisely where most recent changes in wage inequality have taken place as we saw in the previous section (the recent increases in inequality are mostly due to a disproportional increase of wages at the top tail of the distribution). In other words, using the median as reference could mean that even with a massive growth in overall income, if all such growth is located in the upper tail of the distribution, the minimum wage level would not change. Using the average rather than the median as the anchor would solve this problem, ensuring that the minimum wage level would be sensitive to changes in the upper tail (in general, when using the average as reference, the target levels proposed tends to be lower, since the average is usually significantly higher).

Using as the reference GDP per capita or per worker, on the other hand, has the advantage of linking the minimum wage to the evolution of overall productivity in the country, irrespective of whether such evolution is reflected in the structure of wages. GDP per worker is a more adequate measure of productivity in this respect, but in the context of a crisis and rising unemployment, it could lead to difficult to defend increases in minimum wage levels. Of course, a final option would be to have no target level at all, but just some type of EU-level council (similar to the UK Low Pay Commission) that would adjust the target on a yearly basis, depending on their own evaluation of the economic and social situation.

Box 1: Arguments in favor and against of a coordinated EU minimum wage policy

With respect to the arguments in favor and against establishing a common EU minimum wage threshold, we can differentiate them at three levels: 1) those associated with an increase in minimum wage levels, which mostly concern the countries which already have statutory minimum wage systems (in nearly all of them, the level is currently below the hypothetical scenario of 60% of the median); 2) those associated with the introduction of a statutory wage floor or something similar, which mostly concern the countries which currently establish their minimum wages through collective bargaining; 3) those associated with the coordination of minimum wage policy as such, which concerns the EU as a whole. The following table outlines the main arguments at each of those three levels (for more details, see sections 1 and 2 of this report).

Related to:	***Arguments in favor***	***Arguments against***
1. Increasing MW levels (countries with statutory MW systems)	-Increases the standard of living of the lowest wage earners (1) -Reduces wage inequality (overall and linked to disadvantaged groups, such as women or migrants) (2) -Increases motivation of low-paid workers and incentive to innovate in low-skilled sectors (3) -Boosts overall demand, since low earners have a higher propensity to consume (4) -Serves as an anchor against deflation in times of crisis (5) -Reduces poverty and state expenditure (6)	-Generates disemployment effects, especially among the youngest and least skilled workers (7) -Hampers the competitiveness of firms in the low-paid sectors (8) -Can generate low-wage traps, excessively flat earnings trajectories for low-skilled workers (9)
2. Introducing a statutory wage floor (countries without statutory MW systems) (10)	-Expands coverage of the minimum wage provisions, making it comprehensive -Reduces social exclusion and labour segmentation	-Undermine existing collective bargaining systems -May have a knock-down effect on low wages (by deincentivising wage bargaining) -Crowding out effect on collective bargaining
3. Coordinating MW policy at the EU level (11)	-Multiplies the demand boost by making it simultaneous across the EU -Minimizes the negative effects on competitiveness (simultaneous increase in main trade partners) and employment (demand boost) -Limits some problems of market integration, such as social dumping and race to the bottom -Important step of European integration, embodiment of the European Social Model	-Need to change existing treaties, political difficulties -Undermining of industrial relations tradition of some countries -Unpredictable institutional interactions in different countries -Difficulty to adapt a single policy to national needs and specificities

Some relevant references: (1) Freeman 1996; (2) Card 1995, Teulings 2003; (3) Kaufmann 2009; (4) Herr and Kazandziska 2011; (5) Herr and Kazandziska 2011; (6) Freeman 1996, Kaufman 2009; (7) Brown, Gilroy and Kohen 1982; (8) Abbot 2012; (9) Gautié 2010; (10) policy debate, see Dostal 2012 for Germany, Eldring and Alsos 2012 for a Nordic perspective; (11) see Schulten 2008 & 2012 for an academic perspective, section 2 of this report for the policy debate.

3. Varieties of minimum wage systems in Europe and the difficulties of coordination

The main difficulty for the coordination of minimum wages in the European Union is the wide diversity across countries in the existing systems. As we have already mentioned several times, the main divide in this respect is between countries where minimum wages are set by government regulation (the statutory model) and countries where minimum wages are set by collective bargaining. But even within each of those two sets of countries there are further elements of differentiation that could be a complicating factor in any attempt of policy coordination. The following points summarize these elements of differentiation and how they may difficult EU coordination, broadly classifying countries along each axis:

1. Degree of social partner involvement. Although in nearly all cases there is some degree of social partner involvement (the only possible exception is Hungary; see Schulten 2012: 90), it varies considerably between countries. Of course, the highest level of involvement is in the countries where minimum wages are set by collective bargaining, with no (or very little) government intervention: this is the case in the Nordic countries, Germany, Austria and Italy. In some of these countries, there is in fact some marginal intervention of the government, either to extend the coverage of collective agreements in some cases (Finland and Germany) or to establish some kind of statutory legal minimum in some particular cases (Austria and Italy).

A second level of involvement is in the countries where there are national minimum wages but they are set by national level collective agreements, bipartite (Belgium, Estonia and Greece) or tripartite (Bulgaria, Poland and Slovakia). This category is really a hybrid: as in the statutory model, there is a single minimum wage level, and the intervention of the government is crucial for transforming what has been agreed into binding regulation (and often, the government can have the final word in if the social partners cannot reach an agreement); as in the collectively bargained model, it is the agreement of social partners what determines the threshold.

A last group of countries (the rest) would have minimum wages set directly by the government, though in most cases social partners are consulted (often, they are formally part of some type of advisory body which recommends adjustments to the minimum wage on a regular basis, such as the well-known UK Low Pay Commission).

The coordination of minimum wage policy would be easier in the third group of countries (the statutory model), because the complexity of the system and the number of actors involved is smaller (it would just require a commitment of the governments to gradually move towards the EU agreed framework); in the second group (the nationally agreed model), the degree of institutional disruption would be higher, since moving towards a common EU threshold would diminish the role of social partners in the setting of minimum wages; but the highest degree of institutional disruption and difficulties would be in the first case, because either it would involve a shift towards a kind of second-level statutory model (which would underlie the collectively agreed system) or it would require a commitment with the EU target from all the partners involved, at all levels.

2. Universal vs. segmented wage floors. Although in most cases, this second differentiation is linked to the previous one, it is conceptually distinct. In the countries with collectively agreed minimum wages, they tend to be sector- or even company-

specific, whereas most of the countries with statutory minimum wage systems tend to have a single universal wage floor[24] (although there may be some exceptions or sub-minima, as we will see in the following point). Cyprus is a somewhat hybrid case, because it has an occupation-specific statutory minimum wage underlying the collectively agreed levels (Soumeli 2011). As far as we know, none of the proposals of EU minimum wage coordination mentions the possibility of differentiating by sector or occupation, and therefore we can assume that it would be a universal threshold within each country. Therefore, this is a second axis of institutional difficulty for the countries where minimum wages are set by collective agreement, which would have to move from sector-specific thresholds to a single universal wage floor (for the countries with a statutory system, this would be no problem).

3. Scope. Even in the countries with statutory national minimum wages, there are often provisions allowing sub-minima for specific groups, or even exclusions. But again, the most important difference in the scope of minimum wages is associated with the divide between the statutory and collectively agreed models. In the pure collectively agreed model, only the workers covered by collective agreements are affected by the minimum wages: although most of these countries have very high levels of collective bargaining coverage (above 80%), in some cases (such as Germany) the coverage is much lower (around 60%), which leaves many workers unprotected. In some of the countries with the collectively agreed model, they solve this problem (at least partly) by different means, such as extending the collective agreement if half of the industry is covered (in Finland) or making it an obligation to be member of an employer organization (in Austria). In the statutory system, on the other hand, the coverage tends to be comprehensive but often allows sub-minima for specific categories, typically young workers (in all countries except Portugal and Spain) and/or apprentices. There are other types of differentiation in particular cases, such as for disability in France or Portugal, for unskilled workers in Luxembourg or for managers and unmarried workers in Greece (Eldring and Alsos 2012).

Assuming that the EU policy would require a universal wage floor, perhaps with a subminimum for young workers (as already exists in most countries), the biggest changes would again take place in the countries where minimum wages are set by collective agreement, because it would mean a significant expansion of coverage; for countries with the statutory system, it may require eliminating some national specificities in some cases, but it would probably not have a very large impact.

4. Enforcement. Obviously, if there are wide differences in the degree of enforcement of the minimum wage provisions, the institutional difficulties of EU-wide coordination would increase considerably. Although some relatively well-known facts (the differences in the size of the informal sector or the existence of bogus self-employment) do point to differences in enforcement across Europe, there is no reliable source of comparable data for this matter, so it is really difficult to evaluate in this context. Drawing on Eurofound's Network of Correspondents,[25] we have compiled some exploratory information on this issue.

[24] In some countries, there is also some regional differentiation (for instance, in Bulgaria and Finland).

[25] The information used for this section comes from the forthcoming Eurofound publication "Pay developments into the 21st century, Comparative Analytical Report.

The enforcement of minimum wage levels is a legal requirement which obviously depends on the judiciary system (once an employee reports a violation of employment regulation) and on the monitoring capacity of each country, typically through labour inspections. Data on non-compliance is rare also at the national level and has been publicly documented only in some countries: Ireland (based on 1,169 inspections in 2011, more than 100 cases of pay breaches were found); UK (around 1% of the labour force was estimated to be earning wages below the national minimum wage in 2010, according to estimates from the Office for National Statistics); Poland (3% of employers under inspection paid wages below the minimum wage in 2003); and Netherlands (only 0.3% of the employees earned less than the legal minimum wage they were entitled to according to a study in 2006). Several factors influence the potential amount of people paid under legal requirements. In countries where many employees are paid at around minimum wage levels, the probabilities to find underpaid workers may be higher. For instance, in Spain less than 1% of employees were paid minimum wages in the period 2004-2009, which may suggest few people should be paid under minimum wage levels. Nevertheless, another potential factor is the size of the black economy, where the minimum wage is less likely to be observed. Several countries report cases where employment relationships take place between parties not bound by employment contracts, such as Romania and Bulgaria, where the share of employees without a labour contract was estimated at 3% in 2012 (from 6% in 2003). Illegal practices typically concentrate in certain branches such as construction, catering, retail or repair (as reported in the Czech Republic or France, where some cases in large retail companies occurred). Moreover, a specially vulnerable group may be migrant workers, typically in the construction sector (as reported in The Netherlands, Finland and Belgium). A further issue of concern reported in some countries (Hungary or Lithuania) is part-time working, since employees may be in fact working longer hours than those stated in their contracts.[26]

Of course, a very important axis of divergence across Europe, that would have a very significant impact as well on the difficulty of establishing a coordinated EU minimum wage policy, is the current levels and their distance to the hypothetical common target. But that particular point will be analised in detail in the next section, so we will not discuss it here.

So in terms of the institutional difficulty, or potential institutional impact of EU minimum wage coordination, we can summarize by dividing the countries in three categories:

1. High degree of institutional impact or difficulty: Denmark, Sweden, Finland, Austria, Germany and Italy. These are the countries with collectively agreed minimum wages, and there are superimposed difficulties across most of the axes previously mentioned: the discussed policy could involve a disruption of national industrial relations traditions or require a high degree of coordination from all economic actors; it would probably eliminate existing sector and company differentials with respect to minimum wage levels; and it would expand the coverage to make it universal.
2. Intermediate degree of institutional impact or difficulty: Belgium, Estonia, Poland, Bulgaria, Slovakia, Greece and Cyprus. Most of these countries have also collectively agreed minimum wages, although at the national level and with universal coverage, and

[26] A final point to note with respect of enforcement is that it can be itself affected by the system and scope of the minimum wage regulation: a single universal wage floor facilitates enforcement. For instance, in the German case it has been argued that the existence of very different levels across sectors and firms complicates enforcement significantly (Bosch and Weiskopf 2011).

therefore occupy an intermediate position with respect to the rest of Europe. Cyprus is a peculiar case, with an underlying occupation-specific statutory minimum wage for some cases and collectively agreed minimum wages.

3. Low degree of institutional impact or difficulty: France, Spain, Portugal, Netherlands, Lithuania, Latvia, Romania, UK, Ireland, Hungary, Czech Republic, Luxembourg, Slovenia and Malta. In these countries, minimum wages are set by government regulation and have more or less universal coverage, and therefore the EU coordination would be considerably simpler than in the previous cases (though of course, not irrelevant).

A final point to be made is that this differentiation of countries according to the institutional difficulty of establishing a coordinated EU minimum wage policy would also be relevant if such policy is implemented by "soft law". Although that would require less institutional change in the countries with collectively agreed minimum wages (the existing diversity of systems could be kept almost totally intact: each country could move towards a commonly agreed target through its own means), it would certainly be easier to achieve in countries with a statutory system, since it would just be a matter for the government to adapt the necessary regulation (whereas in the countries with collectively agreed minimum wages it would require a commitment from many different actors and a considerable degree of coordination at the country level itself).

Box 2: The debate on minimum wage in Germany

Since the mid-1990, the low-paid sector seems to have grown significantly in Germany, reaching more than 20% of the employed population according to recent estimates (Kalina and Weinkopf 2010). This is linked to the development of minimum wage systems after the reunification, with rapidly declining coverage rates and weaker collective bargaining structures (Bosch and Weinkopf 2012).

Against this background, in 2005 the grand coalition (Christian Democratic Union, Christian Social Union of Bavaria and Social Democratic Party) created two procedures by which industry-specific (binding) minimum wages could be created. But there has been little progress, especially in industries without collective bargaining or with low coverage. As a consequence, different minimum wages coexist with large segments of the workforce not covered by any minimum rate: coverage of employees by industry-wide collective wage agreements in was 56% in West Germany and 37% in East Germany in 2010 (IAB 2011). Since company-level agreements covered a small proportion of employees (7% in the West and 13% in the East), 37% of employees in the West and 51% in the East are not covered by collective agreement. This explains why the debate over the establishment of a statutory minimum wage is gaining momentum in Germany in recent years.

Part 2: A simple accounting exercise

4. Methodology

The key objective of this "accounting exercise" will be to try to quantify the number of workers that are currently below the threshold established by a hypothetical common EU minimum wage policy (EUMW from now on) that we will fix at 60% of the median wage in each member state, and to identify the types of companies, jobs and individuals that would be most affected. For carrying out such an exercise, we will use the two main existing EU-wide surveys on income and wages, the 2010 European Survey on Income and Living Conditions and the 2010 European

Earnings Structure Survey. In this section, we will document the main methodological decisions that we had to make in order to carry out our analysis, and the limitations imposed by the data.

4. a. Some definitions

Normally, the threshold established by minimum wages refers to gross earnings before taxes or other statutory deductions, including not only the base salary but also premia and bonuses, except if they refer to non-standard work hours or overtime, and excluding payments in kind (OECD 2003). It is normally defined in terms of an hourly rate, or monthly earnings adjusted for hours worked (so that equivalents for different working hours can be computed). These are the attributes that should characterize our target measure of wages, upon which the common EU threshold shall be defined. But of course, our analysis will be constrained by the characteristics of the data available, and the actual measures of wages we use will not be identical to this definition. In the following pages, we will provide details of any departure from such definition, and their potential implications.

The key element of all the analysis in this paper is the identification of the wage level that correspond to 60% of the median in each country, and of the workers that fall below such threshold. In this respect, we simply use the most commonly used threshold in the literature, which roughly corresponds as well with one of the most widely used definitions of low-paid workers[27] (so we can say that establishing such a threshold would mean the statutory elimination of low-paid work in Europe, at least according to a common definition). The use of the median rather than the mean is normally justified by the excessive sensitivity of the latter to outliers in the distribution of income. Relatively few very high individual earnings can skew upwards the mean and therefore lead to an very high threshold: in fact, when a minimum wage threshold is proposed with reference to the mean it tends to be lower than when it is proposed with reference to the median[28] (50 or 55% rather than 60%). In a recent proposal, ETUC defended taking both into account (ie, either 60% of the median or 55% of the mean, whichever is highest), which has interesting implications (after all, it could be argued that the minimum wage level should take into account the existence of very high wages, even if they can statistically be considered as outliers). In any case, in this paper, we will follow the most frequent approximation based on the median, both for reasons of simplicity and for its superior statistical robustness (the precision in the measure of high wages is always much smaller, so it is better to use an approach that is less affected by them).

4. b. The European Survey on Income and Living Conditions (EU-SILC)

The EU-SILC is a cross-sectional and longitudinal database on income, poverty, social exclusion and living conditions in the EU, which is coordinated by EUROSTAT drawing from different sources at the national level. It is representative of all private households and their current members residing in the territory of the countries at the time of data collection. It is a very rich source in terms of the information it contains, it has a reasonably big sample and it has the

[27] For instance, the OECD defines low-pay as two-thirds of the median.

[28] Another important problem of using the mean as reference is that it would change by the establishment of such minimum wage ipso facto, leading to a spiral of ever-increasing wages for purely mathematical reasons. The median is not mathematically increased by increasing the wage floor, although it may in practice go up as well for spillover effects.

advantage of incorporating both a longitudinal perspective and a household perspective, on top of the more usual individual cross-sectional perspective. The main problem that this source has for our purposes is that it is not really aimed at measuring wages as such, but income coming from employment at the individual and household level. Therefore, with the EU-SILC we cannot construct a measure of wages that matches completely the definition given above, but only an approximation that requires making some non-trivial assumptions.

The variable on labour income in EU-SILC refers to overall income from work in the previous calendar year, measured in gross terms (some countries, but not all, also provide net). Since we use the latest available cross-sectional wave from 2010, the income variable actually refers to 2009. This variable poses the following problems for our purposes:

1) It does not necessarily refer to a job in particular, since it measures any labour-related income. So in fact, it can come from more than one job if the respondent had more than one job in the previous year, either successively (ie, if she changed jobs) or simultaneously (ie, if she had multiple jobs). The share of employees with more than one job in the countries included in EU-SILC in 2010 was 4.73% (ranging from nearly 9% in Poland to less than 2% in Bulgaria). The share of employees who changed jobs in the year used as reference for the income variables is 8% (ranging from 14% in the UK to 2% in Romania). So although this problem is not enormous, it can have significant implications for the results, which have to be taken into account.

2) The survey collects some information about the *current job* which is necessary for our analysis (for instance, sector or occupation), but the current job does not necessarily coincide with the job or jobs to which the variable on labor income refers. As mentioned before, around 8% of employees changed jobs last year, and all of them are potentially affected by such discrepancy.

3) A final important problem is that a significant proportion of responses is imputed, for different reasons (in some cases, it may be item non-response; in others, that the information is collected on a different basis) and through different procedures depending on the country. Although there is a variable that flags imputed values, it is not consistently coded, so it is very difficult to evaluate the implications of this problem (Brandolini et al. 2010). Nevertheless, this is a problem which is not specific to our analysis but which applies to anyone using EU-SILC data.

To transform the EU-SILC variable of labour income into a variable fit for our purposes, we apply the following formula (based on Brandolini et al. 2010):

$$\text{Monthly ft eq. gross wage} = \frac{\text{annual cash gross earnings}}{\text{months in ft jobs} \; + \; (\text{months in pt jobs} * [\text{pt/ft ratio}])}$$

That is, our main variable will be monthly full-time equivalent gross wage, which equals the EU-SILC variable of annual cash gross earnings (last year) divided by the number of months in full-time jobs of the respondent over the same year plus the number of months in part-time jobs multiplied by a country-sex specific ratio of median hours of work in part-time jobs to median hours of work in full-time jobs.[29]

To adjust for the potential bias introduced by workers that hold more than one job, we make a further adjustment to the previous figure by multiplying it for a ratio of the hours worked in the first job to the total hours of work (ie, in all jobs). This involves the assumption that the person

[29] This necessary adjustment for part-time work can produce some minor bias in countries where the hours of part-time work are highly spread (such as the UK), but it is highly unlikely to change the overall picture.

had the same work arrangements over the previous 12 months as she has now, which is not necessarily true but is reasonable (and unavoidable unless we prefer to ignore the problem of multiple job holders). No further adjustments are made to deal with the problem of workers that changed jobs over the reference period, because it is simply impossible to know how much of last year's labour earnings can be attributed for each job. We do know how many months did they work (so we can exclude from the denominator the months in unemployment or inactivity), but not how many of them correspond to each job if they changed over the year. What this means is that for anyone that changed jobs last year (around 8% of the total sample, as previously mentioned), our base variable collects the average wage for all jobs over the last 12 months, which is a good approximation to the extent that those that changed jobs maintained a similar wage level.[30]

4. c. The European Structure of Earnings Survey (SES)

The European Union Structure of Earnings Survey has been conducted every four years since 2002, and collects representative and harmonized data on wages in enterprises with more than 10 employees in all sectors except agriculture, fishing, public administration, education, health and community and social services. The inclusion of small enterprises and the above mentioned sectors is optional for the participating countries, and in fact many of them opted for such comprehensive coverage in the last edition of the survey (2010), which is the one we will use here. Although the actual method for collecting the information can differ considerably across countries (between specific surveys and administrative registers), in all cases it is collected at the company level and based on payroll data (rather than on workers´ responses). The sample is representative of both enterprises and workers in the covered sectors and company sizes.

The SES has many obvious advantages over the EU-SILC for our purposes, but it has some important problems too, which is why we will use it mostly as secondary source to complete the picture. Its main advantage is that it is a survey explicitly aimed at measuring wages with a high degree of detail, whereas EU-SILC measures labour income and only secondarily. What this means is that our target variable can be constructed in a much more direct and precise way, with very little need of resorting to heroic assumptions. The problem of multiple and changed jobs does not apply either, because the data refers to jobs rather than workers (even if someone had more than one job, the information would be correctly gathered for each of them). The sample is also considerably bigger in most countries, and the degree of imputation is in principle much smaller (although the documentation of the data does not say much about this explicitly).

But on the other hand, it has the important problem of providing only a limited coverage of our target population (European Union workers). We only could only get access to SES data for 19 countries of the EU.[31] And furthermore, for some countries the SES does not include small enterprises nor many important sectors of the economy. The exclusion of small enterprises is specially problematic (affecting 7 of the 19 countries), because we know that low-paid workers are overrepresented in such companies.

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[30] Using the longitudinal module of the EU-SILC, we could check directly how reasonable was this assumption, by comparing the wage in the previous and current year for those that changed and did not change jobs. The average wage increase of those that changed was only marginally above that of those that did not change (5.1% increase versus 5%). Furthermore, 55% of those that changed did so within the same 2-digit occupation (in which case the increase in pay was even smaller); only for the remaining 45% (who changed job and occupation) was the increase in pay relatively significant (6.3% versus 5%). Overall, not adjusting for those that changed jobs is likely to lead to an inconsequential upwards bias, at most.

[31] The unavailable countries were Germany, UK, Austria, Malta, Bulgaria, Greece, Denmark and Belgium.

The measure of wages that will serve as basis for our analysis is in this case very precise and corresponds more or less exactly with the target variable defined previously, according to the following formula:

$$\text{Hourly wage} = \frac{\text{monthly wage} + \text{monthly eq annual bonus} - \text{overtime pay} - \text{shiftwork pay}}{\text{monthly working hours} - \text{overtime hours}}$$

> *All variables except the monthly equivalent annual bonus refer to last month (adjusted for cases of partial unpaid absence). The monthly equivalent annual bonus is calculated as the total annual bonus received last year divided by the number of months worked last year.*[32]

Although the measure of wages in SES is much better, the impact of excluding significant segments of the economy is very important. On the one hand, it affects the calculation of the median hourly wage that serves for the definition of the threshold: to the extent that, for instance, the proportion of low-paid workers is larger in small firms, excluding them will tend to increase the median, and consequently the threshold (which on its own, would make it easier to fall below it). On the other hand, if there are more low-paid workers in small enterprises, excluding the latter would reduce the share of people falling below the threshold directly. Therefore, both effects may cancel out to some extent: but in practice, as we will see later, in most countries excluding small companies tends to reduce the proportion of workers falling below the 60% of the median threshold.

5. Evaluating the impact of a hypothetical common EU minimum wage threshold

5.a. How much change from existing minimum wage levels?

A coordinated EU minimum wage policy would not start from scratch, but from the existing systems and levels of minimum wages in each member state. It is very important, therefore, that we start with by contextualizing the hypothetical common EU minimum wage with the existing arrangements in each member state.

Tables 2 and 3 present the basic data that we will discuss in this section. The first column of both tables shows the existing levels of minimum wage (for 2009 and 2010, the base years for the two sources that we will be using). In the case of countries with statutory minimum wages, this information was obtained from Eurostat and has a simple and direct interpretation: these are the actual levels, in euros, below which no employment relation is permitted (though there may be exceptions). In the countries with collectively agreed minimum wages, the figures shown in the tables are just an approximation that we will use for comparative purposes, drawing on an estimation by Kampelmann, Garnero and Rycx (2013). In strict terms, there is not such a thing as a national monthly minimum wage in those countries, but rather different minimum wage levels in different sectors and/or occupations which do not necessarily apply to the full working

[32] Since SES data allows to calculate hourly wages with precision, there is no need to adjust for part-time work.

population. In the majority of literature on this issue, the effective levels of minimum wages in those countries are thus simply unknown, even if they do exist. In a recent paper, Kampelmann, Garnero and Rycx[33] gather data from sectoral agreed minimum wages for those countries, and estimate an *average effective minimum wage level* for the workers covered by collective bargaining.[34] Even if such information has to be handled with care because of the reasons mentioned, it is extremely useful for comparative purposes, and will allow us to provide a full picture in our simple accounting exercise. If we compare the values of such countries with the median wages shown in the next column of both tables, we can see that in most cases they are higher than in countries with statutory systems, even if they do not apply to the full labour force.[35]

	(1) Monthly minimum wages, 2009	(2) Median monthly wage 2009, EU-SILC	(3) EU minimum wage threshold (60% median)	(4) Share of workers below the EUMW	(5) Share of workers below the existing national MW	(6) Relative difference between existing MW and EUMW [(2-1)/1]
AT	1388.3	2414.0	1448.4	14.6%	7.3%	4.3%
BE	1387.5	2771.2	1662.7	9.6%	3.0%	19.8%
BG	122.7	281.2	168.7	12.2%	1.0%	37.5%
CY	822.1	1587.8	952.7	15.7%	6.3%	15.9%
CZ	297.7	746.5	447.9	10.9%	0.4%	50.5%
DE	1379.1	2500.0	1500.0	24.5%	16.7%	8.8%
DK	2341.0	3741.7	2245.0	10.0%	6.6%	-4.1%
EE	278.0	632.3	379.4	18.9%	0.9%	36.5%
ES	728.0	1625.9	975.6	13.0%	2.7%	34.0%
FI	1584.3	2665.4	1599.3	6.8%	1.7%	0.9%
FR	1321.0	2036.7	1222.0	12.0%	8.1%	-7.5%
GR	817.8	1515.5	909.3	11.4%	3.2%	11.2%
HU	268.1	458.0	274.8	12.1%	2.1%	2.5%
IE	1461.9	2858.4	1715.1	19.7%	6.8%	17.3%
IT	1788.0	1951.8	1171.1	13.8%	18.9%	-34.5%
LT	231.7	441.8	265.1	24.2%	9.6%	14.4%
LU	1641.7	3678.4	2207.0	23.5%	3.2%	34.4%
LV	254.1	543.6	326.1	22.0%	3.6%	28.3%
MT	634.9	1315.7	789.4	12.7%	2.3%	24.3%
NL	1381.2	3198.9	1919.4	13.5%	2.8%	39.0%
PL	307.2	537.8	322.7	16.4%	4.8%	5.0%
PT	525.0	912.3	547.4	7.8%	1.9%	4.3%
RO	149.2	272.5	163.5	10.4%	1.1%	9.6%
SI	589.2	1302.1	781.2	13.2%	2.2%	32.6%
SK	295.5	600.0	360.0	8.4%	1.0%	21.8%
UK	995.3	2098.3	1259.0	18.9%	5.7%	26.5%
	Source for (1): GKR estimate for countries with non-statutory minimum wage (AT, CY, DE, DK, FI, IT), Eurostat for the rest. DE figure is for 2007, adjusted for inflation; CY figure is an average 2008-2009. All other figures from EU-SILC 2010, cross-sectional.					

Table 2: Basic figures on minimum wages in 2009, EU-SILC

[33] We are very grateful to Garnero, Kampelmann and Rycx for having kindly provided us with such estimations, so that we could use it in this report.

[34] An alternative possibility would have been to use the lowest sector-level minimum in these countries. The sector-level average tends to overstate its value relative to universal systems, whereas the lowest minimum tends to understate it. We prefer to stick to the average, the measure preferred by Garnero, Kampelmann and Rycx.

[35] According to Garnero, Kampelmann and Rycx 2013, the coverage of collective bargaining in those countries is: 76% in Austria, 56% in Germany, 52% in Denmark, 79% in Finland and 82% in Italy. They provide no estimation for Sweden.

	(1) Monthly minimum wages, 2010	(2) Median monthly wage 2010, EU-SES	(3) EU minimum wage threshold (60% median)	(4) Share of workers below the EUMW	(5) Relative difference between existing MW and EUMW [(2-1)/1]
CY	822.1	1774.9	1064.9	16.7%	29.5%
CZ	302.2	860.5	516.3	12.6%	70.8%
EE	278.0	734.7	440.8	18.4%	58.6%
ES	738.9	1869.7	1121.8	9.0%	51.8%
FI	1584.3	2848.2	1708.9	3.1%	7.9%
FR	1343.8	2520.0	1512.0	3.4%	12.5%
HU	271.8	624.7	374.8	14.5%	37.9%
IE	1461.9	3120.0	1872.0	15.7%	28.1%
IT	1788.0	2262.9	1357.7	7.0%	-24.1%
LT	231.7	468.0	280.8	21.4%	21.2%
LU	1682.8	3282.9	1969.8	9.4%	17.1%
LV	253.8	511.8	307.1	20.8%	21.0%
NL	1407.6	2921.3	1752.8	13.7%	24.5%
PL	320.9	758.3	455.0	17.8%	41.8%
PT	554.2	1029.5	617.7	7.6%	11.5%
RO	141.6	358.6	215.1	20.8%	51.9%
SI	597.4	1446.2	867.7	9.1%	45.2%
SK	307.7	705.5	423.3	13.2%	37.6%
	Source for (1): GKR estimate for countries with non-statutory minimum wage (CY, FI, IT), unadjusted 2009 values, Eurostat for the rest (2010). CY figure is an average 2008-2009. All other figures from SES 2010.				

Table 3: Basic figures on minimum wages in 2010, SES

The third column of both tables shows the value that would have corresponded in 2009 and 2010 to the hypothetical common EUMW threshold of 60% of the median. Comparing this value with the one in the first column we can get an idea of how much impact would such coordination have in practice. Figure 1 shows such comparison graphically, with the hypothetical EU level in the horizontal axis and the existing level in the vertical axis, and a diagonal line where both values are the same. The distance to such diagonal line reflects the amount of change that would be required by a hypothetical coordination of minimum wages, and the position with respect to the diagonal whether the change would be positive or negative.

To remind the reader of the difference between the countries with and without statutory minimum wages at present, the latter are indicated with a different marker (a star). These figures clearly show that the introduction of a common target of 60% of the median would entail an increase in the existing levels for many European countries, quite significant in a few cases (such as Netherlands, Luxembourg, Spain, the UK and Ireland, and most Eastern member states). There are some exceptions, though: the clearest one is Italy, where the average collectively agreed minimum wage level estimated by Kampelmann, Garnero and Rycx is so high that a common EU threshold of 60% of the median would be considerably smaller. We must remember, though, that such minimum wage is just an average and that it does not cover the whole Italian labour force: so that the coordination of minimum wage policy would also lead to a significant increase of wages in the bottom in Italy, as we will see later. The other two countries that are above the diagonal (France and Denmark) are so close that we can only say that the establishment of a common EU threshold of 60% of the median would have very little or no impact on levels in those countries, as would be also the case in other countries such as Finland, Austria, Germany (where again, the main impact would be in terms of coverage), Portugal, Hungary, Poland, Romania and Greece.

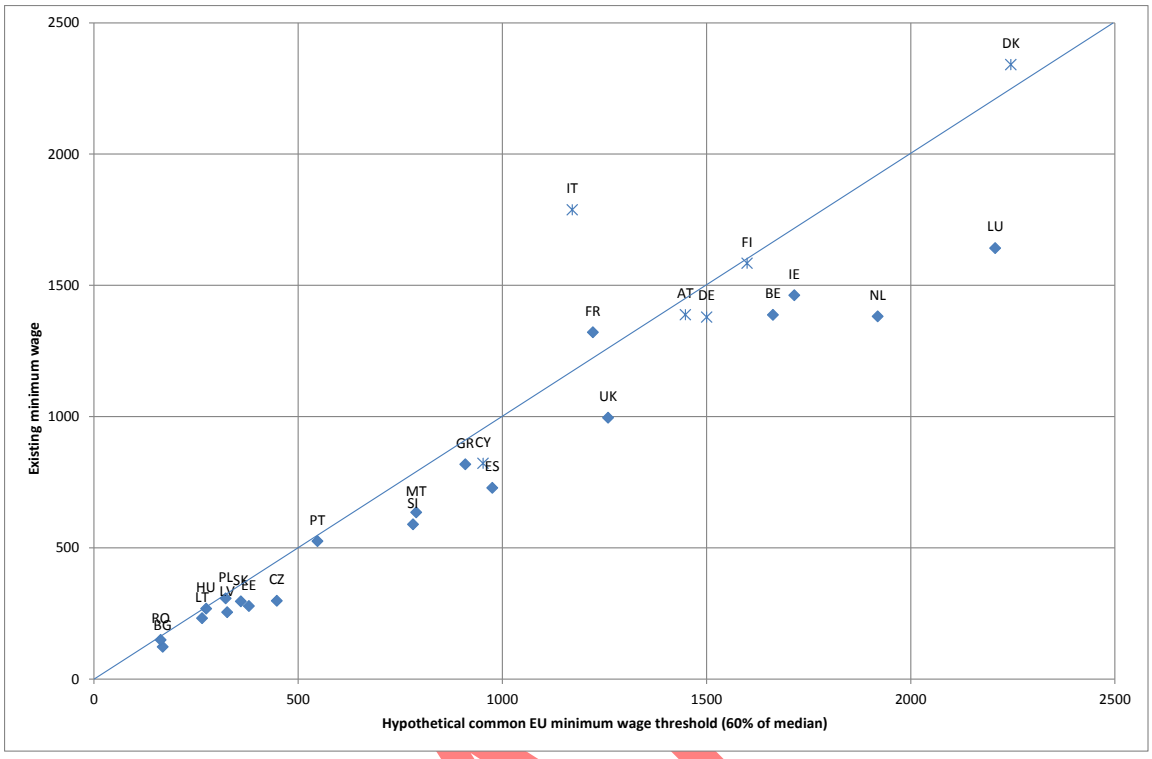

Figure 1: Existing minimum wage vs. hypothetical EUMW, 2009 (SILC data)

The key variable throughout this report will be the share of workers below the hypothetical common EU minimum wage level in the different countries (as well as sectors, etc). A preliminary approximation to this variable is shown in column 4 of tables 2 and 3: it can be easily seen that in nearly all countries, there would be a significant amount of workers below such threshold, whose wage would therefore increase if such a policy would be implemented. According to the EU-SILC, in most countries the share of workers below the threshold is between 10 and 15%, with several countries around or above 20% (the Baltics, UK and Ireland, and Germany). We will discuss these figures in detail in the next section: for the moment, we want to put them in the context of the share of workers below existing minimum wage levels, which illustrates the point made before about the difference between countries with and without statutory minimum wages. Column 5 of table 2 (only available for EU-SILC data) shows the share of workers below existing minimum wage levels in 2009 (using as threshold 75% of the value shown in column 1, following Kampelmann, Garnero and Rycx 2013)[36]: as we can see, in nearly all countries the share of workers below the existing minimum wage level is below 5%,

[36] The existence of a statutory minimum wage tends to create a spike in the distribution of wages around such minimum wage level, to the extent that at least some of the jobs that would otherwise have lower pay tend to accumulate at the minimum level. Since the measure of wages in surveys is not totally precise, using the exact value of the minimum wage as the threshold for identifying who earns less than that is likely to misclassify a large number of workers who are precisely around the threshold. For that reason, it makes sense to specify a slightly lower figure, such as 75% of the official value, which is safely below the spike and therefore minimizes the number of wrong identifications, as done by Garnero, Kampelmann and Rycx 2013. The same logic does not apply to the hypothetical EU minimum wage level of 60% of the median, because such value has no applicability nowadays and therefore there is no spike around it. Of course, there will be some misidentified cases, but they are likely to even out because they will be both above and below the threshold. In the next section, we will see some graphic evidence of this spike and its relationship with existing minimum wage levels.

which suggests both a high level of compliance and that they are so low that they have very little effective impact. As for the countries where there is more than 5% of workers below the existing minimum wages, most of them have non-statutory or non-national minimum wages (Italy, Germany, Denmark, Austria and Cyprus), which means that the issue at stake is not compliance but coverage, and the existence of specific minimum wages which can be significantly below the overall national average. Only in France, Lithuania, the UK and Ireland there is both a statutory national minimum wage and a significantly high share of workers below such threshold, which may result from non-compliance or the existence of sub-minima for specific groups (such as younger workers).[37]

5. b. How many workers would be affected?

The most obvious indicator of the scale of the impact of a hypothetical common wage floor is the percentage of workers below such threshold. As we explained in the methodological section, the lack of a dataset measuring wages for the full labour force in the different countries forces us to compare the results using two different datasets (EU-SILC and SES), which complicates the picture but allows us to make a more correct evaluation of the potential impact of such a hypothetical minimum wage coordination. Figure 3 below shows the proportion of workers below 60% of the median wage in each country according to the two sources, including different specifications of the Structure of Earnings Surveys. We will discuss this complicated figure in some detail, to be able to provide later a simple but faithful classification of countries.

As mentioned earlier, the source that provides a better measure of wages and a larger sample size is the Structure of Earnings Survey. The problem with this source is that it does not cover the whole economy (leaving out small firms and public administration, most importantly), and also that we could not get access to data for all countries. In figure 2, the countries have been sorted according to the base figure of SES (ie, excluding establishments with less than 10 employees and public administration), identified by a black square marker; the countries for which we do not have SES data are shown separately at the right-hand side of the chart, sorted by the share of workers below the EUMW threshold according to EU-SILC. The EU-SILC figure is indicated by a diamond in the chart. The next two markers correspond to different specifications of the SES dataset, which are available only in some countries but are informative. The star shows the share of workers below the EUMW threshold according to the SES for establishments of all sizes (for the countries that provide such data); the line marker identifies the share of EUMW workers according to SES including public administration (again, where such data is available). Finally, the circle symbol is used only for the countries for which we did not have access to SES data, but for which Eurostat itself has published a figure which is similar to ours: the percentage of workers below 2/3 of the median in each country (for establishments with more than 10 employees, excluding public administration). We include such data to be able to evaluate roughly the consistency between our two sources for those countries as well.

[37] As well as some of the measurement problems mentioned earlier in section 4.

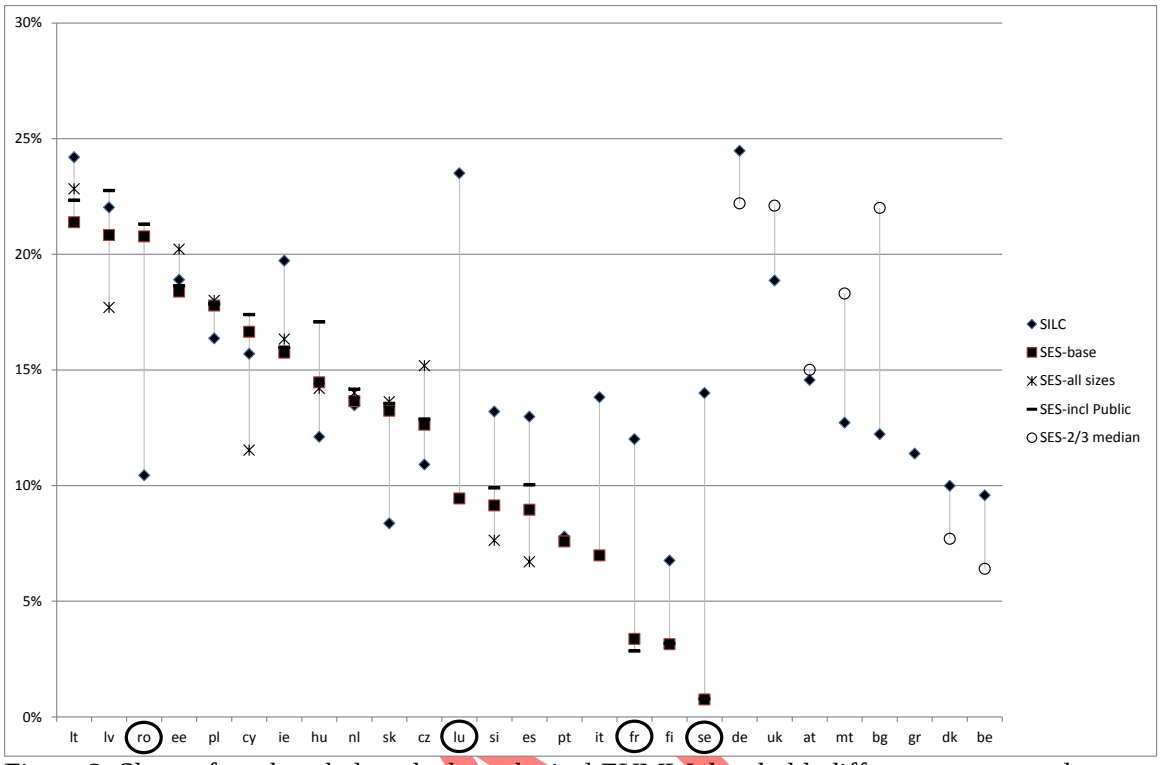

Figure 2: Share of workers below the hypothetical EUMW threshold, different sources and specifications

In general terms, the consistency between the different specifications of the SES data is higher than the consistency between SES and SILC. What this suggests is that the differences between both sources are not so much the result of their differences in coverage (SILC covering the whole economy and SES generally not) but the result of differences in the measurement and specification of wages. That said, the inconsistency between SES and SILC in the country comparison seems to be concentrated in a few countries, which are highlighted in the figure (by a circle around the country label). In the majority of countries, the inconsistency is much smaller and seems reasonably within the boundaries of what we would expect according to the different specification of variables. This will be useful for the classification of countries in terms of the scale of the impact of a hypothetical EUMW policy, because in most cases the use of one or the other source would not make much difference.

In a few countries, nevertheless, the inconsistency is quite important, so it justifies a more detailed discussion:

- Romania: in this case, the share of workers below the EUMW threshold is significantly lower (around half) according to EU-SILC than according to SES. The SES does not cover small establishments in this country, but EU-SILC does, so we can check whether the exclusion of small firms may biases the SES results. Romania is one of the countries were (according to EU-SILC) low pay is *less* concentrated in small firms: 24% of low-paid jobs are in small firms, compared to 15% of the rest of jobs (in most other countries, the difference is bigger).The difference in the median wage of small establishments and the rest is not very big either. So the problem is probably not that the SES results are biased by the exclusion of small firms, but the different specification of the variable of wages, which is not very good at SILC. Although we do not have SES data for Bulgaria, it seems that this country would have a similar problem.

- Luxembourg: in this case, the inconsistency goes the other way. According to SILC, the share of low-paid workers is nearly two and a half times larger than according to SES. Contrary to Romania, in Luxembourg there seems to be quite a strong bias in the share of low pay in small and large establishments: nearly 40% of workers in small establishments in Luxembourg are low paid according to SILC, compared to less than 20% in the rest. The median wage is also much smaller (one third difference). So in this case, the SES result may be biased downwards by its exclusion of small establishments, even if the SILC estimate may seem excessively high.

- France and Italy: similar to Luxembourg, there is a significantly higher share of low pay in small establishments in these companies, so the inconsistency between our two sources may point to an excessively low estimate with the SES data. The bias in the actual median values is less important, though.

- Sweden: in this case, the SES figure is extremely low, almost negligible (less than 1%), whereas the SILC figure would put this country around the middle of the chart. In this case, both SES and SILC seem to provide biased results, in opposite directions. In the case of SILC, the Swedish data does not collect gross earnings as in most countries, but net and subsequently imputed: the imputation process seems to have generated an implausibly high proportion of low-paid workers.[38] But the SES base estimation also seems problematic, in this case because the figures for working hours seem implausibly low for many low-paid workers (our base wage measure is calculated as an hourly rate, and therefore would tend to inflate the estimation if hours are too low). We can see such problem by comparing the base SES estimation (the black square marker) with the SES estimation based on annual wages, which is normalized in terms of full-time equivalents rather than working hours. These two magnitudes are very similar in most cases (normalizing by hours or full-time equivalents does not make a big difference), except in the case of Sweden, where one produces less than 1% of low-paid workers and the other more than 5%.

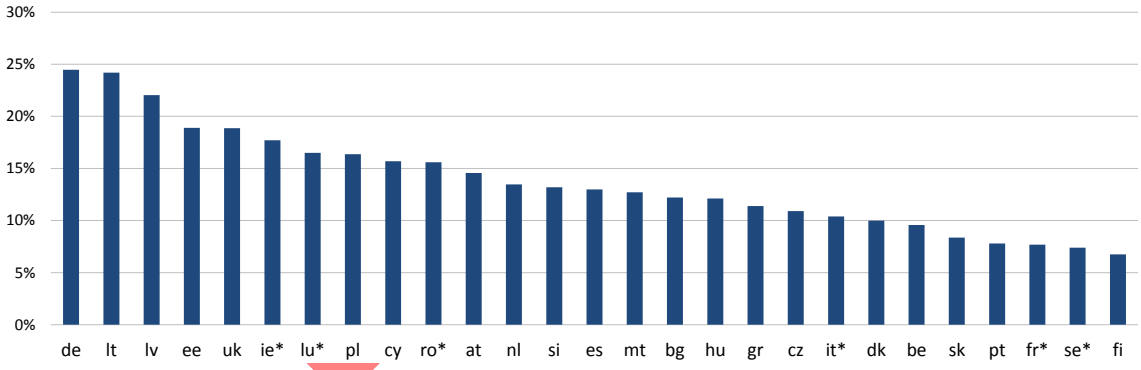

Figure 3: Share of workers below the hypothetical EUMW threshold, final assessment.
*Source: 2010 EU-SILC, except * (average between EU-SILC 2010 and SES 2010 figures, because of inconsistency between the two sources)*

[38] SILC provides extremely limited documentation of these issues. According to the SILC dataset, all the results for Sweden were only collected net, which would mean that the variable of gross labour earnings that we are using here has been imputed: but in fact, the associated imputation factor has a value of 0 for Sweden, which would mean that there was no imputation at all. Does it mean that the Swedish figures for labour earnings in SILC are only provided net? We could find no mention of this in the SILC quality report or anywhere else. France is the only other country with a similar problem in SILC, although the bias seems not so large in that case.

Taken into account these problems, figure 3 provides a final assessment of the share of workers below the threshold of 60% of median national wages, which shall serve us later for classifying countries. The basis for the numbers behind this figure is EU-SILC for most countries, with the exception of the already discussed problematic countries, for which we use the average between the EU-SILC and the baseline SES result.

Box 3: An alternative threshold based on 50% of average wages in each country

As mentioned earlier, using the median or the average as reference for the EUMW threshold can lead to important differences. The median is insensitive to the extent of inequality in the upper tail of the distribution (in fact, in the bottom as well, since the median simply refers to the wage that occupies the exact middle of the distribution, separating the 50% of the workforce earning more from the 50% earning less), while the average is very sensitive to it. Since wages tend to have a very skewed distribution, with many workers earning relatively low wages and a few earning very high ones, the average is higher than the median wage in all EU-27 countries according to EU-SILC, ranging from around 25% higher or more (Portugal, Lithuania, Latvia, UK, Estonia) to less than 10% higher (Germany and Denmark).

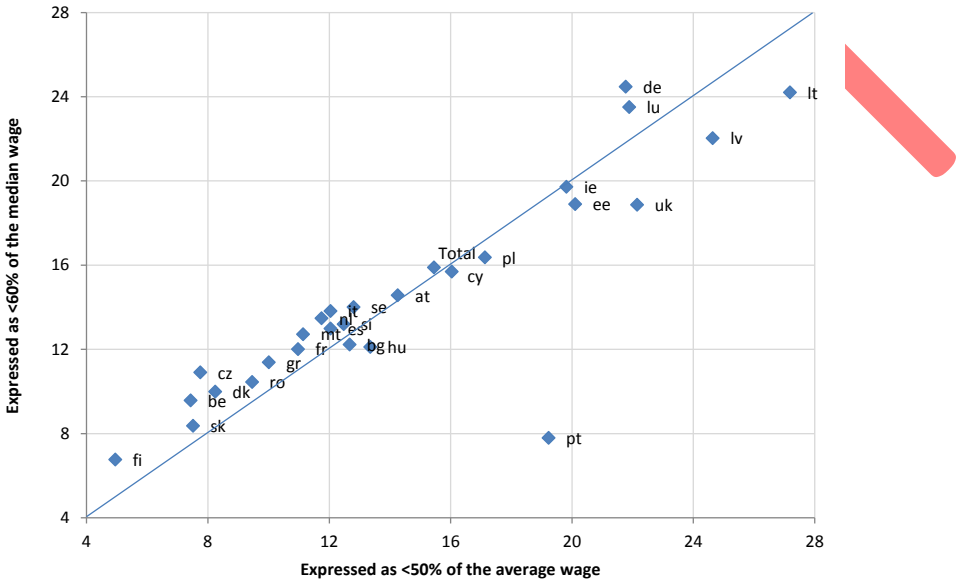

Figure X. Proportion of employees under the average-based EUMW threshold

Since countries are characterized by different wage distributions, they can be ranked differently depending on what measure is used. Using as reference for the EUMW threshold the average rather than the mean, therefore, can lead to some differences in the impact across different countries. To test this, we have recalculated our basic measure using **50% of the average** rather than 60% of the median (following some existing proposals: see section 2 of this report). Figure X shows the proportion of the workforce that would be affected in each of the EU-27 countries according to the two different methods of calculating the EUMW threshold. In most countries, the difference is very small, but there are a few where it is quite significant: the most extreme case is Portugal, where the share of workers below 50% of the average is more than twice the share of workers below 60% of the median. The share of workers below the average-based threshold is also significantly higher in the UK, Latvia and Lithuania. These are countries characterized by a high degree of wage inequality and therefore by an average much larger than the median.

Box 4: A sector-specific minimum wage threshold

The baseline scenario for our accounting exercise assumes a single wage floor for each country, relative to the median for the whole economy. Alternatively, the threshold could be referenced to the median wage in each sector. Although we are not aware of such a proposal in the debate, this alternative could in principle have some advantages: the effect on the wage distribution could be more similar to that of the collectively agreed system (which is sector-specific as well), and it could pose fewer problems for competitiveness and profitability, theoretically being more in line with sector wage differentials and therefore with productivity. The following chart shows the share of workers affected by a national minimum wage (set at 60% of the median wage in each country, our baseline scenario in this report) and by a sector-specific minimum wage[39] (set at 60% of the median wage in each sector and country). As we can see, the difference in the overall share of workers affected would be very marginal.

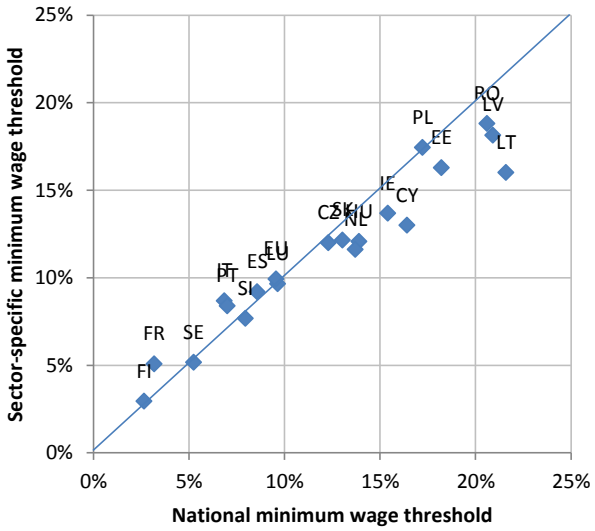

Figure x: National vs. sector-specific minimum wage, share of workers affected (SES 2010 data)

But even though the number of workers affected would be very similar in both systems, the distributional implications are strikingly different, as we can see in the following table comparing the share of workers affected in each sector and country in the two systems. This effect was to be expected, but perhaps not to such extent. In all countries, the share of workers affected in the low-paid sectors would be drastically reduced , whereas the share of workers affected in the high-paying sectors would increase very significantly. For instance, if we look at the lowest paid sector in Europe, Less Knowledge Intensive (private) Services, we can see that the share of workers affected would go from 13.4 to 6.7% on average (from 13 to 3.5 in Spain, from 28 to 9.9 in Ireland, from 25 to 13.5 in Netherlands). Conversely, in the highest paid sector (Knowledge Intensive Private Services) the share of workers affected would go from 8 to 17.7% on average (from 6.7 to 19.3 in Spain, from 5.3 to 15.7 in Italy, from 3.9 to 27.3 in Portugal).

Whereas a national minimum wage reduces significantly wage inequalities across sectors (by raising the wages of the low-paid sectors in particular), a sector-specific minimum wage can in fact accentuate them. The strongest effect would not be on the lowest paid workers of the economy, but on the lowest paid workers of the highest paid sectors (which may not be so low paid in general terms). To the extent that wage inequalities are linked to sector differentials, it could end up increasing overall inequality. Such a minimum wage scheme may be more consistent with productivity levels, but it seems difficult to justify in terms of its equity implications.

[39] All the analysis in this box is based on SES data. EU-SILC does not have the required level of detail in the sector classification. For the sector-specific minimum wage threshold, we have used 9 broad sectors of the economy: primary, Low Technology Industries (LTI), High Technology Industries (HTI), Less Knowledge Intensive Services (LKIS), Knowledge Intensive Services (KIS), Education and Health (public administration is not included in SES).

		Constr.	LTI	HTI	LKIS	KIS	Educ.	Health
CY	National	5.40	26.09	10.93	26.83	5.98	1.69	11.82
	Sector-specific	13.59	15.86	8.21	6.45	20.83	17.66	13.50
CZ	National	8.28	12.09	6.65	18.71	14.72	4.82	8.43
	Sector-specific	8.77	8.46	7.48	14.00	23.29	11.80	7.50
EE	National	12.67	15.99	10.85	24.12	11.81	20.35	20.15
	Sector-specific	17.52	13.39	12.41	13.60	19.96	22.66	16.83
ES	National	2.26	5.60	1.22	13.17	6.73	5.41	8.89
	Sector-specific	1.71	6.71	8.06	3.50	19.28	20.50	15.11
FI	National	0.68	0.64	0.32	5.39	1.37	2.05	2.90
	Sector-specific	1.90	1.54	3.61	1.51	6.45	6.68	1.34
FR	National	7.77	2.44	2.12	2.93	1.71	0.13	5.72
	Sector-specific	6.84	2.70	7.94	1.78	12.09	4.32	4.14
HU	National	22.36	18.34	10.15	18.36	10.19	3.13	8.78
	Sector-specific	8.45	10.42	11.79	9.34	24.95	14.42	3.68
IE	National	19.95	14.45	8.65	28.26	9.38	4.51	9.99
	Sector-specific	16.02	11.53	13.34	9.94	16.60	22.85	11.84
IT	National	7.68	7.46	3.35	11.13	5.25	0.58	5.31
	Sector-specific	7.34	4.55	4.09	4.35	15.70	21.19	10.26
LT	National	25.37	21.43	6.97	26.30	13.10	24.46	12.63
	Sector-specific	23.43	20.62	15.48	0.00	22.34	34.25	15.25
LU	National	6.03	5.22	10.19	20.92	3.86	0.55	8.67
	Sector-specific	1.38	6.16	0.83	1.23	17.71	26.32	17.60
LV	National	27.28	26.66	9.64	23.95	12.67	18.59	13.87
	Sector-specific	17.95	14.45	16.62	18.08	27.17	20.07	9.79
NL	National	4.96	8.15	3.61	25.00	14.72	2.70	6.17
	Sector-specific	6.64	7.17	7.16	13.50	17.53	7.57	7.69
PL	National	26.14	22.02	8.67	23.58	18.44	5.29	7.68
	Sector-specific	21.15	15.06	9.98	14.62	25.18	29.81	6.89
PT	National	5.83	12.57	2.30	8.62	3.91	0.78	6.49
	Sector-specific	0.59	0.03	6.63	1.06	27.29	24.62	6.31
RO	National	26.73	22.71	3.58	27.02	21.82	12.82	14.95
	Sector-specific	19.27	15.20	9.59	19.60	32.29	20.10	13.22
SE	National	3.10	2.79	0.82	7.39	6.31	5.30	5.14
	Sector-specific	4.87	3.54	2.27	6.06	11.09	3.65	3.26
SI	National	15.69	10.30	4.78	9.68	5.97	1.36	6.63
	Sector-specific	3.18	2.69	2.87	2.58	17.81	21.70	9.43
SK	National	13.56	11.86	9.73	16.89	14.07	8.66	10.18
	Sector-specific	13.34	11.85	9.07	8.58	21.76	15.32	8.99
Total	National	10.59	11.21	4.18	13.42	8.12	4.31	6.81
	Sector-specific	8.70	7.89	7.23	6.67	17.67	17.15	7.46

Table x: National vs. sector-specific minimum wage, share of workers affected by country and (SES 2010 data)

5. c. The distribution of wages below the threshold

So far, we have focused on the most simple and obvious measure of the potential quantitative impact of the establishment of a common EUMW threshold of 60% of the median: the percentage of workers below such threshold. Although such an approach is useful, it has the problem of not taking into account the *intensity* of the effect on each individual case. Not all workers below the threshold earn the same wage: the distance between the current wage and the hypothetical minimum wage can vary considerably and consequently the actual impact for different affected workers.

Figure 4 illustrates this point. It shows the cumulative distribution of relative wages below the median in each country: the horizontal axis shows the wage expressed as a percentage of each

country's median, and the vertical axis the cumulative share of employment associated to such wage levels. For facilitating the interpretation of the country charts, we have drawn a series of grey vertical lines at the levels of 40%, 55%, 60% (the threshold that we are studying in this paper) and 65% of the national median; also, we have included a black vertical line at the level of the existing minimum wage (actual or estimated by Kampelmann, Garnero and Rycx 2013). So for instance, in Germany (DE), the average collectively agreed minimum wage currently stands at around 55% of the median, and there are more than 20% of workers whose current wages are below that level; below 40% of the median, there are around 15% of workers, and below 60% of the median (the hypothetical EUMW level) there are nearly 25% of workers. The countries have been arranged in the chart according to the three main categories of minimum wage systems that we identified in the previous section: the countries at the left-hand side of the chart are those with collectively agreed and sector-specific minimum wages; those in the middle (separated by lines) have collectively agreed but national minimum wages; and those at the right (the majority) have statutory national minimum wages.

The area behind each curve in figure 4 is proportional to the impact of establishing a common statutory minimum wage threshold of 60% of the median in each country. Not only we see how many workers are below the threshold (where the next-to-last vertical grey line crosses the curve), but also by how much would the wages actually increase. The more to the left the curve is located, the largest would be the increase in pay; the highest, the more workers would be affected.

This figure also shows how the different minimum wage setting mechanisms produce different distributions of wages below the median. The countries with national statutory minimum wages tend to have a bumpier distribution of wages below the median, with few workers below the minimum wage threshold and an abrupt increase after; countries with collectively agreed sector-specific minimum wages, on the other hand, show a much smoother and continuous distribution of wages below the median, and the estimated average agreed minimum wage is not associated with any discontinuity in the cumulative distribution of wages. Nevertheless, according to our analysis there are exceptions to this general pattern in both groups of countries: Finland and Sweden show a relatively abrupt distribution of wages (with the curve turning upwards at around 50 and 55% of the median, respectively: coinciding with the effective average agreed minimum wage estimated by GKR in the case of Finland); on the other hand, Greece, Belgium, the UK and Ireland show a rather continuous distribution, in which the minimum wage line does not seem associated with any bump in the cumulative distribution, with workers more or less equally distributed below and above the line (quite similar, in fact, to the countries without statutory minimum wages). To some extent, this may be the result of data problems, since for three of those four countries (the exception is Ireland) we only have data from SILC, which as we have repeatedly said has some problems in measuring wages. In fact, the countries for which we have SES data tend to show more clearly the effect of existing minimum wages than the countries for which we only have SILC. It may also result from the existence of subminima and exceptions (which were not taken into account for computing these charts).

The most important point, though, is that in some countries the area behind the curve is relatively small even if the share of workers below the minimum wage line is relatively large. This is the case of Lithuania, Latvia, Luxembourg, Spain and Slovenia. This may be an effect of existing minimum wages (in Lithuania, Latvia and Luxembourg, where there is nobody below the existing minimum wage line and this reduces considerably the area behind the curve) or other factors (in Spain or Slovenia, where the existing minimum wage is considerably below the turning point of the curve). Where the area behind the curve is larger is in Germany, Estonia, the UK and Ireland, Cyprus, Austria and Romania.

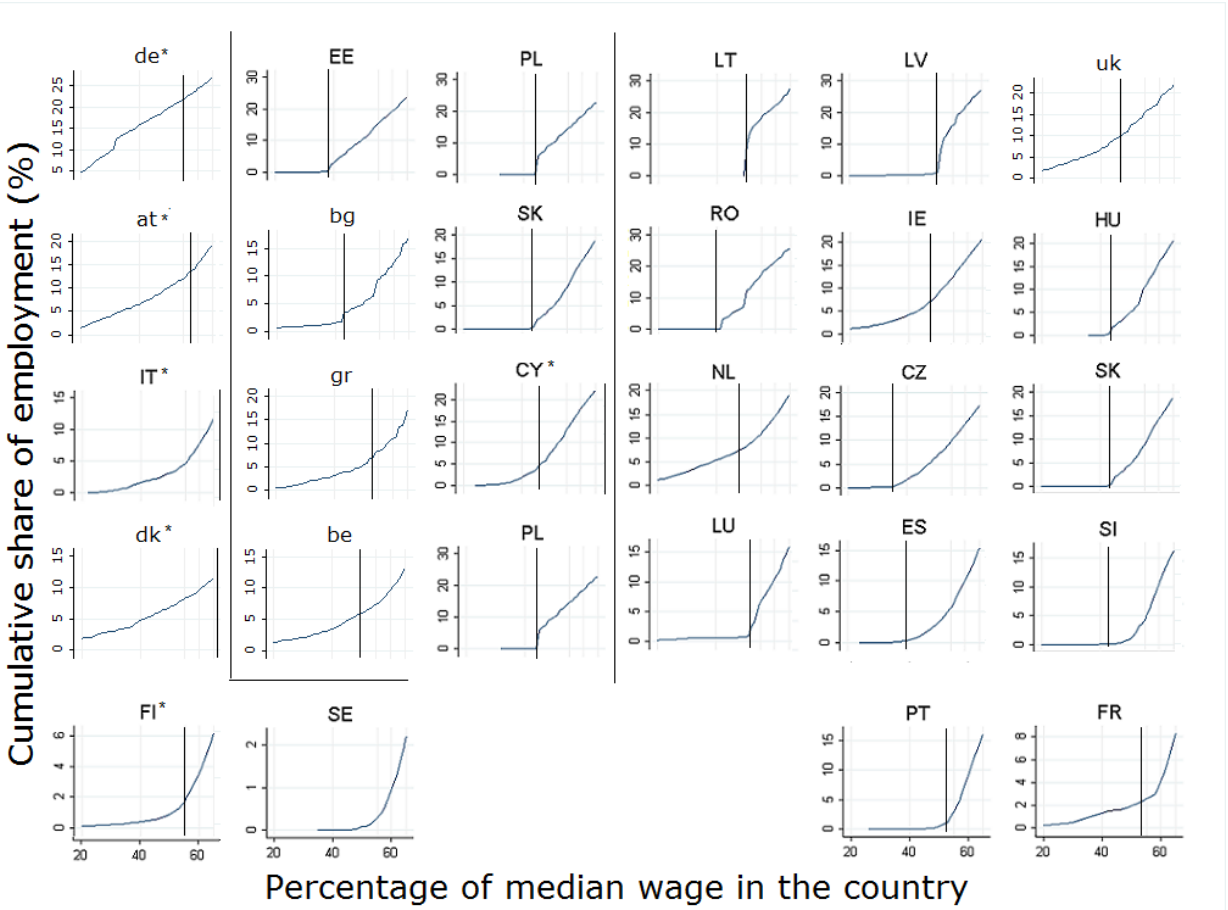

Figure 4: Cumulative distribution of wages below the threshold (SES indicated in capital letters, SILC in small caps; * indicates estimated agreed average minimum wage from GKR)

We can now calculate an alternative index of the potential impact of establishing a minimum wage threshold of 60% of the median with a similar approximation to the one underlying figure 4. We can calculate, for each individual worker below the threshold, the relative distance between the wage that corresponds to 60% of the median and the current wage. Figure 5 plots the median of such new indicator (distance of current wage to the hypothetical EUMW) in each country (in the vertical axis), together with the previously used indicator of share of workers below the hypothetical EUMW (in the horizontal axis). The distance to the origin in such figure is proportional to the impact that the establishment of a common EU threshold of 60% of the median would have. As could be expected, the biggest impact is in Germany, which really stands out from the rest of Europe in terms of the distribution of earnings below the median. Other countries where the impact would be high according to this new measure are the UK, Austria, Cyprus, Netherlands and Ireland, as well as the Baltic states, Romania, Poland, and Denmark.

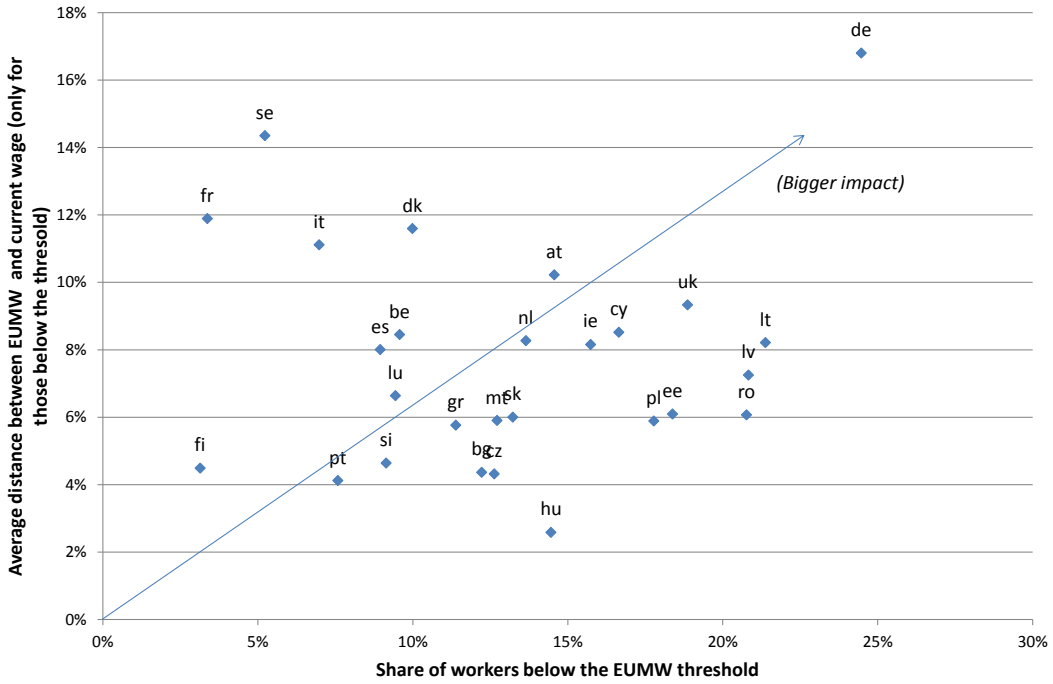

Figure 5: Workers affected by a hypothetical EUMW and median distance between existing wage and the hypothetical EUMW threshold

5.d. Summarizing the potential impact of an EU minimum wage policy across countries

So we can now summarize our overall assessment of the quantitative impact that a hypothetical coordination of minimum wages around 60% of each national median would have, adding also the assessment of the institutional impact that we discussed at the end of the previous section. Such summary is provided in table 4 below.

		Institutional impact			
		High	Medium	Low	
Quantitative impact	High	DE	EE, PL, CY	LT, LV, RO, UK, IE	*More than 15% of workers below the EUMW threshold*
	Medium	AT, IT, DK	BG, GR	HU, NL, CZ, LU, SI, ES, MT	*Between 10 and 15% of workers below the threshold*
	Low	FI, SE	BE, SK	PT, FR	*Less than 10% of workers below the threshold*
		Collectively agreed sectoral and occupational MW	*Collectively agreed national minimum wages*	*Statutory national minimum wages*	

Table 4: An assessment of the potential impact of a hypothetical common EUMW threshold across EU countries

The country where the impact would be higher, and hence the difficulty of establishing such system, would be Germany. On the one hand, the share of workers currently below 60% of the median is one of the highest in Europe, according to the EU-SILC (we could not get access to the SES data for Germany, but the data published by Eurostat shows that this country is also one of the highest in terms of percentage of low-wage earners).[40] On the other hand, currently the minimum wages in Germany are collectively agreed and sector-specific, so moving into some form of statutory national system would involve a large-scale institutional transformation. In fact, Germany is discussing the possible implementation of a national statutory minimum wage at present: although there is still some uncertainty about the final outcome, the upper chamber of Germany has recently proposed the introduction of a statutory national minimum wage of 8.5 euros per hour.[41] Such development would obviously reduce the institutional difficulty of EU minimum wage coordination in Germany.[42]

The other countries with collectively agreed sector-specific minimum wages have all been located in the same column as Germany, but the quantitative incidence of a threshold at 60% of the median would be considerably smaller because of the lower incidence of low pay. This is particularly the case in the Nordic countries, where the share of workers below 60% of the median is well below EU average, despite lacking a statutory national threshold. This is one of the reasons why in practice, Nordic countries are likely to be the most resistant to the introduction of such a common EU threshold: contrary to Germany (where this system has not prevented the expansion of a large low-paid segment), the sector-specific-bargaining model seems to be producing good economic and social outcomes in these countries, and it is widely supported by social partners and governments.

In the second column we have put the countries where minimum wage levels are currently set by social partners but at a national level: the establishment of a common threshold of 60% of the median would simply change the level, not the structure and coverage, of minimum wages. Still, it could imply a significant change in the type of involvement of social partners on the setting of the threshold, which involves at least a medium level of institutional impact. In Estonia, Poland and Cyprus, between 15 and 20% of workers would be affected by such change, which is quite a significant amount; in Bulgaria and Greece, the quantitative impact would be medium; and in Belgium and Slovakia it would be low because of the limited current incidence of low pay.

Finally, the third column includes all countries where minimum wages are statutory and national, and therefore the impact would be mostly on the levels. In Lithuania, Latvia, Romania, the UK and Ireland there is a significant share of the labour force under the hypothetical threshold, and therefore the quantitative impact would be largest. Slightly less but still important would be the impact on Hungary, Netherlands, Czech Republic, Luxembourg, Slovenia, Spain and Malta. Both types of impact would be low in Portugal and France: these would be the countries where the establishment of a common EU threshold of 60% of the median would be easier, because such arrangement would imply little change with respect to the current situation.

[40] Other recent studies using other German data sources provide results which are consistent with our estimations. See for instance Bosch and Weinkopf 2011; Heumer, Lesch and Schroeder 2013.

[41] http://www.eurofound.europa.eu/eiro/2013/03/articles/de1303019i.htm

[42] 8.5 euros per hour is very close to the hypothetical EU minimum wage level that we estimated using EU-SILC for Germany.

Two final comments on table 4. First, it is interesting to note that the institutional and quantitative impact seem to go in opposite directions: most of the countries where the quantitative impact would be high (ie, many workers would be affected) are in the column of low institutional impact, and vice versa. This is because (perhaps paradoxically) countries with statutory national minimum wages generally have a larger low-pay segment of employment and therefore would be more affected by a common higher threshold, whereas the opposite happens in countries with collectively agreed sectorial minimum wages. There are, of course, important exceptions to this: Germany has collectively agreed minimum wages and a very high share of low pay, whereas the opposite happens in France. A second thing to note is that European regions are associated with specific positions in table 4: in particular, Nordic countries are associated with the low quantitative and high institutional impact category; the UK and Ireland, as well as the Baltics, with the high quantitative and low institutional impact; and most other Eastern and Southern member states with medium quantitative and/or institutional impact. The only group of countries that has no clear position in table 4 is Continental European countries, which are scattered throughout all categories (in particular, Germany and France are polar opposites). Of course, this association was to be expected, since these European regions are associated with similar institutional structures, and such structures affect both the minimum wage systems and incidence of low pay; but such association is important for the debate about the possibility of establishing a common minimum wage policy in Europe, because it highlights that it would imply some degree of institutional convergence closer to some particular socio-economic models (the one on the low right quadrant of the table).

6. Workers most affected by the introduction of an EU minimum wage

So far the empirical analysis has focused on estimating the share of the working population that would be directly affected by a hypothetical European minimum wage set at 60% of the median in each Member State. The focus will shift now to describing the *composition* of such population, using a range of company, job-related and personal characteristics.

For reasons of simplicity, the results in this section will mostly come from the EU-SILC dataset, while the Structure of Earnings Survey (SES) data will be used as a complementary source only when relevant. Table 5 presents a broad description of the characteristics of the affected population based on EU-SILC data, while results using SES data are presented in the Annex.

For each variable, two types of measures are provided for the European aggregate[43]: a) the proportion of employees that falls below the EUMW threshold of 60% of the median in each category; and b) the share that such category represents over the total working population under the EUMW in Europe. For instance, the proportion of employees affected in the primary sector is among the highest (32,6%), since almost one out of three agriculture employees are receiving salaries which are below 60% of the median wage in their respective countries. Nevertheless, as a share of the total working population potentially affected by the hypothetical EUMW, the primary

[43] EU-SILC data includes all EU-27 countries and companies of all sizes. For the SES data presented in the Annex, one European aggregate is presented for the sample including 19 countries for which no data on the smallest companies (less than 10 employees) is available and another one for the sample including 12 countries for which data on all company sizes is available.

sector only represents around 3%, since this sector represents a small share of overall employment in Europe.

Company characteristics	Economic activity									
	Agriculture, forestry and fishing (NACE A)	Manufacturing; mining; electricity, gaz and water supply (NACE B-E)	Construction (NACE F)	Retail trade;motor repairs (NACE G)	Transportation and storage (NACE H)	Accommodation and food service (NACE I)	Information and communication (NACE J)	Financial and insurance (NACE K)	Real state; professional and administrative activities (NACE L-N)	Public Admin. and defense (NACE O)
Incidence of low-pay(a)	32.6	11.8	13.9	22.0	10.5	33.0	9.0	6.0	19.7	7.3
Share over total low-pay(b)	3.3	15.2	6.1	18.0	3.6	7.6	1.7	1.5	9.7	4.4
	Economic activity (continued)					Company size				
	Education (NACE P)	Health and social work (NACE Q)	Arts, households, extra-territorial bodies (NACE R-U)			Less 11	11 to 49	>50		
Incidence of low-pay	12.1	18.8	33.5			26.5	16.0	10.2		
Share over total low-pay	6.6	12.9	9.5			38.5	31.4	30.1		
Personal characteristics	Sex		Age					Education		
	Male	Female	14/29	30/39	40/49	50/59	60+	Lower	Higher	
Incidence of low-pay	10.8	21.5	27.7	12.7	12.1	13.2	20.9	26.5	13.3	
Share over total low-pay	35.9	64.1	34.5	21.3	21.8	17.4	5.0	31.4	68.6	
Job characteristics	Occupation									
	Managers	Professionals	Technicians	Clerical	Service	Skilled	Craft	Plant	Elementary	Army
Incidence of low-pay	4.7	5.2	10.3	14.5	30.6	34.1	15.0	12.0	36.2	4.4
Share over total low-pay	1.8	4.8	12.1	12.1	26.7	2.4	11.4	6.5	22.0	0.2
		Type of contract				Type of employment				
		Permanent	Temporary			Full-time	Part-time			
Incidence of low-pay		13.7	31.3			12.2	34.8			
Share over total low-pay		76.9	23.1			64.0	36.0			

Table 5. Characteristics of the working population affected by the EUMW (based on the EU-SILC dataset).
a. It refers to the ratio between the number of low-paid employees (earning wages below 60% of the mendian wage in their country) and the total number of employees in a certain category.
b. It refers to the share represented by the low-paid employees in a certain category over the total number of low-paid employees in Europe.

Most of this section will focus on the incidence of the hypothetical EUMW threshold of 60% of the median in different groups of the working population, but it is useful to look at the broad characteristics of the segment of affected employees, shown in rows (b) of table 5 and briefly explained in Box 5.

Box 5. A profile of the European workforce potentially affected by a hypothetical EUMW policy

Most of the workers below the EUMW threshold work in small companies (nearly 40% in companies with less than 10 employees, 70% in companies with less than 50), mostly in personal service sectors (nearly 20% in retail, 13% in health, nearly 10% in other services and 8% in horeca). Almost half of them would work in service and elementary occupations, and although the incidence of part-time and temporary employment is higher for this group, most of them have permanent (77%) and full-time (64%) contracts. Nearly two thirds of the population potentially affected by a hypothetical EUMW policy are women. And they would be predominantly young too: 56% of them are less than 40 years old, and 35% less than 29.

6.1. Company-related variables

Economic activity

The sector dimension has a significant impact on the share of workers under the hypothetical EUMW threshold (see figure 6). First, the hypothetical EUMW would affect around a third of employees in the sectors of hotels and restaurants (HORECA); agriculture; and arts and entertainment (NACE R-U). The proportion of employees affected in these three sectors is above national averages in all countries except some few exceptions (see Annex).[44] Nevertheless, due to the relatively small size of these sectors, the employees affected would represent less than 20% of the total employees affected by the hypothetical EUMW.

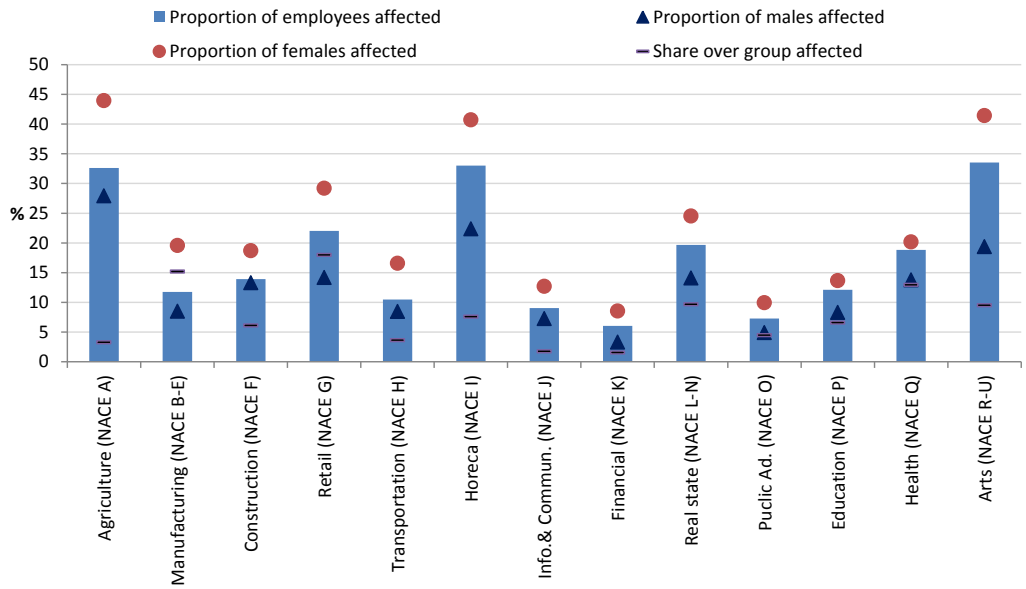

Figure 6. Employees affected by the EUMW by sector (EU-SILC)

Second, employees in the retail, real estate activities and health sectors would come next since around 20% of them would be affected. While the proportion of employees affected in the retail and real estate activities would be above national averages in most countries, the picture is more mixed for the health sector. Due to the large employment share of these sectors, around 40% of the employees whose wages would be affected by the EU-wide minimum threshold would come from these three sectors, especially from the retail sector.

Third, in the remaining sectors, the proportion of employees affected would vary from the highest proportions in the construction, education and manufacturing sectors to the lowest in finance and

[44] In some cases, the proportion of employees potentially affected by the hypothetical EU minimum wage policy would be close to or above 50%: Germany, Luxembourg, Ireland, Lithuania, Sweden and the UK in the HORECA sector; Germany, Luxembourg and Greece in the agricultural sector; and Cyprus in arts and entertainment.

public administration. By countries, the proportion of employees affected in these sectors would be lower than the national average in most cases, with the exception of the construction sector, where the proportion of employees affected by the hypothetical European minimum wage would be higher than average in many countries, such as Luxembourg, Denmark or Italy.

Finally, the proportion of employees affected is higher among females than males across all economic sectors. The largest gaps in the proportion of employees affected, considered in percentage points, occur in the arts and entertainment, HORECA, retail and agriculture sectors. The proportion of females affected doubles that of males in the financial, manufacturing, retail, arts and entertainment and public administration sectors.

The sector data in the SES is available at the two-digit level and therefore allows for the construction of an alternative sectoral typology which is also informative. Low knowledge intensive services[45] (LKIS), low technology industry[46] (LTI) and construction are characterized by the highest proportions of employees potentially affected, with more than 10% in each of them. Employees in the LKIS sector really stand out, since almost half of the employees whose wages would be increased by an EUMW would come from this sector. The proportion of employees affected in the LKIS sector is above the national average in all European countries but France and Sweden, two countries characterized by relatively high minimum wage levels (see Annex).[47]

Company size

The proportion of employees potentially affected by a hypothetical EUMW would be much higher among small companies. Figure 7 shows that this is the case for all countries. A blue line has been drawn along the diagonal: the closer to this diagonal, the less difference there is between the share of employees affected in small and large firms. As we can immediately see, all countries are found well above the diagonal line, since the proportion of affected employees is considerably higher among those employees working in smaller firms.[48]

For the EU-27 aggregate, the proportion of employees affected in companies with more than 50 employees would be around 10%, a proportion that jumps to 25% for the smallest companies with 10 or less employees. The difference in the proportions of employees affected by firm's size would be especially significant in countries such as Cyprus, Ireland, Finland, France or Greece.

[45] LKIS include retail, hotels, restaurants and catering, land transport, public administration, recycling and private households. For more details, see Felix, 2006.

[46] The distinction between High and Low Technology Industry is based on the intensity of research and development in the sector (ratio of R&D expenditure to value added) and the technology embodied in the purchases of intermediate and capital goods. For more details, see Hatzichronoglou, 1997.

[47] The proportion of employees affected in the education, health or construction sectors reported in the SES is lower than when using EU-SILC, since the former does not include small companies. In the case of the primary sector, the striking difference between both sources, EU-SILC and SES, is mainly due to the fact that the primary sector in the SES only comprises mining and quarrying, characterized by higher levels of pay than agriculture.

[48] Distinguishing by gender, the ratio in the proportion of employees affected between females and males would remain more or less constant across all firm sizes, with a higher proportion of females being affected in all cases.

On the contrary, the gap (measured as the ratio between the respective proportion of employees affected) is smallest in countries such as Sweden, Estonia or Romania.

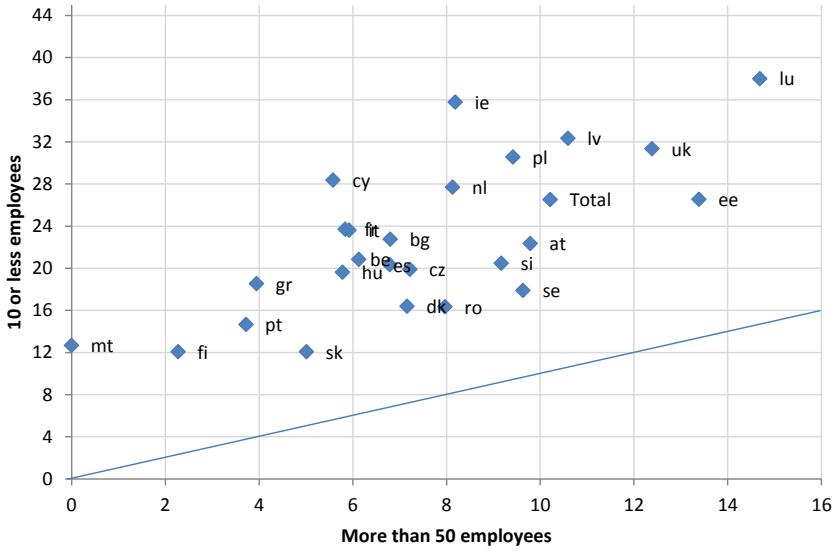

Figure 7. Proportion of people affected by the EUMW by firm's size (EU-SILC).

Crossing company size and sector, we can see that the higher proportion of employees affected in small firms occurs across all economic sectors. In fact, the relationship between the size of the company and the share of workers below the 60% of the median threshold is so strong that it is likely to explain partly the previously shown differences by sector: it is in the sectors where more employees work in smaller companies (arts and entertainment, agriculture and horeca) where the effect of the hypothetical EUMW would be larger, and vice versa (see figure 8).[49]

[49] This significant correlation between the proportion of affected employees and the share represented by the smaller companies in each sector also exists in most Member States. The correlation is of around 0.5-0.7 depending on the country, and only for some of them (BG, DK, EE, HU, LT, SK, UK) it is around 0.3.

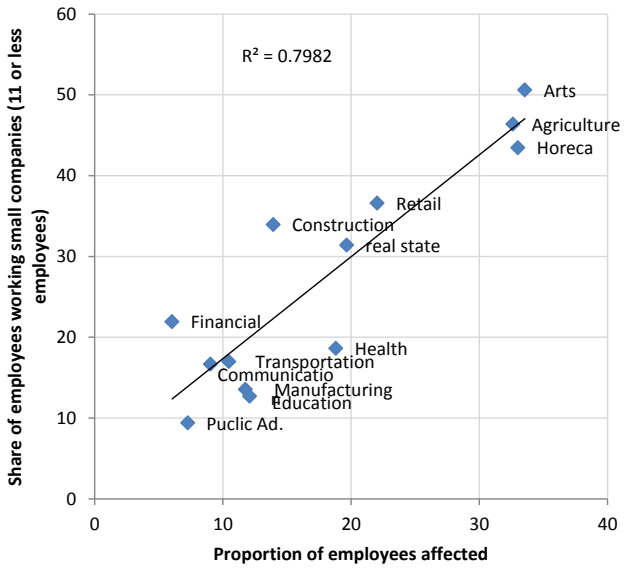

Figure 8. Share of employees working in small companies by sectors

Collective bargaining

The high relevance of firm's size to explain the proportion of employees affected is further confirmed by looking at SES data.[50] Additionally, the SES data permits to evaluate the impact of collective bargaining. As shown by figure 9, at the aggregate (country) level, the share of workers potentially affected by the hypothetical EUMW is smaller in countries where a higher share of the workforce is covered by collective pay agreements, and vice versa. The same relationship can also be observed at the company level, since companies not covered by collective pay agreements would be much more affected by the hypothetical common EUMW.[51] As we saw in the literature review, minimum wage policy can often be understood as a functional equivalent for collective bargaining for companies and sectors with limited coverage: indeed, the hypothetical EUMW policy we are evaluating here would affect more this type of companies.

[50] As already explained, we have worked with two different SES samples, one covering companies with 10 or more employees for a wide sub-set of countries (19) and one including as well the smallest companies but only for 12 countries. In both cases, the relationship between firm size and effect of the hypothetical EUMW is very strong (see Annex).

[51] Collective bargaining coverage is positively correlated with firm's size. The proportion of employees not covered by collective pay agreements (at any level) is: 22% in companies with 10-49 employees; 19% in companies with 50-249 employees; 14% in companies with 250-499 employees; 11.5% in companies with 500-999 employees; and only 7.3% in companies with more than a thousand employees.

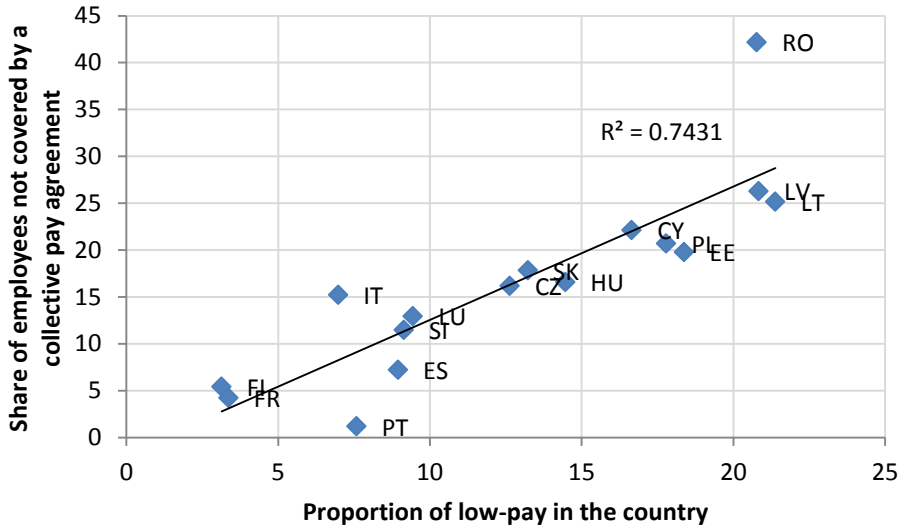

Figure 9. Collective pay agreement coverage and incidence of low-pay in the country.

Note: Sweden, Netherlands and Ireland have been excluded due to problems in the coding of the variable on collective pay agreement coverage in SES.

Therefore, company size, sector and collective bargaining coverage are three interrelated factors that have a consistent and combined impact on the share of workers below the hypothetical EUMW threshold: generally, the sectors with smaller companies and lower collective agreement coverage are the ones where the impact of a common minimum wage threshold of 60% of the median would be largest.[52]

6.2. Job-related characteristics

Occupation

As expected, employees in lower-skilled occupations would be the most impacted by the hypothetical EUMW. As can be seen in figure 10, the proportion of employees affected would be largest in elementary, skilled agricultural, forestry and fishery and service and sales occupations, while the more skilled occupations would be much less affected than the average. Taken together, almost half of the employees affected in Europe would be service and sales workers or those in elementary occupations.[53]

[52] With the data we are using (cross-sectional EU-wide datasets) it is not possible to adequately disentangle the individual impact of each of these factors, in order to establish which one is most important. At most, we can say that they seem to have a combined and consistent impact. Later, we will look again at this issue within a multivariate statistical model, where each factor is controlled by the others (as a *ceteris paribus* table), which shall allow us to evaluate which correlations seem most important; but even in that case, the cross-sectional nature of the analysis means that we cannot establish causal primacy, but only (controlled) statistical correlation.

[53] According to SES data, it is as well clear that relatively more employees in lower skilled occupations would see their wages increases as a consequence of a EU MW (see Annex). Those in elementary occupations, skilled agricultural, forestry and fishery workers, service and sales workers would be those relatively more affected, which is consistent with the results presented in here.

By gender, a higher proportion of female employees would be affected across all occupation categories, but the highest difference as compared to the proportion of male employees affected (in percentage points) arise in the lower-skilled occupations: elementary, skilled agricultural, service and sales and plan and machine operators.

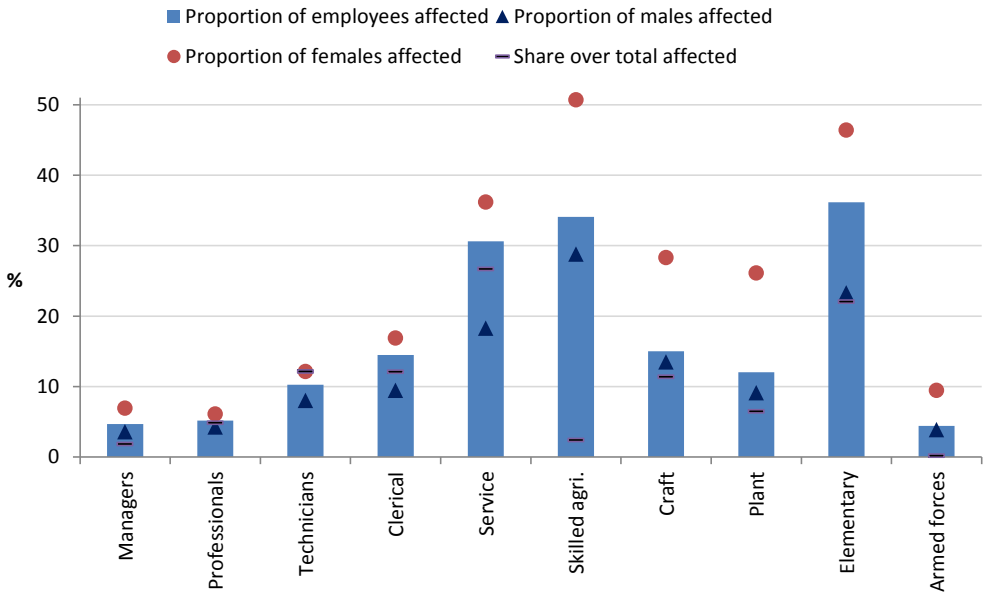

Figure 10. Employees affected by the EUMW by sector

Part-time employment

More than a third of part-time employees would be affected by the introduction of the hypothetical EUMW, almost three times the proportion of full-time employees that would be affected in Europe (see figure 11). The gap (measured as a ratio) between the proportion of affected part-time and full-time employees would be largest in Belgium, France, Greece and Portugal. On the other hand, it would be narrower in Luxembourg and Sweden, according to EU-SILC data (see Annex). When looking at part-time employment, it is necessary to differentiate between males and females, since the latter are generally much more likely to fall in this category, but this will be done when dealing with the distribution by gender.

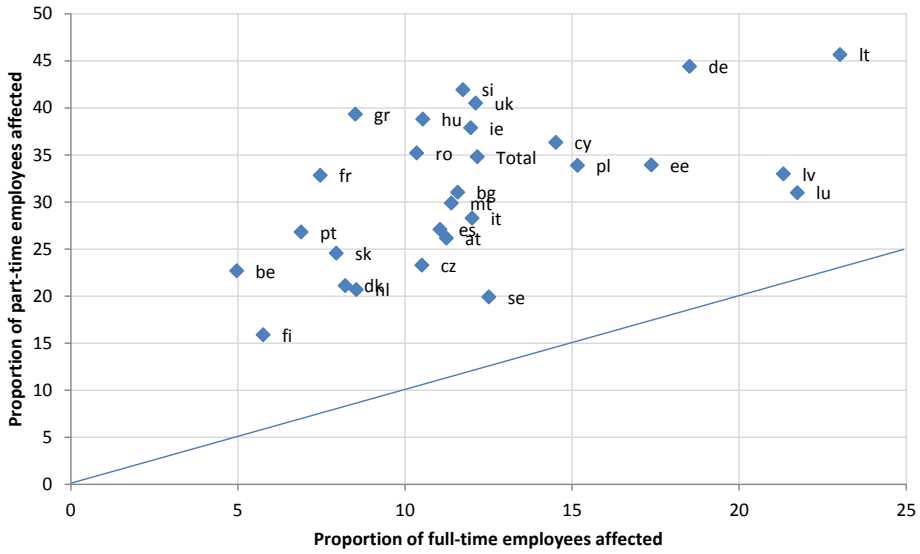

Figure 11. Proportion of employees affected by type of employment

It is important to remember that part-time employment represents less than 20% of total employment in Europe and it is far less present in many countries. So in most countries part-timers would only represent a minority of the workers affected by the hypothetical EUMW policy. Only in the countries with a significant share of part-time employment (mostly Netherlands, Belgium, Ireland and the UK) more than half of the employees affected in the whole country by the introduction of the EUMW would be part-timers.

Temporary employees

Temporary employees would also be much more affected than their permanent counterparts by the hypothetical common EUMW threshold: almost one in three temporary employees would be affected, as compared to 13.6% of permanent employees in Europe. Such differential impact by type of contract holds in all countries, as shown in figure 12. The ratio between temporary and permanent employees affected would be especially large in Austria, Belgium, Cyprus, Greece and Sweden, and narrower in Estonia, Lithuania and Ireland.[54]

[54] For most countries, data from the SES reflects an even wider difference between the proportion of temporary and permanent employees affected by the EU MW (measured as the ratio between the two) than the EU-SILC source. But the overall impact would be the same in both sources, around a third of the total workforce affected by the EU MW would be on a temporary contract (see annex).

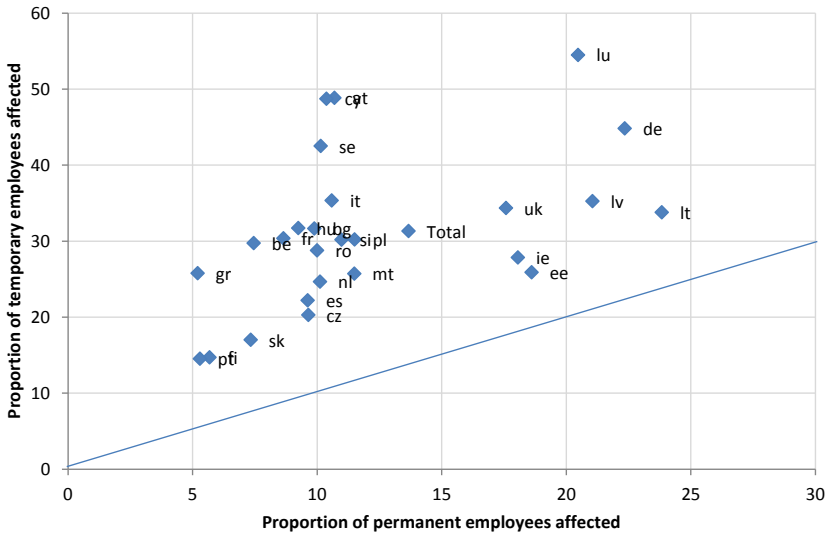

Figure 12. Proportion of employees affected by the EUMW by type of contract

6.3. Personal characteristics

Gender

The hypothetical EUMW threshold of 60% of the national median would clearly have a stronger impact on female workers. In the EU-27, the proportion of women below the threshold doubles that of men: the wages of 21.5% of all female workers across the EU are currently below the hypothetical EUMW threshold, as compared to less than 11% of males.

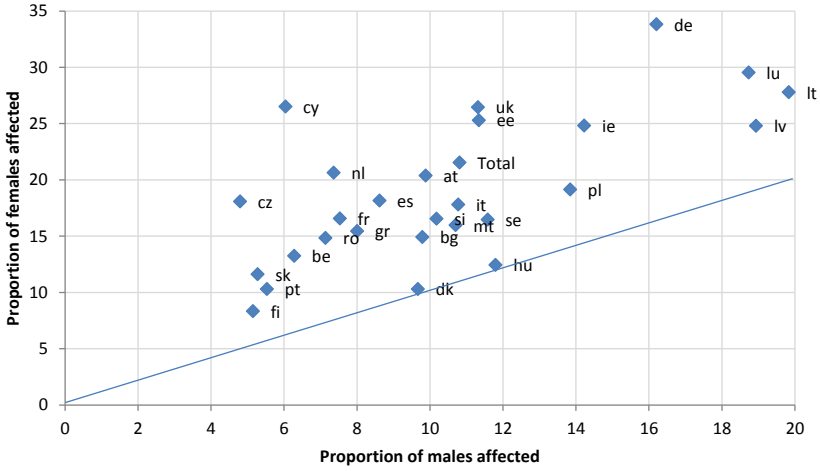

Figure 13. Proportion of employees affected by the EUMW by gender

This difference between females and males regarding the incidence of low-pay is present among all European countries, as indicated by the fact that they are all above the diagonal line depicted in figure 13, where all countries would be if the hypothetical EUMW would equally affect both

genders. Nevertheless, important disparities exist across countries. The gap (measured as a ratio) is very large in countries such as Cyprus and Czech Republic, while it is almost negligible in Denmark and Hungary.[55] There is no relation between the magnitude of the gap and the female employment share in the different countries.[56]

When trying to tentatively explain why women may earn lower wages, the higher incidence of part-time among women appears as a potential explanation. Figures 14 and 15 below inquire into this possibility and some interesting facts emerge. Both male and female part-time employees would be more affected by the hypothetical EUMW than their full-time counterparts. Nevertheless, the gap between men and women regarding incidence of low-pay only exists for full-time employees, as male and female employees working part-time would be similarly affected by the EUMW threshold. This is shown by the fact that the data points of most countries are relatively close to the diagonal in figure 15 representing part-time employment, whereas the share of full-time employees below the EUMW threshold is much larger for women than for men (in all countries except Denmark, as shown in figure 14).

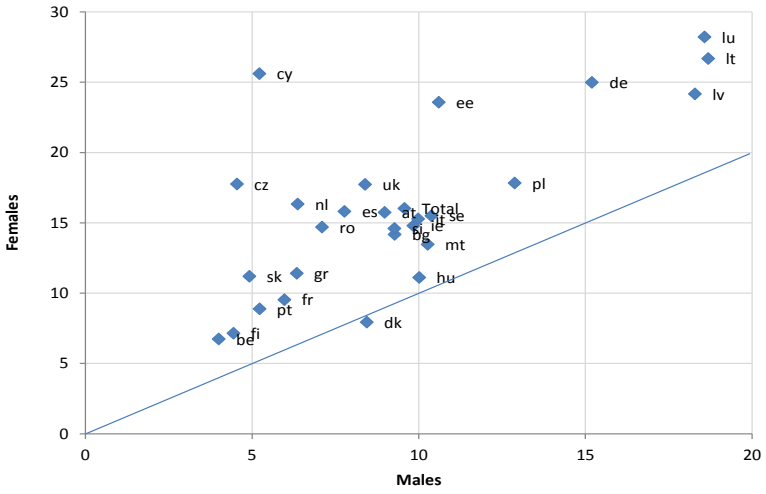

Figure 14. Proportion of full-time employees affected by the EUMW

[55] Measured as the ratio between the proportion of females affected and the proportion of males affected. If the gap is measured as the difference in percentages between the proportion of affected females and males, the gap would be largest in Cyprus, Germany and the UK.

[56] The SES data produces a considerably smaller gap by gender regarding the incidence of low-pay, because of the sample limitations (it does not cover small companies and some sectors that have a different gender profile, such as public administration). For the EU-27, the proportion of females affected would only be 3% larger than that of males according to the SES data (11,2% as compared to 8,15% respectively). And in some countries this proportion would be basically the same (Hungary and Latvia) or even be higher for males than females (France and Romania), as shown in Annex. The EU-SILC provides a less biased picture of the distribution of pay by gender than the SES.

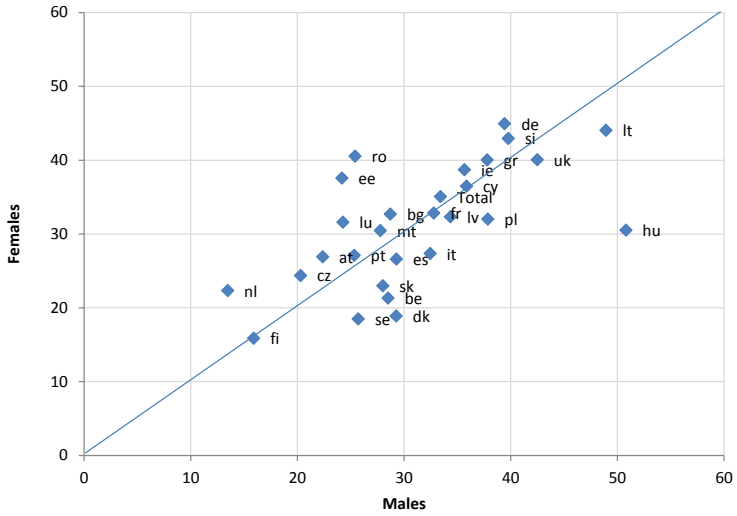

Figure 15. Proportion of part-time employees affected by the EUMW

The previous two graphs show that the higher proportion of female employees potentially affected by the EUMW threshold (ie, of having a low-paid job) may be partially explained by the fact that women are much more likely to work part-time. But, importantly, there are other reasons for it, since having a full-time job reduces the likelihood of being below the EUMW threshold much more for men than for women.

Level of education

Lower-educated employees would be disproportionately affected by the hypothetical EUMW policy in nearly all countries: for the EU27, more than a quarter of all employees with up to lower secondary education are currently below such threshold, compared to 13% of those with at least upper secondary education.

In some countries, the difference in the proportion of employees that would be affected by the hypothetical EUMW threshold by level of education is even higher: around three times higher in Austria, Cyprus, Germany, Denmark, Bulgaria, Hungary, Luxembourg or Romania. On the contrary, Sweden, which is characterized by high (collectively agreed) minimum wage levels, is the only country where this employee's gap along educational levels does not exist, as shown by figure 16 below.

If we cross educational levels and gender, the ratio between the proportion of females and males that would be affected by the introduction of the hypothetical EUMW threshold remains similar along all educational levels.[57] Moreover, the female employment share is almost 50% in the higher-educated population, while it is lower (43%) in the lower-educated workforce segment. In

[57] Among lower-educated employees, 37% of females and 18% of males would be affected by the hypothetical threshold; among higher-educated employees, these proportions would be 18 and 9% respectively. This means that for both educational groups, the proportion of female employees affected would be about twice that of males.

other words, the female gap in the incidence of low-pay, reported previously, cannot be explained by differences in educational levels.

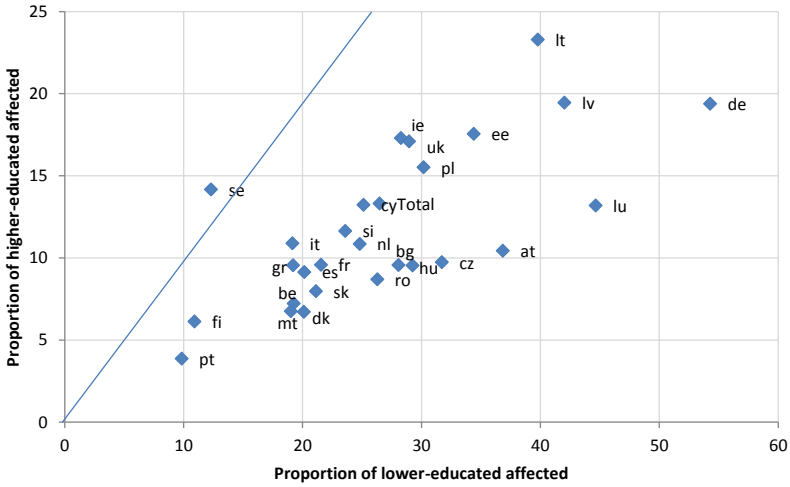

Figure 16. Proportion affected by the EUMW by education level

Nevertheless, it is worth recalling that employees with up to lower secondary education represent less than a third of the total workforce that falls below the hypothetical EUMW threshold, since they represent less than 20% of the working population according to EU-SILC data. But in those countries where lower-educated employees represent a higher share of employment, this group does represent most of the total affected segment. This is the case in the Mediterranean countries (Portugal, Malta, Spain and Italy) and in Luxembourg.

Age

As underlined in the literature review, most of the empirical studies on the employment effects of minimum wages have focused on teenagers since this is the group generally considered to be most affected by minimum wages (see section 1 of this report). Figure 17 shows that the proportion of employees affected by the hypothetical EUMW threshold would follow a U-shape in terms of age, decreasing from a high starting point for younger workers until it starts rising again for those aged above 50 years old. The differentials by age are indeed quite large: 80% of those in the teenage group (aged 14-19) would be affected; 35% of those aged 20-24; and 16% of those aged 25-29. Then the proportion of employees affected in the following age categories would remain around levels of 12% before starting to pick-up again from the age category 55-59. Moreover, the graph shows that the gender gap in the proportion of employees affected increases with age.[58]

Nevertheless, the relative significance of the youngest segments of the population in the low pay sector (and the elderly as well) markedly varies across Europe. On the one hand, in spite of the disproportionate impact that the hypothetical EUMW threshold would have on teens (80% of

[58] Information using the SES data presented in the Annex and is consistent with the one presented here. The main difference for the EU-27 aggregate is that the rise in the proportion of older employees affected only starts after 65 years, while in EU-SILC it occurs already from the 50s.

them would be affected), they represent a very small share of the European working population (less than 2%) and would therefore only account for less than 8% of the total workforce affected by the EUMW threshold. On the other hand, young employees aged 20-29 would be less affected by the hypothetical EUMW threshold but they represent almost 20% of the European employment, and would account for more than 25% of the total workforce affected by the EUMW threshold. This overall picture changes to some extent when looking at individual country profiles, as analysed in box 6.

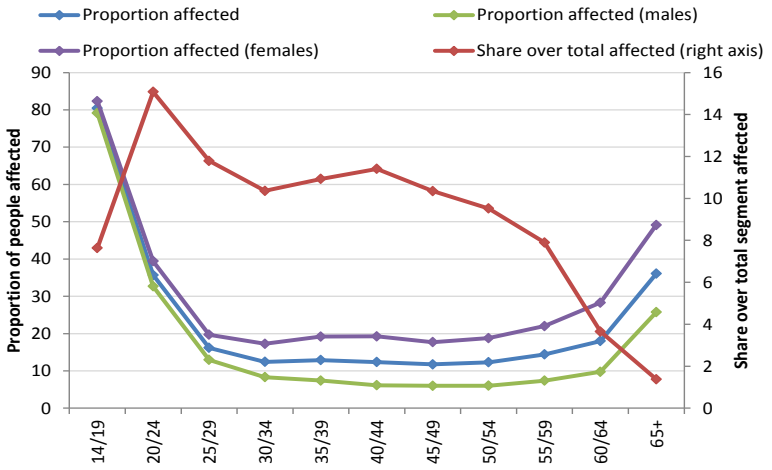

Figure 17. Employees affected by age and gender

Box 6. Diverging impact of the EUMW threshold across age groups and selected countries

In countries like Sweden, Austria or Malta, young employees (aged 14-29) represent a much larger share of those below the hypothetical EUMW threshold, around half or more of the total. On the other hand, in many Central and Eastern European Countries (Bulgaria, Czech Republic, Estonia) and the UK, employees above 50 years of age represent an important share of the affected population (around 30%). Figure 18 depicts the contrasting picture of Sweden and Estonia. In both cases the incidence of low-pay on the youngest groups is above the average, but in Sweden almost of the impact would concentrate on those with less than 35 years, whereas in Estonia those employees above 45 years would be strongly affected as well.

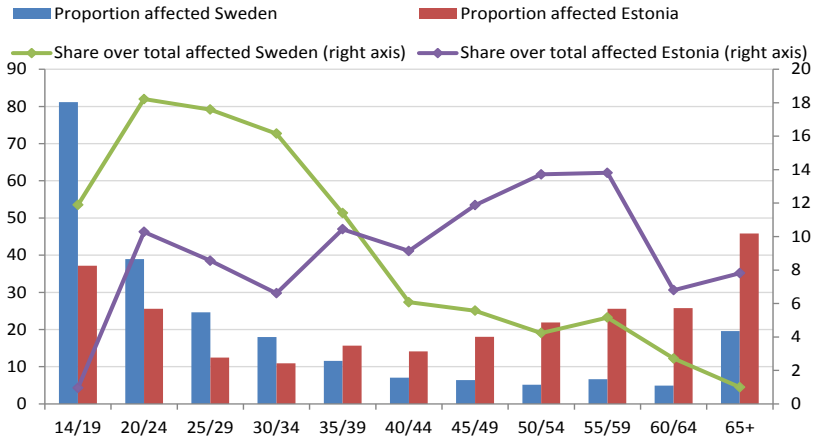

Figure18. Employees affected by age in Sweden and Estonia

6.4. A multivariate approach

In this section, we will present a statistical analysis based on multivariate regression models to determine which variables influence the likelihood of an employee being affected by the hypothetical EUMW threshold. The logistic regression model will follow the approach of the previous descriptive section, differentiating three broad types of variables as explanatory factors: socio-demographic variables (gender, age and educational level); company-related variables (firm's size and economic sector); and job-related variables (type of employment, work experience, supervisory role in the company, type of contract and occupation). While the previous descriptive section looked at the extent to which certain groups would be impacted by the hypothetical EUMW threshold, the present approach will try to quantify the specific effect of each variable on the probabilities of an employee being affected by the EUMW threshold, keeping constant the effect of all the other variables in the model.

A table with the detailed estimation results is presented in the Annex. The dependent variable is binary, holding a value of 0 if the individual falls above the hypothetical EUMW threshold of 60% of the median, and 1 if she falls below (the group in which we are interested). For evaluating the impact of the different independent variables on the likelihood of falling below the EUMW threshold, we have run successive logistic regression models following a nested structure, in four steps: first, including only socio-demographic variables; second, adding company-related variables; third, adding job-related variables; and finally, adding country dummies to control for national specificities and evaluate their impact. The explanatory power of the successive models increases with each step, as measured by Nagelkerke´s Pseudo R2, which goes from .08 to .23. Although the pseudo R2 of the models are relatively low (suggesting that there may be explanatory variables omitted in the models, and/or that the data used is subject to a significant amount of statistical noise), most of the variables are statistically significant, which allows us to (carefully) discuss the results of the models.

To simplify the presentation of the results, only the odds ratios of the logit estimation including all variables is presented in figure 19. Each bar in the chart represents the change in the odds of being below the hypothetical EUMW threshold associated with each categorical comparison. For instance, the odds of being below the threshold is 1.8 times (or 80%) higher for female than for male European employees: in other words, being a woman increases considerably the probability of being below the threshold. On the contrary, if the odds ratio are below 1, it means the odds would be lower: for instance, the odds of being below the threshold are 0.35 times (or 35%) lower for employees working in bigger companies than employees working in medium-sized companies.

Regarding socio-demographic characteristics, female, lower-educated and younger employees have much higher odds of being affected by the introduction of the EUMW even under *ceteris paribus* conditions. In other words, even for the same type of employment status, occupation and sector women are 1.8 more likely to be below the EUMW threshold. The effect of age is particularly strong: the odds of being below the EUMW threshold are 2.4 times higher for younger employees aged 15-29 (and 1.12 higher for older employees aged above 55) than for the core of the workforce aged 30-54. This provides further confirmation that the younger segment of the workforce would be a major group of concern for policy makers when considering the potential impact of a EU-wide minimum pay scheme.

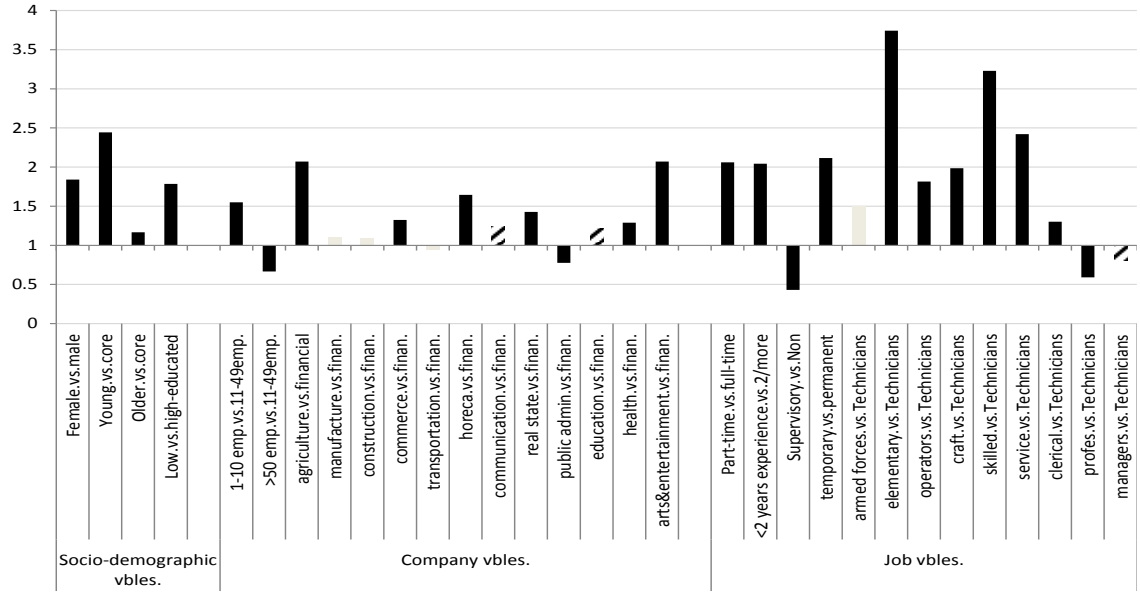

Figure 19. Odds ratios of the logit regressions.

Note: Bars fully coloured in black indicate variables which are significant at the 1% level; bars with white stripes indicate variables significant at the 5% level; lastly, grey bars indicate variables not significant at the 5% level. For the variables with only two categories, the one not shown in the graph is the reference. For variables with more than two categories, these are the reference categories: firms employing 11-49 employees (for firm's size); financial sector (for economic activity); technicians and associated professionals (for occupations).

If we look at the results of the model by steps, the explanatory power of socio-demographic variables is reduced mainly when job-related variables are introduced.[59] This is especially the case for gender and level of education, since a significant part of the difference is associated with a different composition of those groups (in the case of level of education, the association between occupational level and education is actually endogenous, since the skill level is explicitly taken into account for classifying occupations; in the case of gender, the reduction in its impact when occupations and employment status are taken into account is the largely result of the well-known phenomenon of occupational gender segregation, see Grimshaw and Figuereido 2012).

Overall, the impact of company-related variables seems to be smaller than that of socio-demographic variables, since the Nagelkerke´s Pseudo R2 of the model only increases marginally when the former are included (from 0,08 to 0,11), and the coefficients of company-related variables are in general closer to 1 when looking at the general model including all variables. Nevertheless, working in smaller companies remains an important factor, since their odds of being below the EUMW threshold are 1.5 times higher than employees working in medium-sized companies. When considering sectors, and as compared to financial workers (a sector characterized by relatively low levels of low-pay), the odds of being below the EUMW threshold would be highest for employees in the agriculture and arts and entertainment sectors (and to a lower extent in the HORECA, real state activities, commerce, education, health and

[59] When company-related variables are introduced, the only socio-demographic variable that significantly loses explanatory power is education, which is related to the strong concentration of low-educated workers in certain economic sectors such as agriculture or HORECA.

communication sectors). On the other hand, these odds would be lower only for employees working in public administration, while in the manufacturing, construction and transportation sectors the odds would not be significantly different than for financial employees.[60]

Lastly, job-related characteristics seem the most relevant to characterize which type of employees would be affected by the EUMW. The model increases significantly its explanatory power when they are introduced and many of them are associated with large odds ratios in the general model. Temporary, part-time and employees with little work experience would be more likely to be affected, while employees with a supervisory role would be less likely. The occupation of the employee has a strong impact: as compared to employees working as technicians, those in service and sales, skilled agricultural and, especially, elementary occupations would be much more likely to be affected by the EUMW. Employees in the remaining occupations would have as well higher odds of being affected than technicians, excluding professionals and managers, which would have lower odds.

Since the logistic regression models provide information on the effect of each variable while controlling for all the rest, the coefficients associated to each country provide an interesting picture as well (included in the detailed results presented in the Annex). They indicate the odds of employees in the different countries being affected by the EUMW threshold, keeping constant the broad differences in social and economic structure (due to sectorial and occupational composition, age structure or incidence of part-time and temporary employment, among others). From this perspective, as compared to France (the country of reference), the countries where employees would have the highest odds to be under the EUMW threshold would be Lithuania, Germany, Luxembourg, Estonia, Latvia, UK and Romania (all above 2 times higher odds). On the other extreme, employees in Portugal, Malta, Finland, Greece, Slovakia, Spain and Belgium would have the lower odds of being affected by the EUMW threshold.

Box 7. Determinants of being below the EUMW threshold across different minimum wage setting systems

In the first half of this report, we classified European countries according to the minimum wage setting systems into two broad groups: countries with statutory national minimum wages and countries with collectively agreed sector-specific minimum wages. Since these systems produce rather different outcomes, it is useful to run the logistic regression separately within each of these country groups, to evaluate whether the determinants of being below the EUMW vary across them.

Results of the regressions run separately for of these two groups of countries are shown in the Annex, and some important divergences arise. On the one hand, young employees and employees with a short work experience (and lower-educated employees to a lesser extent) are much more likely to be under the EUMW threshold in countries with collectively agreed sector-specific minimum wages. This seems to indicate that these segments of the workforce are more likely to be not covered by minimum wage protection in countries without statutory minimum wages. On the other hand, the sector variable loses much of its statistical significance for countries with statutory minimum wages, while it is very relevant for countries without them. In other words, sector differentials in the share of low pay are more significant in countries

[60] When job-related variables are added, the explanatory power of the firm's size variable remains almost the same, while some sectoral variables experience a reduction in explanatory power. This indicates that in some sectors, the incidence of low-pay is partially explained by factors such as occupational composition of the workforce or incidence of part-time and temporary employment.

with collectively agreed minimum wages than in countries with a statutory system.

Results are very similar when the regressions are run using the SES data. Detailed estimation results are presented in the Annex. SES permits a more detailed firm's size breakdown and the results clearly confirm that the odds of employees being affected increase when companies are smaller. The effect of sector becomes not statistically significant when including the job-related variables. Instead of work experience, the SES includes the seniority of the employee in the company and results show that employees working less than two years in the company are more likely to be affected by the EUMW.

SES includes two interesting variables which are not available in EU-SILC. Employees working in companies covered by a collective pay agreement and companies controlled by the public sector are significantly less likely to be found among those potentially affected by the EUMW. Within all the rest of variables, results are consistent between the SES and EU-SILC databases.

7. Two further explorations: the potential impact on poverty and on competitiveness

7.1. What impact would an EUMW have on poverty?

As we said earlier (see section 1 of this report), the main justification for minimum wages is not the reduction of poverty, but the establishment of minimum labour standards under which no employment relation is considered socially acceptable. But that said, there seems to be at least a potential link between minimum wages and poverty, at least in-work poverty, since an increase in the lower earnings threshold should have an impact on the distribution of earnings at the bottom, and hence benefit those with insufficient earnings to make ends meet. Would the coordination of EUMW policy under the hypothetical parameters that we are evaluating in this report (ie, a common threshold of 60% of median wages) have an impact on poverty in Europe?

To evaluate this issue, we have to change slightly the focus we have had throughout this report. All the analysis so far has focused on individual workers, but the issue of poverty is not only linked to the individual distribution of earnings, but to the household distribution of income as well; and it not only concerns workers, but the population in general. In this section, we will first keep an individual work-centered approach to evaluate to what an extent the hypothetical EUMW policy may help the European working poor. Second, we will look at the household distribution of income and poverty for the whole population, and evaluate to what an extent it may be affected by the hypothetical policy.

As a first approximation, figure 20 shows the share of workers currently below the hypothetical EUMW threshold (60% of the median wage in each country) that are also below the poverty line at the household level.[61] In other words, whether the workers that would in principle benefit from

[61] The poverty line is here defined in relative terms, using the approach of the EU-SILC: a household in relative poverty (or at risk of poverty) is one whose equivalised disposable income is less than 60% of the equivalised disposable income of the median household. Equivalised disposable income is calculated as the total income of a household, after tax and other deductions, that is available for spending or saving, divided by the number of household members converted into equalised adults; household members are equalised or

the hypothetical EUMW threshold live in poor households. On the one hand, this chart clearly shows that most EUMW workers do not live in relative poverty: on average, only one in five across the EU are below the poverty line –and consequently, 80% of the workers that would benefit from the EU threshold are currently above the poverty line. As could be expected, this magnitude varies considerably across EU countries, going from around 30% in Italy, Luxembourg and Bulgaria to less than 10% in Ireland: but everywhere, the vast majority of workers below the hypothetical EUMW threshold live in households above the poverty line. But on the other hand, if we compare workers below and above the EUMW threshold (also shown in figure 20, with grey bars), we can immediately see that the incidence of poverty for workers below the EUMW threshold is notably higher than for workers above the threshold. For the EU as a whole, less than 4% of workers above the EUMW threshold live in relative poverty, compared to 20% of those below: in other words, the incidence of poverty multiplies by five for workers below the threshold. A similar pattern can be seen in all EU countries, with no exception. So although most of the workers below the EUMW threshold do not live in poor households, there is a clear association between poverty and having a wage below our hypothetical threshold.

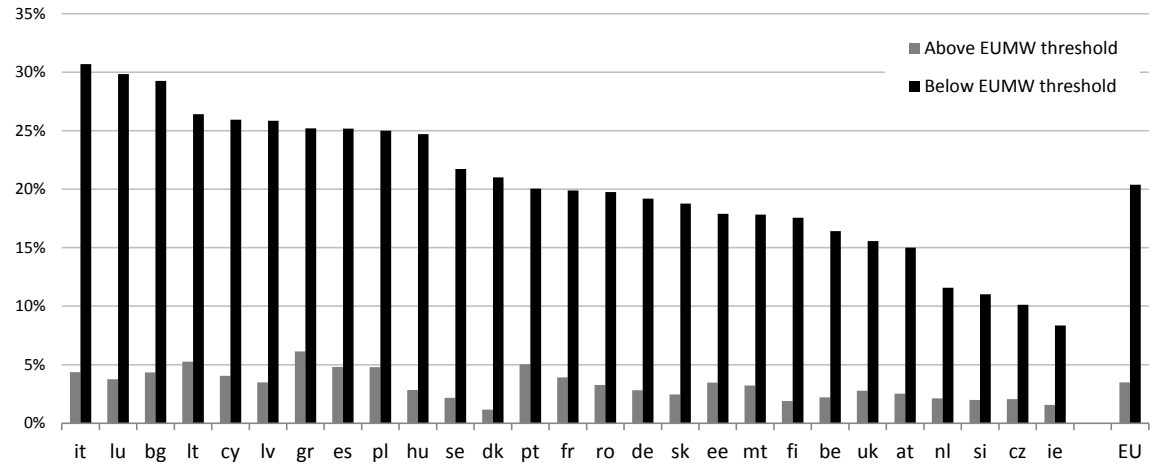

Figure 20: Workers that live in households below the relative poverty line as a percentage of workers above and below the EUMW threshold

made equivalent by weighting each according to their age, using the so-called modified OECD equivalence scale (the first adult receives a value of 1, other adults 0.5 and children 0.3).

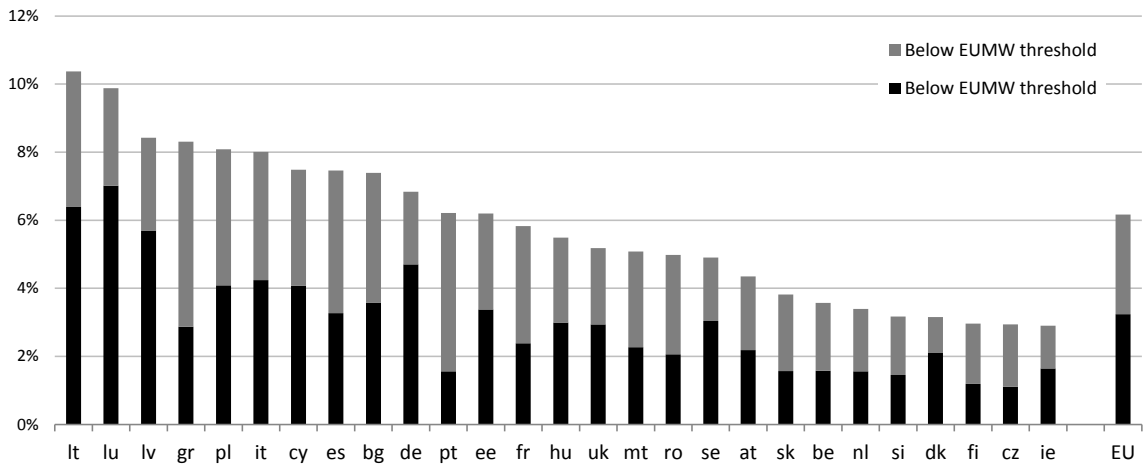

Figure 21: Workers that live in households below the relative poverty line as a percentage of all workers, and share above and below the EUMW threshold

The reason for such pattern lies in the fact that within the EU, in-work poverty is a relatively small phenomenon. Figure 21 shows the overall incidence of in-work poverty at the individual level: in other words, how many workers in each country live in relative poverty. On average, for the EU as a whole, such percentage is barely 6%, according to the 2010 EU-SILC data we are using, ranging from around 10% in Lithuania and Luxembourg to less than 3% in Ireland, Czech Republic and Finland. Figure 21 shows also the share of those workers who are below the EUMW threshold of 60% of the median national wage (the black section of the bars), and as we can see, it is a very sizeable one. For the EU as a whole, more than 50% of all the working poor fall below the hypothetical EUMW threshold. At the country level, such percentage varies between 71% for Luxembourg and 25% in Portugal, but only in 3 countries it is below 40% (Portugal, Greece and the Czech Republic). If the establishment of a hypothetical EUMW of 60% of the median would raise the earnings of those people, we can say that it would raise the earnings of a majority of the *working poor* in most countries.

But as we said earlier, poverty is a phenomenon which is best studied from the perspective of households, rather than individual workers. Figure 22 shows the overall incidence of relative poverty in Europe at the household level according to the EU-SILC 2010 data that we are using in this report. The percentage of households across Europe whose equivalised disposable income is below 60% of the median in each country is 17.5%, with the usual variation across countries (from 24% in Bulgaria to less than 10% in the Czech Republic). But the important point for our purposes is that more than half of those households have no worker at all, as can be seen by the breakdown of the bars into the grey (no worker in the household) and black (at least 1 worker) segments. Furthermore, the share of poor households with workers below the EUMW threshold is even smaller, as can be seen by the grey triangle.

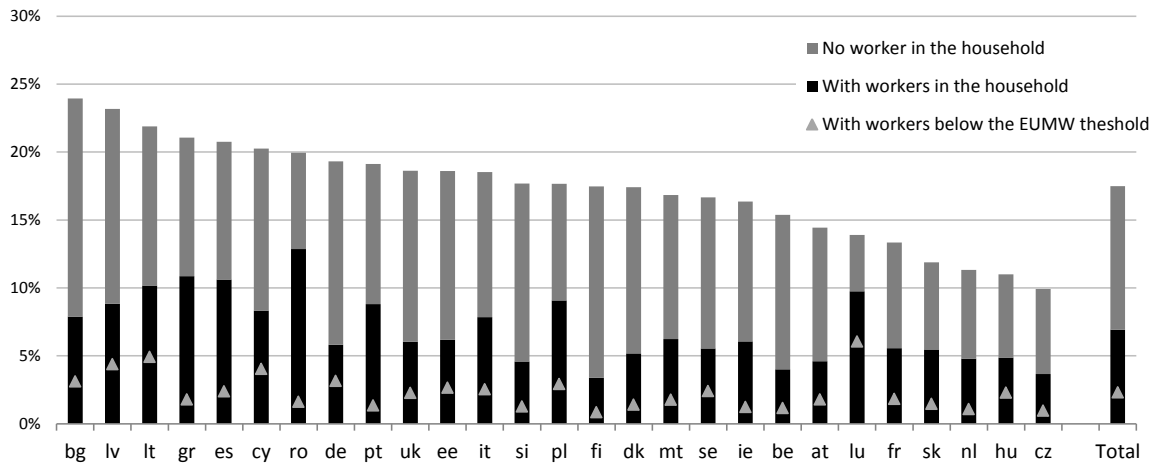

Figure 22: Percentage of households under the poverty line, and shares according to the employment status of their members

Figure 23 makes this point even clearer by focusing on the share of poor households with workers in them. As we already saw in the previous chart, such share is relatively low: for the EU as a whole, it is 39%, and it is only significantly above 50% in Luxembourg and Romania. So in Europe, relative poverty is mostly concentrated in non-working households, households with no wage earner. But if we further break down such percentage into households with at least one worker below the hypothetical EUMW threshold and households where all earners are above the threshold, we can see that most of them are in the latter category. In other words, when the households below the poverty line have workers in them, they are more likely to be above the EUMW line (for the EU as a whole, the share of poor working households with no worker below the EUMW line is 66%). This is because the household composition of both groups differs: workers below the (household) poverty line but above the (individual) EUMW line tend to live in households which are larger and with fewer wage-earners.

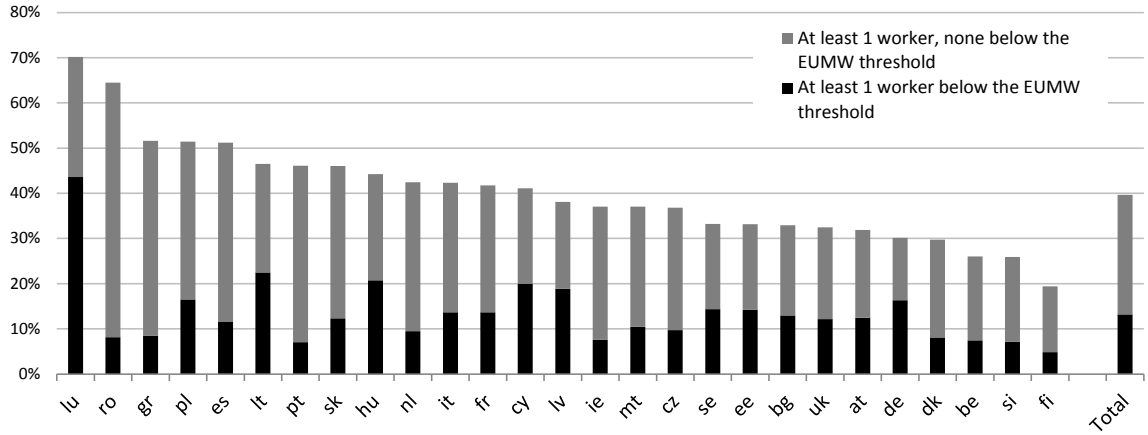

Figure 23: Share of households in relative poverty, according to the employment status of household members

Finally, we can also use figure 23 to evaluate the potential impact of the hypothesized EUMW policy on overall poverty from a household perspective. The black section of the bars shows the

percentage of EU households in each country which have at least one worker below the EUMW line, and therefore the share of poor households that could benefit from the discussed policy. For the EU as a whole, such percentage is 13%, and only in two countries (Luxembourg and Lithuania) it is above 20%. So it seems fair to say that the overall impact of such a policy on relative poverty at the household level would be limited (of course, not taking into account potential spill-over or disemployment effects which are unpredictable but which could change completely the picture). This is because, on the one hand, household poverty in Europe is more related to not working at all than to having low wages; and on the other hand, because even for poor working households, the composition of the household has often a larger impact than being or not below the hypothetical EUMW threshold.

In conclusion, we can say that, although the hypothetical EUMW policy could have a positive impact on *individual-level in-work* poverty in Europe, the significance of such impact is diminished by the fact that in-work poverty is not a widespread phenomenon in Europe. Looking at poverty at the household level and expanding the focus to the general population, we could see that in fact, most poverty in Europe is related either to not working at all (most poor households have no wage-earner) or to the composition of the household rather than to the wage earned by its members. What this means is that the impact that the hypothetical EUMW would have on *household-level* relative poverty would be quite minor (only 13% of poor households in Europe have one or more members currently earning below the EUMW threshold, and therefore would potentially benefit from such policy).

7.2. What impact would an EUMW have on trade and competitiveness?

An argument that is sometimes raised against minimum wage policy is that it can have a negative impact on international competitiveness and trade, to the extent that it involves an increase in unit labour costs (in other words, to the extent that the increase in pay is not compensated by an increase in productivity of a similar magnitude). This is a very difficult issue to study empirically, because there is no data on international competitiveness and trade at the company level that we could use to evaluate the impact of the hypothesized change in the wage distribution.

What we can do, though, is a rough approximation by linking data from SES 2010 with external data on international trade, by country and 2-digit NACE sectors. In other words, we can see whether the sectors (within each country) which are more export-oriented have a larger or smaller share of workers below the hypothetical EUMW threshold, as a way to do a rough evaluation of the potential impact of such a policy on trade.

	Employment by share of exports in value added					Employment
	Non-tradable	Less 10%	10-50%	50-100%	More 100%	by sector
Primary	0.0%	17.0%	79.2%	1.9%	1.9%	0.6%
Constructi	0.0%	86.5%	13.5%	0.0%	0.0%	6.1%
LTI	0.7%	4.4%	26.3%	17.4%	51.3%	15.3%
HTI	0.0%	0.0%	9.3%	37.6%	53.1%	7.2%
LKIS	60.5%	33.1%	5.0%	1.0%	0.4%	31.5%
KIS	16.8%	43.6%	24.9%	3.4%	11.3%	16.4%
Education	54.8%	45.2%	0.0%	0.0%	0.0%	9.7%
Health	100.0%	0.0%	0.0%	0.0%	0.0%	13.5%
Total	40.7%	27.9%	11.6%	6.2%	13.6%	100.0%

Table 24: Share of employment by exports to value added and broad sectors

The external data on trade we will use here comes from the World Input-Output Database,[62] and refers to the share of exports to total value added in each specific sector and country.[63] Table 24 shows for the EU as a whole the distribution of employment according to the share of exports to value added, breaking it down by broad economic sectors. As we can see, two thirds of employment is in sectors which are either non-tradable or where exports account for less than 10% of overall value added: these sectors are mostly in low knowledge intensive services, education and health. The next category, with a share of trade in value added between 10 and 50%, accounts for 12% of employment, mostly in knowledge intensive services and low technology industries. The two categories where exports account for a larger share of value added (more than 50%) account for roughly 20% of employment, and are mostly linked to high and low technology industries, and marginally to knowledge intensive services.[64]

	Share of workers below the EUMW threshold by share of exports in value added					
	Non-tradable	Less 10%	10-50%	50-100%	More 100%	
Primary	0.0%	3.9%	1.8%	5.3%	0.2%	2.2%
Constructi	0.0%	8.3%	25.1%	0.0%	0.0%	10.6%
LTI	23.5%	33.9%	14.5%	12.5%	6.9%	11.2%
HTI	0.0%	0.0%	2.0%	3.1%	5.3%	4.2%
LKIS	14.6%	12.0%	9.3%	9.7%	5.6%	13.4%
KIS	6.6%	13.0%	3.9%	2.2%	2.5%	8.1%
Education	7.1%	0.9%	0.0%	0.0%	0.0%	4.3%
Health	6.8%	0.0%	0.0%	0.0%	0.0%	6.8%
Total	10.5%	10.3%	9.7%	7.4%	5.9%	9.5%

Table 25: Share of workers below the EUMW threshold, by exports share to value added and broad sectors

Table 25 shows the share of workers below the hypothetical EUMW threshold for the same categories of trade share in value added and broad sectors. There is a clear relationship between the export intensity of the sector and the share of EUMW workers: overall, the incidence of such

[62] We are very grateful to Robert Stehrer, from the Vienna Institute of International Economic Studies, for providing us with this data.

[63] To avoid being biased by short-term fluctuations, we used the average of the period 2000-2010.

[64] The value of more than 100% occurs when a sector imports intermediate goods, adds some value to them, and exports them again. The value of those exports include the value of the intermediate goods, hence the seemingly strange result.

policy would be two times larger in the non-traded than in the highly traded sectors; and within each sector, the most traded sub-sectors consistently have a smaller share of workers below the EUMW threshold. For instance, low technology industries have an overall share of workers below the EUMW threshold of 11% (slightly above average), but such share is much larger in the subsectors with a lower trade intensity: the LTI subsectors where trade intensity in value added is below 50% (which account for roughly one third of all LTI employment) have on average 20% of employment below the EUMW threshold, compared to 13% for the LTI subsectors where trade accounts for between 50 and 100% of value added and only 7% for the LTI subsectors where exports are above 100% of value added. In the most export-oriented subsectors of high technology industries and knowledge intensive services, on the other hand, only between 2 and 5% of workers are below the EUMW threshold.

Figure 26 shows the share of workers in the most export-oriented sectors (where trade accounts for more than 50% of value added) that would be affected by the hypothetical EUMW policy. As we can see, only in Latvia more than 20% of workers would be affected, a proportion which reaches 15% in Lithuania, 13% in Poland, 12% in Ireland and Hungary. In all the other countries, less than 1 in 10 employees in these sectors would be affected (less than 1 in 20 in Italy, Portugal, Spain, France, Luxembourg, Sweden and Finland).

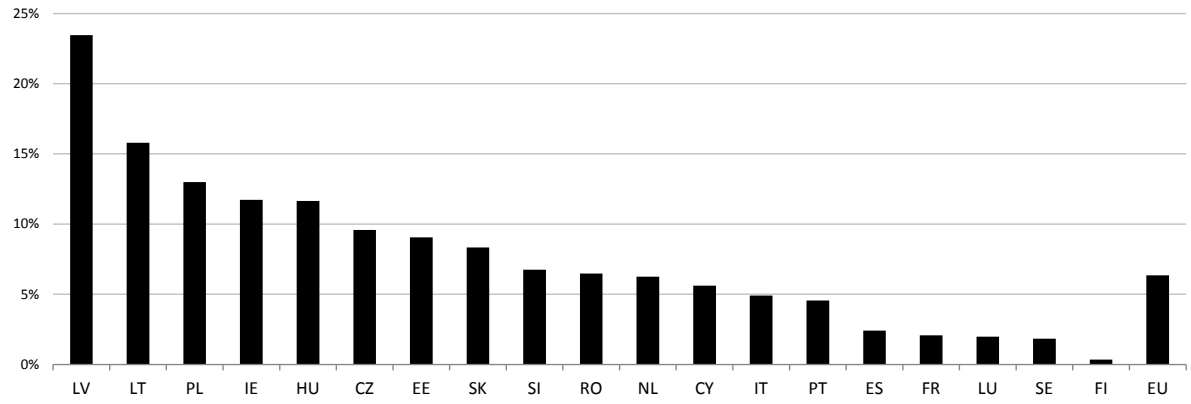

Figure 26: Share of workers below the EUMW threshold in export-oriented sectors (share of exports to value added above 50%)

So with very few exceptions, it seems very unlikely that an EUMW policy setting a threshold of 60% of the national median wage would have any impact of significance on exports and international competitiveness. Of course, we could only do a very rough approximation, that was not based on a very precise measure of trade intensity nor did it take into account for instance possible spill-over or other indirect effects. Still, there are some important reasons to think that the results presented in this short section may have even overestimated the potential impact of the EUMW policy on exports and trade (in other words, that they may be even smaller). First, we had to use SES for this exercise because EU-SILC does not include the necessary detail in the sector variable: but as we have repeatedly said, SES has the very important problem of not including companies with less than 10 employees, a bias which is especially significant in this case because the vast majority of these companies are probably not export-oriented and (as we have shown in previous sections) have a much larger share of workers below the EUMW threshold. Second, the fact that the proposed policy involves a simultaneous increase of minimum wages towards the threshold in most European countries could reduce significantly the potential impact on competitiveness at the country level, since most international trade of member states is intra-EU

(if the wage structure of the most important competitors increases similarly, the relative competitiveness vis-à-vis them would remain unchanged).

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