WORKING PAPER

Labour market change

Wage developments in the EU and the impact of Germany's minimum wage

Germany's minimum wage has reduced wage inequalities

Introduction

Developments in wage levels and wage inequalities have been a highly debated topic in recent years, both in academia and policy circles. Before the crisis and against a general background of economic expansion, wage growth below productivity levels and growing levels of low-pay work were often the subject of empirical research, while widening pay differentials among the workforce were already signaled as the main driver behind the trend towards growing inequality levels identified in many developed countries over the previous decades (OECD 2008, 2011).

Then the crisis emerged and some voices pointed to those widening inequalities and declining labour shares as contributing factors to a weakening demand and the Great Recession (Stiglitz 2012). Against a bleak background of employment turbulences and weak economic activity, concerns about wage developments continued to be high on the agenda: firstly due to the magnitude of the downwards wage corrections affecting some segments of the workforce in those European countries most severely hit by the crisis and then, as the economic situation gradually improved, due to the sluggish wage growth observed across European countries.

This article feeds into this discussion by providing an update picture of the wage and wage inequality developments affecting the EU-28 countries by using the most updated comparable micro-data on wages across European countries, recently made available by the Eurostat's European Union Statistics on Income and Living Conditions (EU-SILC). Results must be interpreted with care due to data caveats, but results based on the EU-SILC's last wave from 2016 (referring to wages in 2015) provide interesting insights on the European wage dynamics.[1]

EU-SILC data for 2015 shows that real wage growth became generally stronger and more generalised across EU-28 countries, especially among most Eastern European countries, which therefore continued with a wage catch-up process that had been interrupted by the crisis. Moreover, wage inequalities declined in around two-third of European countries, but very especially in Germany. Results show that the German minimum wage policy reverted previous trends in the labour market by causing a marked reduction in wage inequality as a result of lifting the wages of the lowest-paid employees, which tended to benefit relatively more lower-skilled, female, younger (and oldest) employees, in part-time employment and working in smaller companies in service activities.

Progress in real wages

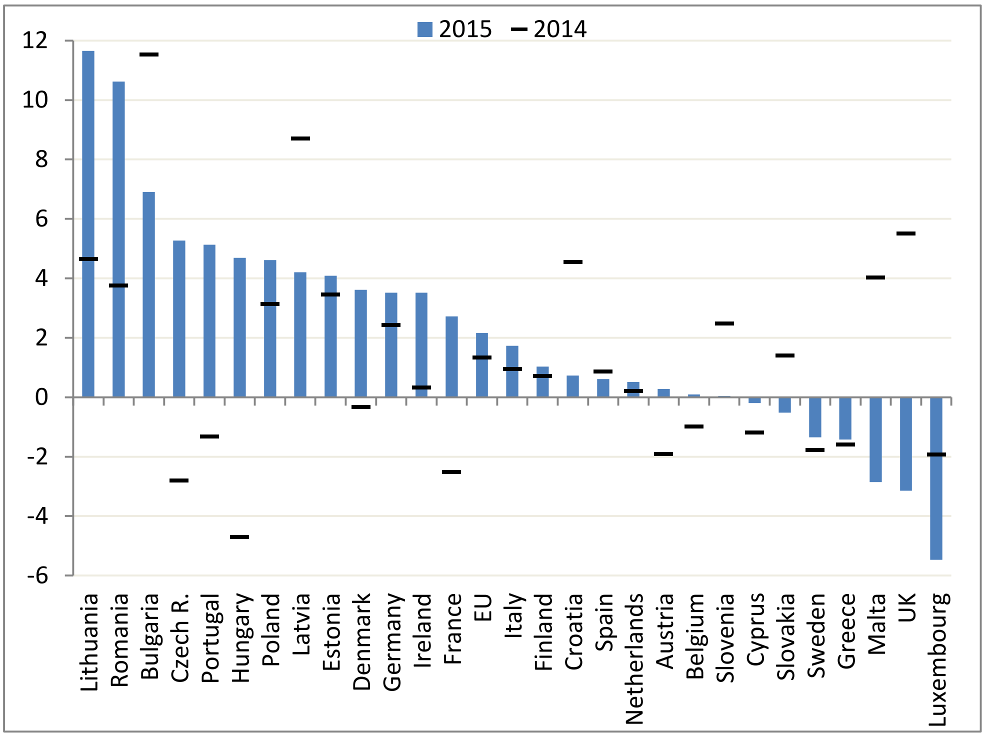
Figure 1 offers a first grasp of the aggregate wage dynamics in 2015 by depicting wage growth in real terms across European countries in comparison to 2014. Wage dynamics became generally more positive in 2015, as real wages strengthened their expansion in many countries and started to grow in some others. Real wages progressed in more than two thirds of European countries and the most significant relative improvement as compared to 2014 occurred in several new Member States (Lithuania, Romania, Czech Republic, Hungary) and in countries such as France, Portugal, Ireland or Denmark.

The data shows a clear differentiation by European regions. Average wages progressed much more notably among most Eastern European countries (with the exceptions of Slovenia and

[1] In order to provide a full-time equivalent measure of wages comparable across all employees, this article uses a full-time equivalent measure of wages that adjusts for part-time employment by multiplying the number of months in part-time jobs by a country sex specific ratio of median hours of work in part time jobs to median hours of work in full time jobs. Moreover, improbably low wage levels below a threshold set at half the minimum wage in a given country and year are eliminated (for further minor adjustments and data caveats, see Eurofound 2015).

Slovakia), while wages were generally more subdued among western European countries. Among this latter group, average real wages grew significantly and above the European average only in Denmark, Germany, Ireland and France, while they declined in Sweden, the UK and Luxembourg. With the exception of Portugal, Mediterranean countries continued experiencing either moderate progress (Italy, Spain and as well Croatia) or downward corrections (Greece, Malta and Cyprus) in their real wage levels.

Figure 1: Average real wage levels across EU-28 countries (growth rate, in %).



Note: EU refers to the average among EU-28 countries; countries are ranked by the magnitude of the wage growth in 2015.

Source: EU-SILC.

Recent work by Eurofound on the evolution of income inequalities over the previous decade unveiled a clear process of income convergence taking place between European countries, mainly due to catch-up growth in Eastern Europe (from which Mediterranean countries were generally excluded) and more subdued income growth in most core European countries. This process of convergence between European countries, which was particularly intense in the area of wages, was halted by the Great Recession, although it seemed to be re-activating based on the data which was available then. The new data being presented in this article confirm the re-emergence of this process of wage convergence between European countries, again due to notable wage growth in Eastern Europe and more moderate progress among the oldest European Member States, with several Mediterranean countries still experiencing a divergence path from the European average.

Declines in wage inequality levels

How should this general expansion in real wage have translated into wage inequality trends? A clear answer to this question is not possible, since the described trends in average wages may be the result of diverging patterns over the wage distribution in the different EU-28 countries.

According to both the theoretical and the empirical literature, wage levels are supposed to move together with the business cycle and expand in times of economic growth, and this is something that has generally occurred across European countries in 2015, as shown in the previous section. Nevertheless, things are less clear-cut in the case of wage inequalities: they are theoretically supposed to decrease during economic upturns, but the empirical literature has often identified a weak business cyclicality of wage inequalities. Indeed, previous [Eurofound work on the evolution of wage inequality] identified mixed country patterns across countries during the recent Great Recession.

Table 1: Relative change in average real wages by wage quintile and wage inequality, 2015 (%)

	Average real wage growth and by wage quintiles						Wage inequality	
Country	Average wage	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Level	Change
Lithuania	11.7	15.0	14.0	14.5	14.2	8.1	0.332	-4.4
Romania	10.6	11.7	9.5	10.2	7.7	11.6	0.253	-0.5
Bulgaria	6.9	-15.3	-6.4	-0.3	7.4	19.2	0.369	21.8
Czech R.	5.3	7.8	4.9	5.1	5.2	4.8	0.270	-0.8
Portugal	5.1	3.6	0.7	1.3	2.0	9.5	0.369	5.0
Hungary	4.7	2.7	4.1	3.9	4.9	5.6	0.284	2.3
Poland	4.6	5.6	5.6	5.3	4.3	3.7	0.309	-1.8
Latvia	4.2	6.7	5.9	4.9	4.7	2.7	0.333	-2.3
Estonia	4.1	8.7	5.0	4.6	3.4	3.3	0.343	-1.8
Denmark	3.6	1.4	2.3	3.0	3.7	5.1	0.243	3.9
Germany	3.5	18.9	5.6	3.0	2.6	0.8	0.297	-6.3
Ireland	3.5	1.3	0.9	-0.4	0.1	8.1	0.354	5.7
France	2.7	0.9	1.8	2.1	1.8	4.3	0.277	2.7
Italy	1.7	1.0	0.2	0.4	0.6	3.8	0.273	2.9
Finland	1.0	0.7	0.2	0.1	0.2	2.4	0.244	2.1
Croatia	0.7	3.3	0.8	1.5	0.8	-0.4	0.282	-2.0
Spain	0.6	4.0	1.2	0.5	1.0	-0.4	0.325	-1.7
Netherlands	0.5	2.7	2.1	1.4	0.3	-0.8	0.286	-2.5
Austria	0.3	1.7	1.6	0.8	1.3	-1.3	0.302	-2.4
Belgium	0.1	0.7	0.2	0.4	0.9	-0.8	0.234	-1.3
Slovenia	0.0	1.0	1.1	0.7	1.5	-1.7	0.270	-2.5
Cyprus	-0.2	0.6	-0.4	0.3	0.3	0.1	0.351	-1.0
Slovakia	-0.5	-7.4	-3.0	2.3	2.8	-0.3	0.220	5.1
Sweden	-1.3	4.1	-0.7	-0.8	-0.7	-3.7	0.245	-4.9
Greece	-1.4	-2.4	-3.3	-1.2	-0.5	-1.7	0.266	-1.8
Malta	-2.9	-0.5	-2.2	-3.4	-3.1	-3.3	0.285	-1.2
UK	-3.1	2.6	1.9	0.2	-1.3	-7.1	0.362	-6.2
Luxembourg	-5.5	-7.7	-7.6	-7.5	-7.9	-1.9	0.337	4.8
EU average	2.2	2.6	1.6	1.9	2.1	2.5	0.297	0.4

Note: countries are ranked by the magnitude of the wage growth in 2015.

Source: EU-SILC

Table 1 shows how wage growth over the five quintiles of the wage distribution shaped the evolution of wage inequalities in 2015, which declined in 18 of the EU-28 countries. Since this was a time of economic recovery, it would seem wage inequalities behaved counter-cyclically by declining at the same time that wage levels progressed across European countries. Nevertheless, there is not a significant association between the observed changes in average wage levels and in wage inequality levels, since patterns are mixed across European countries. Three groups of countries can be distinguished:

- One, those Eastern European countries characterised by notable wage growth (above 4%), where the most positive scenario emerges (those on top of Table 1). Most of them registered notable wage growth leading to reductions in wage inequality due to higher wage growth among those with lower wages than among those at the top of the wage distribution (in Baltic countries, Poland, Czech Republic and Romania). Nevertheless, other Eastern European countries (and Portugal) registered growing wage inequalities due to the more positive evolution of wages at the top than at the bottom of the distribution (in Hungary and, very significantly, in Bulgaria).
- Two, there is a small group of countries where real wages progressed significantly (between 1-3%) but, contrary to what occurred in many Eastern European countries, they did relatively more so among those earning higher wages than at the bottom of the wage distribution, therefore resulting in wage inequality hikes. This happened in Denmark, Ireland, France, Italy and Finland.
- Last, there is a third group of countries (at the bottom of Table 1) where real wages declined or remained rather stagnant (growing below 1%) but where wage inequalities declined as well (with the exceptions of Luxembourg and Slovakia). This was due to wages performing relatively worse at the top of the wage distribution. For instance, real wage declines at the top quintile led to notable falls in wage inequality in the UK and Sweden.

Germany would belong to the second group of countries, since it is characterised by a significant wage growth (3.5%) but far away from the much higher rates registered by eastern European countries. Nevertheless, contrary to the other countries in this group, wage inequality registered the largest relative drop among all EU-28 countries due to wage progress being strikingly larger among low-wage earners. This was due to the minimum wage policy introduced in Germany from 2015, whose impact is explored next in more detail.

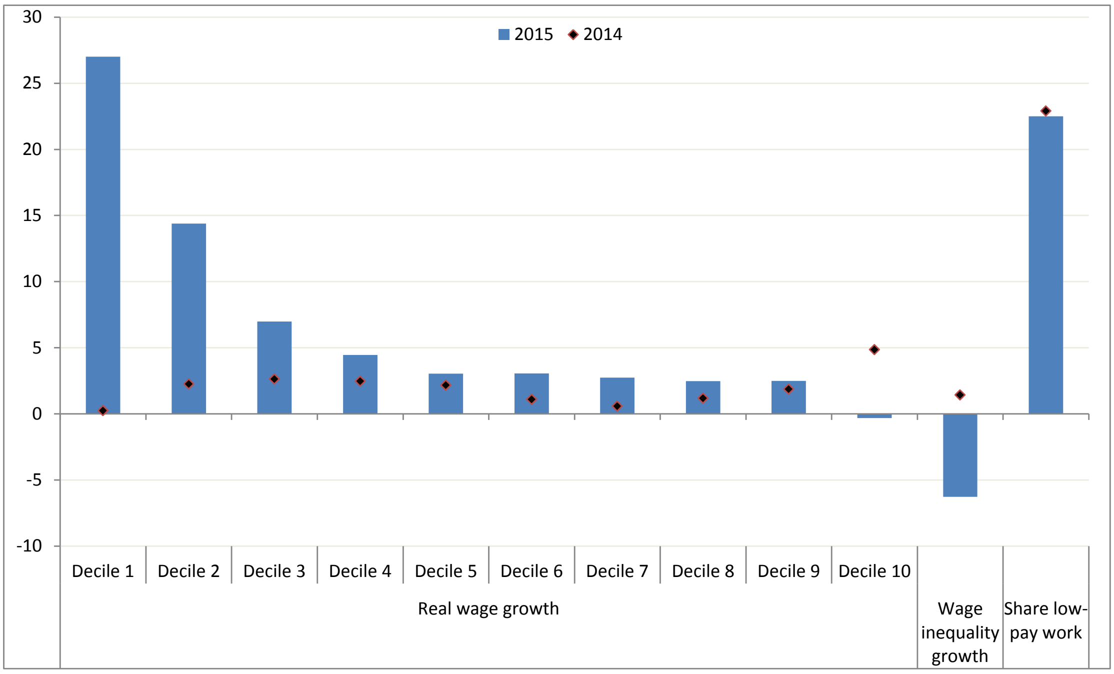
The impact of the German minimum wage policy

Developments in collectively agreed minimum wages in Germany following the reunification led to the expansion of the low-pay segment among the workforce, since rapidly declining coverage rates and weaker collective bargaining structures resulted in a large proportion of the German workface being uncovered by collective agreement setting wage floors (around 40% of them according to some empirical studies).

An early attempt was made from 2005 to address this issue by establishing procedures for the creation of industry-specific minimum wages. Nevertheless, progress in reducing the amount of employees uncovered by wage floors was slow, especially in industries without collective bargaining or with low coverage, which led to a growing debate about the need to introduce a statutory minimum wage. Finally, a statutory minimum wage was introduced for the first time in Germany from January 2015, set at €8.5 per hour (€1,440 per month). The minimum wages is to be revised every two years. In June 2017, it was decided to raise it to €8.84 per hour (€1,498 per month), effective from 2018. In June 2018, the next update to be implemented from 2019 will be decided.

The recently released EU-SILC data permits a detailed assessment of the impact of the German minimum wage policy. Although the progress in real wage levels in Germany was significant but not among the higher ones among EU-28 countries (see Figure 1), the introduction of a wage floor had a very important effect on the German wage distribution. Figure 2 depicts wage growth over each of the ten wage deciles of the wage distribution and reflects its impact on the evolution of wage inequality and incidence of low-paid work. It is obvious that this policy decision introduced a significant break in the wage dynamics going on in the Germany labour market. Wage inequalities had expanded in 2014, mainly due to higher wage growth among top earners and stability at the bottom wage quintile. On the contrary, the minimum wage lifted very notably the wages of the lower-paid employees in 2015 (especially those at the two bottom deciles of the wage distribution), while the wage progress became gradually lower when moving up the wage distribution. This explains why Germany registered the largest relative reduction in wage inequality levels among all EU-28 countries in 2015.

Figure 2: Relative change in average real wage levels by wage deciles and wage inequality and share of low-paid employees in Germany, 2015 and 2014 (%)



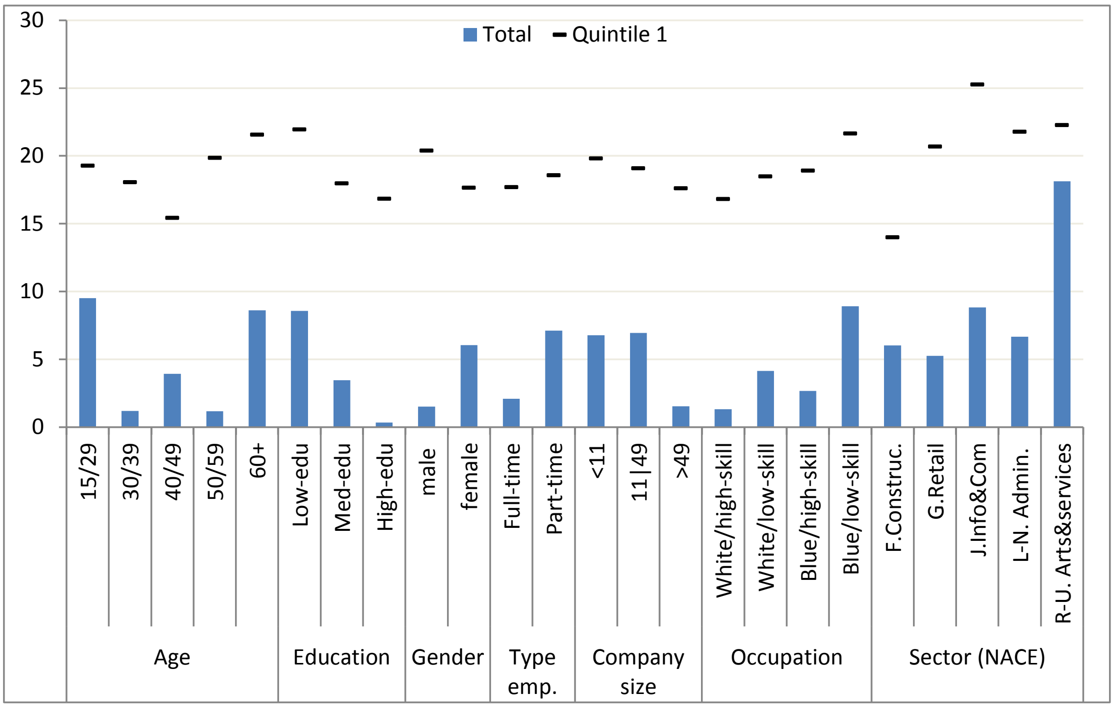
Source: EU-SILC

Previous Eurofound research conducted in 2010 estimated Germany had the largest share of low-paid employment (understood as the share of employees with wage levels below 60% of the median wage) among the EU Member States, at around 24.5%. Against the background of a generally positive labour market outlook in Germany, this share fell just below 23% in 2014 and further down to 22.5% in 2015. In this case, the effect of the minimum wage is perhaps not so significant, for several reasons. One, the general wage progress registered in 2015 pushed the low-pay threshold upwards, since this threshold is defined as a share of the median wage (if the low-pay threshold defined in 2014 was used for 2015 as well, the low-pay share would have declined to 22.3%). Two, even though the introduction of the wage floor lifted the wages of the worst paid employees, the statutory minimum wage was set at a level well below the low-pay threshold (at around 48% of the median wage of full-time employees according to Eurostat and the OECD). Three, some researchers (Chagny and Le Bayon 2016) have pointed out to a less fortunate effect of the minimum wage: companies may have reacted to the impact of the minimum wage by flattening pay scales around the minimum wage level, which has resulted in wage restraint among certain categories of employees.

Uneven impact within the workforce

The introduction of the minimum wage pushed wage levels upwards, but to varying degrees among different groups within the workforce. Who were the most benefitted? Figure 3 presents data on the growth of real wage levels in 2015 for different groups within the workforce, depending on their age, their educational level, their gender, the type of employment, the size of the company at which their work, their occupational category and the economic sector of work.

Figure 3: Relative change in average real wage levels (total and at wage quintile 1) by employee characteristics, Germany, 2015 (%)



Source: EU-SILC

Data reflects wide disparities in wage progress depending on the characteristics of the workforce: the oldest and, especially, youngest employees (those aged more than 60 and less than 30, respectively) registered much larger wage increases than the core of the workforce; employees with lower levels of educational attainment much more than those with higher education; female employees more than their male counterparts; part-time employees much more than full-time employees; employees working in smaller companies more than those working at larger firms. The more beneficial impact of the minimum wage policy among lower-skilled employees is confirmed when looking at the wage increases by occupational category: blue–collar low-skilled employees (and white–collar low-skilled employees to a lower extent) enjoyed a larger expansion of their wages than their higher-skilled counterparts.[2] The economic sectors where average wages increased the most were mainly those related to services: arts, entertainment and other services activities; information and communication; real state, professional and administrative activities. Employees working in construction and retail registered as well higher than average wage increases.

As explained earlier, the main effect of the German statutory minimum wage was to raise the wage levels at the very bottom of the wage quintile, very notably at the two lowest wage deciles (see Figure 2). This suggests the main reason behind the relatively larger expansion of wage levels among the abovementioned groups would be their higher presence among the

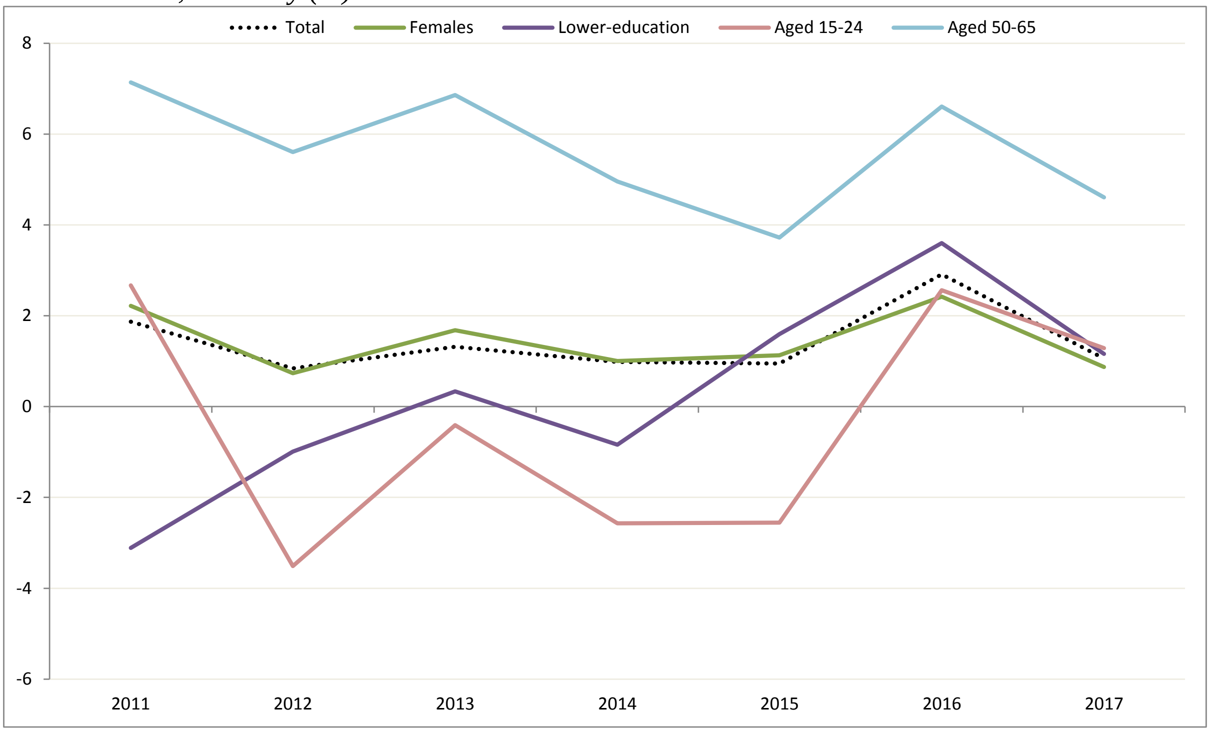
[2] The normal classification of occupational categories has been clustered into these four groups: white-collar and high-skilled employees (including managers, professionals and technicians occupations); white-collar and low-skilled employees (including clerks and service and sales workers occupations); blue-collar and high-skilled employees (including skilled agricultural and craft workers occupations); and blue-collar and low-skilled employees (including plant and elementary occupations).

bottom of the wage distribution. This is confirmed by looking at the data on wage growth among those same groups within the workforce, but in this case focussing only on those at the bottom wage quintile (see Figure 3). The lowest paid employees at the bottom quintile of the wage distribution in Germany benefited from a large and rather generalised wage expansion in 2015 and the intensity of this wage growth at the bottom of the wage distribution did not vary so much depending on the characteristics of the different sub-groups as when the whole workforce is taken into account.

Employment effects

As it has been shown, the German minimum wage policy introduced in 2015 caused a notable wage increase among the lowest-paid employees, benefitting the less well-off groups within the workforce and leading to a reduction of the low-pay segment and, especially, the largest fall in wage inequality registered in 2015 among EU-28 countries. But did this come at a cost? Standard economics warns about the potential disemployment effects of minimum wages because, if set too high, they could damage the employment prospects of those lower-skilled, lower-paid employees it is intended to help. Such arguments were put forward before the introduction of the Germany minimum wage in 2015, with some voices fearing up to one million jobs could be lost.

Figure 4: Yearly relative change in the total number of employees by workforce characteristics, Germany (%)



Source: LFS

Although a more detailed analysis with micro-data would be required to properly asses the existence of such disemployment effects, data on aggregate employment levels for some of the groups who benefitted most from the wage increases show those initial fears were vastly exaggerated. Figure 4 below pictures a positive employment outlook in Germany after the introduction of the minimum wage. The overall number of employees maintained its expansion rate in 2015 and accelerated in 2016, before moderating in 2017. Employment levels for females and younger employees follow the same pattern, while those among lower-educated employees even expanded notably in 2015 and 2016. The relatively high growth rate of older employees levels moderated in 2015, but this had occurred as well in 2014 and then it accelerated again in 2016.