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## Article

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DIW Economic Bulletin

## Provided in Cooperation with:

German Institute for Economic Research (DIW Berlin)

*Suggested Citation:* Brenke, Karl; Kritikos, Alexander S. (2017) : Hourly wages in lower deciles no longer lagging behind when it comes to wage growth, DIW Economic Bulletin, ISSN 2192-7219, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin, Vol. 7, Iss. 21, pp. 205-214

This Version is available at:

<https://hdl.handle.net/10419/158840>

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# Hourly wages in lower deciles no longer lagging behind when it comes to wage growth

By Karl Brenke and Alexander S. Kritikos

For many years, only better-paid workers benefited from Germany's real wage increases. In contrast, dependent employees with lower hourly wages suffered substantial losses, while the low-wage sector expanded. Around 2010, these trends came to an end. Now all wage groups benefit from wage increases—even if those in the middle of the distribution lag somewhat behind. At the very least, this new pattern means that the gap between high and low wages is not getting wider. This development is kind of surprising, as the labor market is shifting to higher-skilled jobs. Workers with higher hourly wages are still doing relatively well when it comes to wage developments; this applies not only to the long-term trend, but also to the recent developments.

A longitudinal analysis based on data from the Socio-Economic Panel (SOEP) shows that with time, a large share of low-wage workers were able to earn much higher hourly wage rates. For example, more than half of those workers whose wages were in the bottom 20 percent in 2010, and who were still dependently employed in 2015, were no longer among the low-wage workers. Full-time employees in this group experienced stronger increases.

Overall, the results show that hourly wages have been increasing consistently in real terms since the financial crisis and that the growth has been more evenly distributed than it was before. Nevertheless, the increases since 2010 have not made up for the real wage losses incurred by workers who were in the bottom 40 percent 15 years earlier.

Policy discussions are increasingly centering on the concept of “inclusive economic growth”—that is, a more even distribution of income growth that allows the entire population to participate in economic development. With the Federal Government's recently published, fifth Poverty and Wealth Report, it was pointed out that hourly wages among workers in the bottom 40 percent have been falling since the mid-1990s (Table 1).<sup>1</sup> This is why wage distribution has become a primary focus.<sup>2</sup> Correspondingly, if the definition of “inclusive growth” is limited to wage development, an equally strong increase in wages across the overall wage distribution can be seen as a measure of inclusive growth *within* this income category.

This debate is not limited to Germany: the growing inequality in the distribution of wages is also an issue in the U.S., among other countries. Over the past 20 years, U.S. employees in the highest decile (and especially the top percentile) of the wage distribution experienced the strongest increases in real wages. As a result, the gap widened between not only the highest and lowest wages, but also between the highest and median wages.<sup>3</sup>

This report thus focuses on Germany's wage development with regard to gross hourly wages before taxes and transfers. Changes in employment and qualification structures are also taken into account.<sup>4</sup> The study is based primarily on data from the Socio-Economic Panel (SOEP), which are collected annually by DIW Berlin in collaboration with Kantar Public (formerly TNS Infratest

<sup>1</sup> See “Nahles zum Armutsbericht 2017 ‘Wir müssen einen Pakt für anständige Löhne auf den Weg bringen,’” Interview with the Federal Ministry of Labour and Social Affairs, Deutschlandfunk (available online, retrieved on May 23, 2017).

<sup>2</sup> See “Wir müssen über Verteilung reden,” Interview with the Federal Ministry of Labour and Social Affairs, *Der Tagesspiegel*, retrieved April 4, 2017 (available online).

<sup>3</sup> See, for example, Branko Milanovic, *Global Inequality: A New Approach for the Age of Globalization*, Harvard University Press (2016).

<sup>4</sup> This analysis complements DIW Berlin's earlier studies on income distribution at the household level after taxes and transfers. For a recent example, see Markus Grabka and Jan Goebel, “Realeinkommen sind von 1991 bis 2014 im Durchschnitt gestiegen – erste Anzeichen für wieder zunehmende Einkommensungleichheit,” *DIW Wochenbericht* no. 4 (2017), 71–82.

Table 1

**Average annual growth rate of real hourly gross wages<sup>1</sup> according to the level of wages**

Median values, in percent

	1991-1998	1998-2004	2004-2009	2009-2012	2012-2015	1995-2015
1st (lowest) decile	4.2	-1.6	-2.7	1.7	1.4	-0.6
2nd decile	4.9	-0.9	-2.0	-0.1	2.2	-0.4
3rd decile	3.6	-0.6	-1.7	-0.1	1.4	-0.3
4th decile	2.3	0.0	-1.2	-0.2	0.7	-0.2
5th decile	1.9	0.2	-0.8	-0.4	0.7	0.0
6th decile	1.5	0.8	-1.1	-0.9	1.5	0.2
7th decile	1.4	0.8	-1.0	-0.6	2.0	0.4
8th decile	1.5	0.7	-0.9	-0.5	2.4	0.5
9th decile	1.6	0.5	-0.9	0.0	2.4	0.5
10th (highest) decile	1.2	1.0	-0.5	-0.6	2.5	0.4
Total	1.7	0.5	-1.1	-0.7	1.2	0.1
Average	2.0	0.4	-0.9	-1.0	1.5	0.1

1 Of employed individuals without apprenticeship certificates, etc.

Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

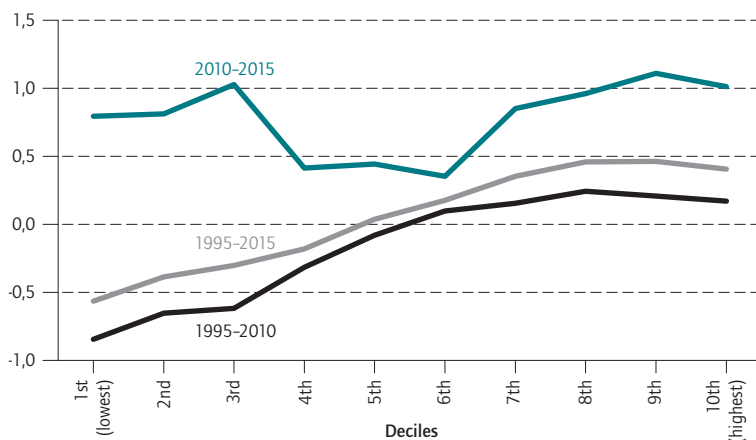
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In recent years, wage increases have been somewhat more pronounced.

Figure 1

**Development of real gross hourly wages, by decile<sup>1</sup>**

Average annual changes, in percent



1 Of employed persons without apprenticeship certificates, etc.; gross hourly wage = median.

Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

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Wage increases have been more evenly distributed since 2010.

Sozialforschung).<sup>5</sup> Data are available up to the year 2015. Official statistics on wages are also used; in this case, data exist for 2016.

**Wage growth more evenly distributed in the past few years**

After Germany's reunification, wage development was initially characterized by considerable wage increases in East Germany, which was trying to rapidly catch up with the wage levels of the West. The goal was not reached, however, and the catch-up process stopped in 1995.<sup>6</sup> Over the next 20 years, the respective labor market situations at the time—especially the cyclical economic conditions—played a major role. According to the calculation method used here (see Box), the overall wage growth between 1995 and 2015 was low: the middle wage (median)<sup>7</sup> as well as the average wage (arithmetic mean) increased in real terms by an annual average of only 0.1 percent (Table 1). When considering this figure, however, it is necessary to differentiate among the various worker groups and time periods.

It is thus useful to divide the observation period into economic cycles.<sup>8</sup> From 1991 to 1998, real wages rose by an annual average of 1.7 percent (as measured by the median), an increase that was also due to the special development in East Germany. In the subsequent cycle, which ran from 1998 to 2004, the average annual increase amounted to only 0.5 percent. This was followed by a period that led to the global financial crisis and brought about a substantial decline in real wages amounting to -1.1 percent per year. In the short cycle thereafter, from 2009 to 2012, hourly wages (adjusted for inflation) also decreased—but at -0.7 percent, the effect was less pronounced. In 2012, real wages began to increase once again.

If dependent employees are divided into ten equal-sized groups (deciles) according to their gross hourly wage amounts, significant differences in the wage develop-

5 For more on the Socio-Economic Panel, see: Gerhard G. Wagner, Jan Göbel, Peter Krause, Rainer Pischner, and Ingo Sieber, "Das Sozio-oekonomische Panel (SOEP): Multidisziplinäres Haushaltspanel und Kohortenstudie für Deutschland - Eine Einführung (für neue Datennutzer) mit einem Ausblick (für erfahrene Anwender)," *AStA Wirtschafts- und Sozialstatistisches Archiv* no. 2 (2008).

6 Karl Brenke, "Ostdeutschland - ein langer Weg des wirtschaftlichen Aufholens," *DIW Wochenbericht* no. 40 (2014), 952 f.

7 The present analysis primarily uses the median wage. This indicator is less susceptible to distortions resulting from special developments in individual groups or individuals among the respondents in the data used, and thus it proves to be more robust.

8 Only a rough breakdown is possible, because the data used here are annual data with economic cycles running over the course of the year. The beginning of the observation period is set as the middle of each economic cycle.

Box

**Determination of hourly wages based on SOEP data in comparison to other statistics**

Data on hourly wages are not collected directly in the SOEP surveys. Instead, respondents are asked to indicate their actual working hours per week—including overtime—and their monthly wages (gross as well as net) from a primary occupation. This information can then be used to calculate the hourly wages: monthly wages are divided by the product of weekly hours and a factor for the number of weeks in a month (here, the estimated factor was 4.3). Based on conversions using the official consumer price index, real wages can be determined; 2010 was used as the base year for the index. The SOEP only collects information on ongoing work-related earnings; special or one-time payments such as Christmas or holiday bonuses, as well as premiums, are excluded. Working time consists of what the respondents consider their actual working time on a monthly basis, typically excluding time off due to vacation or illness, for example. However, any overtime that may be incurred is also included, even when it is not or only partially remunerated.

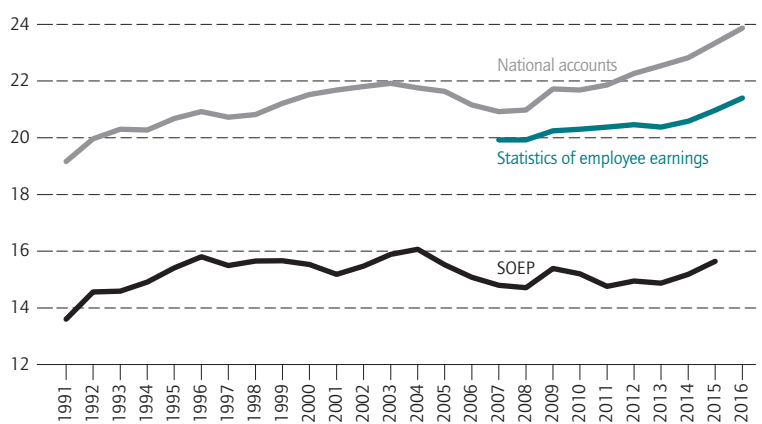
This method differs from the hourly wage calculations in the official national accounts. The method used there is based on wage estimations in which numerous specialized statistics are used as orientation factors. The goal is to gather data on paid working time—and thus special bonuses are also included. Working time is estimated separately, taking into account sick leave and vacation days, but excluding any unpaid overtime. The calculation of working hours is heavily based on assumptions—for example, it is assumed that no work is done on Saturdays or Sundays.

Another source is the official employee earnings survey that began in its current form in 2007. The data are primarily based on information provided by employers, and include paid working hours along with any special payments; unpaid overtime is not taken into account. Small businesses or operations are not included among the survey respondents; in general, the agricultural sector and private households are also excluded. For workers in “marginal employment,” only monthly—and not hourly—wages are recorded.

Figure

**Development of average real gross hourly wages according to the national accounts, the Socio-Economic panel, and employee wage statistics**

Euros, in 2010 prices.



Sources: Federal Statistical Office; The Socio-Economic Panel (V32.1); authors' own calculations

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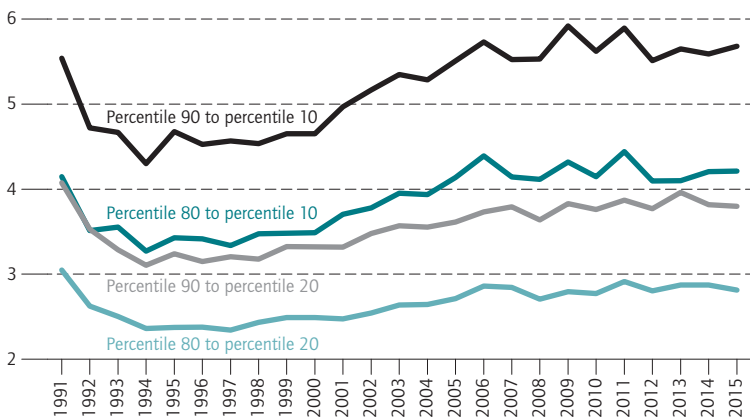
Because of these differences in the definitions and calculation methods, the data sources differ with regard to the calculated results for gross hourly wages (Figure). In terms of development over time, however, they run largely parallel. This is the case, however, only with the SOEP and the statistics on employee earnings. In contrast, data in the national accounts show a marked increase in gross hourly wages over the last two years. Why this is so—and why two official accounts diverge in their results—cannot be clarified here.

ment patterns become clear. From 1991 until 1998, real wages rose in all deciles, especially among low-wage workers, with wages in the lower five deciles increasing more powerfully than wages in the upper five deciles. From 1998 to 2004, this pattern flipped: the lower deciles experienced a decrease and the middle deciles experienced very little change, while wages in the upper deciles rose significantly. From 2004 to 2009, real wages decreased in all deciles, with low-

wage workers being hit especially hard. The developments between 2009 and 2012, however, paint a mixed picture; only in the lowest decile did the hourly wages actually increase in real terms. After 2012, hourly wages increased across the whole wage distribution: more powerfully at the upper end of the scale, and roughly average in the bottom three deciles. In contrast, the increase among middle-wage earners—that is, those in the fourth and fifth deciles—was relatively weak. The fact that low

Figure 2

**Ratio between gross hourly wages<sup>1</sup> at the upper end of the pay scale to gross hourly wages at the lower end of the pay scale**



<sup>1</sup> Of employed persons without apprenticeship certificates, etc.; gross hourly wage = median.

Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

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In recent years, the gap between high and low wages has not increased; nevertheless, it remains wide open.

wages have grown significantly in recent years is also—but not solely—due to the introduction of the statutory minimum wage.<sup>9</sup>

When longer time periods are considered, two different patterns emerge. From 1995 to 2010, the higher the earnings were, the better the wage development was (Figure 1), with the bottom four deciles—especially the lowest decile—suffering considerable real wage losses during this period.<sup>10</sup> The tides turned in roughly 2010, and a U-shaped development is observable from then on: middle-wage workers were now more likely to be left behind, and although they did not suffer real wage losses, they experienced below-average wage growth. Employees at the upper end of the pay scale experienced the highest growth during this long-term period.

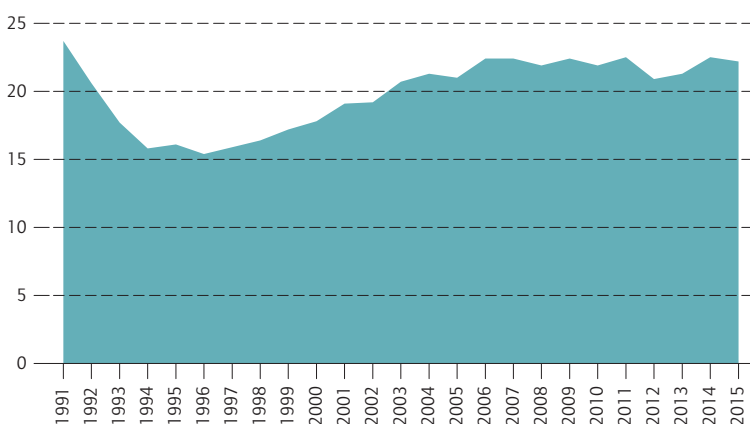
As a result of this major shift at the beginning of the current decade, upper and lower wages are no longer growing further apart: since 2010, the ratio between the two has stagnated after years on the rise (Figure 2).<sup>11</sup> As well, the share of the low-wage sector among those who are dependently employed as a primary activity did not increase any further and now account for roughly 22 percent of the dependent employees (Figure 3). This has already been the case since 2006, not least due to the relatively weak wage development that took hold in both the lower and middle deciles in the mid-2000s.

**More jobs are requiring higher qualifications**

In the past two decades, the labor market has undergone major changes when it comes to qualification levels, with regard to both the kinds of jobs being offered as well as the professional skills of the workforce itself. Jobs requiring a university degree have become much more prevalent (Figure 4); at the same time, the share of employees with academic backgrounds has also grown (Figure 5). According to the SOEP data, jobs requiring an apprenticeship or vocational school certificate have lost prevalence, and the share of the workforce with the corresponding qualifications has decreased slightly. Nevertheless, these jobs and employees still represent the

Figure 3

**Extent of the low-wage sector**  
In percent of all-wage employees<sup>1</sup>



<sup>1</sup> Of employed persons without apprenticeship certificates, etc.

Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

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The low-wage sector is no longer growing.

<sup>9</sup> Although the SOEP data from 2015—the year when the legal minimum wage was introduced—show a clear increase in the lower wages of the pay scale, above-average wage growth in the bottom decile were also observable in the preceding years.

<sup>10</sup> See also Karl Brenke and Markus Grabka, "Schwache Lohnentwicklung im letzten Jahrzehnt," *DIW Wochenbericht* 45 (2011) or Grabka and Goebel (2017), supra.

<sup>11</sup> A different wage differentials picture emerges when the total wages and working time are factored into the analysis, since the result is then also influenced by the volume of marginal employment and part-time work. See Karl Brenke, "War was? Zwei Jahre gesetzlicher Mindestlohn in Deutschland," *Ökonomenstimme* (January 26, 2017) (available online).

largest shares in the labor market by far. Jobs for which no vocational degree is required were losing prevalence up until 2010, after which they stagnated. The share of workers without a vocational qualification had likewise been declining for some time—but according to SOEP data, it has picked up somewhat since 2010. Nevertheless, it remains smaller (15 percent in 2015) than the share of jobs that do not require any training (24 percent).

Real gross wages have developed in different ways depending on the nature of the job. According to the SOEP data, wages for jobs requiring an academic background experienced a slight decline up until 2008, at which point they stagnated before picking up again in 2013 (Figure 6). For jobs requiring a vocational degree, hourly wages rose until the mid-2000s, temporarily reversed, and have been on the rise again since 2011. For low-skilled jobs, on the other hand, a drawn-out downward trend can be observed until 2011, at which point it came to a halt; correspondingly, this group also came off quite poorly in the long-term comparison, with a real wage loss of just under 20 percent compared to figures from 1991.<sup>12</sup>

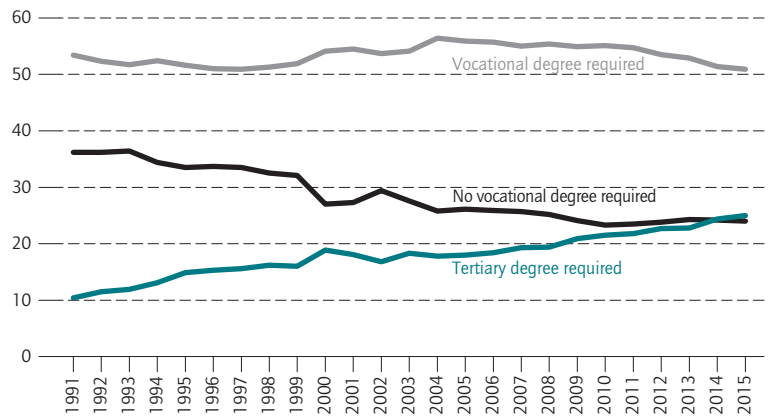
According to the statistics on employee earnings, gross hourly wage development was also rather weak for apprentices and low-skilled workers up until 2014 (Table 2). Between 2014 and 2015, their wages experienced a strong increase due to the introduction of the statutory minimum wage, which briefly gave the wage growth rates a boost before they returned to below-average levels the following year. A substantial increase in wage growth among executives, by contrast, is evident throughout the observation period; the pattern is similar for the group comprising other highly qualified workers. For the remaining skilled workers, however, the situation is somewhat different: here, real wages only picked up a strong momentum in 2014.

What explains the recent positive development in the gross hourly wages among low-wage workers? First, it is necessary to point out that there are close connections between wages and employee qualifications as well as wages and job requirements. At the same time, workers are sometimes overqualified for their positions, and some demanding jobs pay very little. For both observation periods, the lower two deciles on the pay scale consist primarily of individuals with an apprenticeship or technical school certificate (Table 3). Quite a few of them ended up working low-skilled jobs—that is, jobs below their formal training level. A significant proportion of the low-wage workers have jobs that do require vocational training, however. On the other hand, a significant pro-

Figure 4

**Structure of dependent employees' according to the qualification requirements of the activities carried out by them**

Share of all dependent employees in percent



1 Of employed persons without apprenticeship certificates, etc.

Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

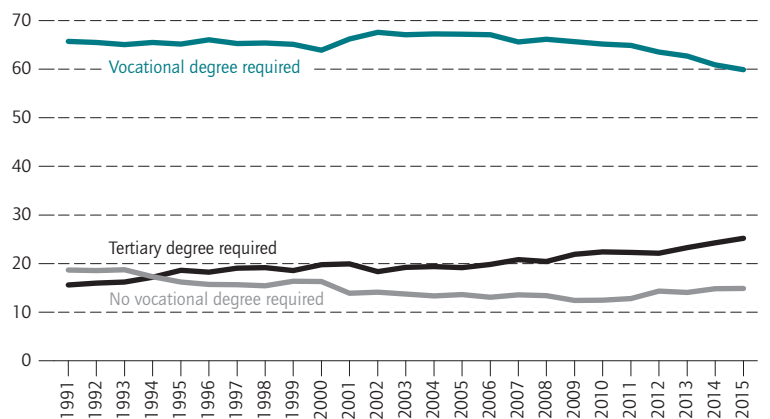
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Jobs for which a tertiary education degree is required are gaining in prevalence.

Figure 5

**Structure of dependent employees' according to their professional qualifications**

Share of all employees in percent



1 Of employed persons without apprenticeship certificates, etc.

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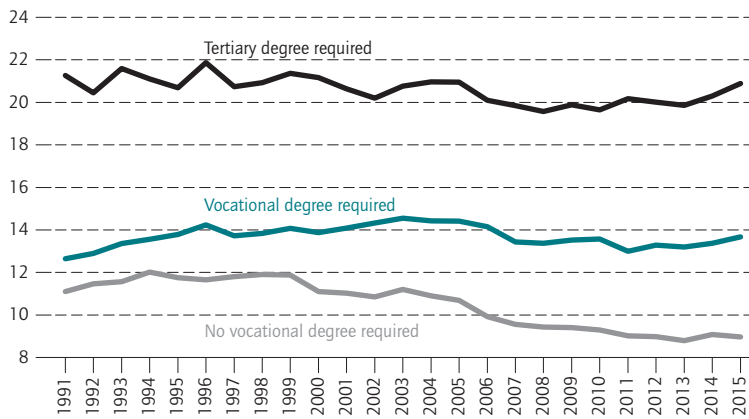
The proportion of employees with tertiary degrees is increasing.

12 See also Grabka and Goebel (2017), supra.

Figure 6

**Real gross hourly wages<sup>1</sup> according to qualifications for their job**

Median values in euros; in 2010 prices.



<sup>1</sup> Of employed persons without apprenticeship certificates, etc.

Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

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The average real hourly wages of employees with a vocational or tertiary degree have changed very little in the long term, while the real wages for employees with no vocational degree have declined.

portion of workers with low-skilled jobs receive middle wages instead of low wages (Figure 7).

Workers with wages in the lower deciles are often working in “marginal employment,” and are found relatively often in East Germany. Particularly striking is that low-paying jobs are often held by pensioners and registered unemployed persons as well as students (high school, university, etc.). Furthermore, there is a higher proportion of women than of men among these low-wage workers.

Between 2010 and 2015, the composition of low-wage workers changed in various respects: firstly, the share of individuals without vocational qualifications slightly increased (Table 3). The shares of working pensioners and students have also increased. As well, full-time workers have become less prevalent in the second decile. All of this would have led us to expect the earnings at the lower end of the wage scale to have been developing more poorly than they actually were. It is possible that various opposite effects came into play: for one, many low-wage jobs shifted to West Germany. In 2010, the share of East Germans among the low-wage workers stood at 33 percent, but by 2015 it had dropped to 24 percent. In the West, however, wage levels are higher than in the East.

Secondly, this development is also likely a result of changes linked to the collective bargaining policy. In the hospitality sector, for example—an industry with particularly low wages—collective-agreement wages increased between 2010 and 2015 (by 16.7 percent in

Tabelle 2

**Change of gross hourly wages according to skill groups<sup>1</sup>**

Annual average change in percent

	executives	highly qualified	professionals	trained workers	untrained workers	total
<b>In current prices</b>						
2007 to 2010	2.3	2.0	1.7	1.1	1.6	2.0
2010 to 2014	2.6	2.3	1.8	1.5	1.8	2.1
2014 to 2015	2.6	2.6	2.2	2.7	3.0	2.2
2015 to 2016	2.3	2.1	2.2	1.1	1.8	2.5
2007 to 2016	2.5	2.2	1.8	1.4	1.8	2.1
<b>In 2010 prices</b>						
2007 to 2010	1.0	0.7	0.4	-0.2	0.2	0.6
2010 to 2014	1.1	0.7	0.0	-0.2	-0.1	0.3
2014 to 2015	2.4	2.3	1.9	2.4	2.7	1.9
2015 to 2016	1.8	1.6	1.7	0.7	1.3	2.0
2007 to 2016	1.3	1.0	0.5	0.2	0.5	0.8

<sup>1</sup> Full-time and part-time employees; excludes workers with marginal employment, employees in the agriculture sector, and private households; largely excludes employees working for small businesses.

Sources: Federal Statistical Office; authors' own calculations.

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Wage growth among highly qualified workers is above average; among low-skilled workers, it is below average.

Table 3

**Dependent employees<sup>1</sup> by gross hourly wage decile and selected characteristics**

Shares in percent

	2010				2015			
	1st (lowest) decile	2nd decile	3rd to 10th decile	total	1st (lowest) decile	2nd decile	3rd to 10th decile	total
<b>Working hours</b>								
full-time	36	55	75	69	37	48	74	68
part-time	25	24	19	20	27	33	22	24
marginal employment	39	21	6	11	37	20	3	9
total	100	100	100	100	100	100	100	100
<b>Job qualification requirements</b>								
no vocational training	58	50	28	33	59	53	15	24
vocational degree	38	47	54	52	33	43	55	51
tertiary degree	4	3	18	15	8	4	30	25
total	100	100	100	100	100	100	100	100
<b>Employee training level</b>								
no vocational training	26	22	14	16	37	25	11	15
vocational degree	63	69	65	65	51	65	61	60
tertiary degree	11	9	21	19	12	11	29	25
total	100	100	100	100	100	100	100	100
<b>Location of work</b>								
West Germany	67	73	88	84	76	71	86	83
East Germany	33	27	12	16	24	29	14	17
total	100	100	100	100	100	100	100	100
<b>Social groups</b>								
registered unemployed	10	4	0	2	8	4	0	2
high school and university students	6	4	2	3	12	5	2	4
pensioners	7	3	2	3	10	7	2	3
dependent employees	77	89	96	93	70	84	96	92
total	100	100	100	100	100	100	100	100
<b>Gender</b>								
male	39	37	56	52	41	39	55	52
female	61	63	44	48	59	61	45	48
total	100	100	100	100	100	100	100	100

<sup>1</sup> Of employed persons without apprenticeship certificates, etc.

Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

Low-wage workers are largely composed of mini-jobbers, employees in East Germany, and low-skilled workers.

the East and 9.9 percent in the West).<sup>13</sup> Although not all employees are subject to a collective bargaining agreement, the tariff increases may have also had an influence on the wages of companies that were not bound by the agreement. That trade unions were increasingly successful in claiming and enforcing sectoral collec-

tive agreements with minimum wage clauses likely also had an impact.

**Many workers do not stay in low-paying jobs**

Up to now, we have been focusing on wage distribution and worker groups, the composition of which have not remained constant throughout the observation period. The following therefore examines the wage development of individual workers over time. This can be determined by looking at the income gains and losses over the obser-

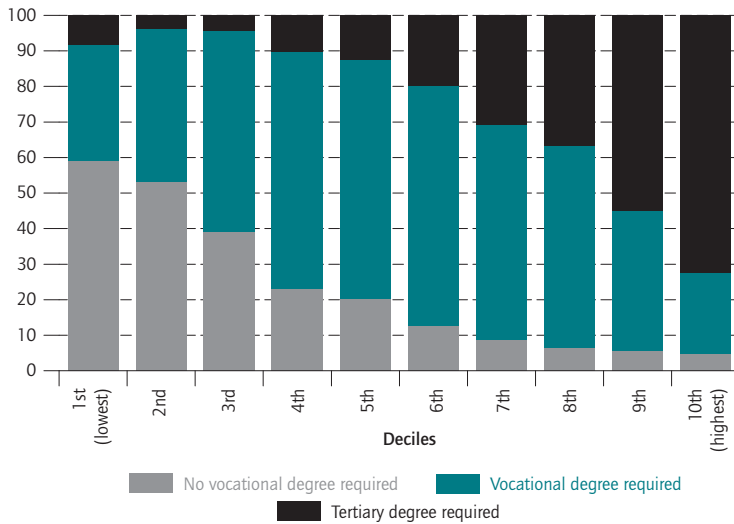
<sup>13</sup> See Federal Statistical Office, "Verdienste und Arbeitskosten. Index der Tarifverdienste und Arbeitszeiten," 4th Quarter 2016 (2017), Wiesbaden. Between 2010 and 2014—that is, before the implementation of the statutory minimum wage—the wages rose by 11.8 percent in the East and 6.5 percent in the West.



Figure 7

**Composition of employees<sup>1</sup> in each gross hourly wages decile of according to requirements for their job**

Share in percent



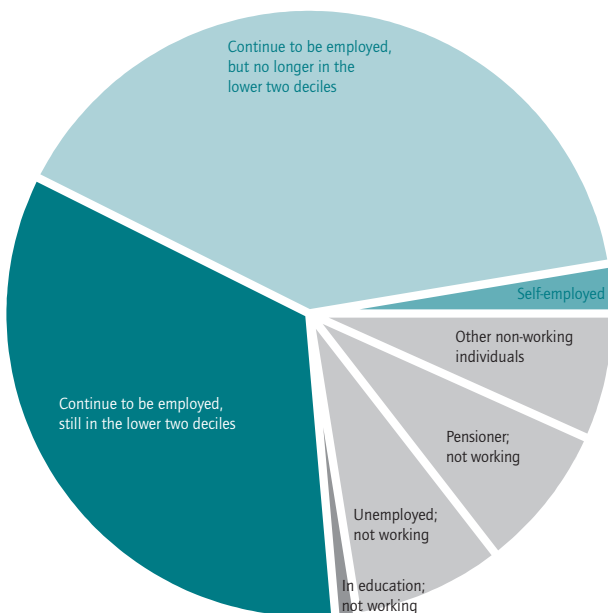
<sup>1</sup> Of employed persons without apprenticeship certificates, etc.  
Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

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Higher qualifications go hand in hand with higher wages.

Figure 8

**2015 occupational status of workers<sup>1</sup> whose gross hourly wages were in the lower two deciles in 2010**



<sup>1</sup> Of employed persons without apprenticeship certificates, etc.  
Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

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A large proportion of low-wage earners are able to increase their wages to the point where they are no longer in the bottom two deciles five years later.

vation periods according to what kinds of career changes the workers made and how their careers progressed. Of particular interest here is the development among low-wage workers.

Among the workers whose gross hourly wages placed them in the lower two deciles in 2010, three quarters were still employed five years later—almost always as dependent employees (Figure 8). At this point, the slight majority were earning wages that bumped them out of the bottom two deciles (according to the 2015 deciles), while just under half were still working in low-wage jobs. Among the low-wage workers from 2010, eight percent had retired after five years, eight percent were registered as unemployed, and another eight percent were not employed for other reasons, such as the decision to take part in a training course or attend school.

Many dependent employees who, in 2010, were in the bottom two deciles *and* held a full-time job were able to increase their salary over time (Figure 9). Among the workers in “marginal employment”, more than half were able to accomplish this—more than among the part-time employees (who are typically also subject to social insurance contributions). It must be noted, however, that a significant portion of the low-wage workers who held a part-time job, mini-job, or midi-job in 2010 were no longer in the labor market five years later.

If they remained in the labor market, the vast majority of students with jobs were able to increase their wages—which is unsurprising, given that the education they acquired likely allowed them to switch from temporary work to higher-paying jobs that matched their new qualifications. This is less the case for the registered unemployed as well as the pensioners, many of whom had already left the labor market anyway.

For low-wage earners, the changes in the amount of the gross wages over time are especially pronounced. On average, workers who earned less than 9.06 euros per hour in 2010 (the low-wage threshold at the time) were able to increase their salary by almost one quarter in real terms by 2015, provided they were still on the job market (Figure 10). Among this group, those who changed jobs over the five-year period experienced an even higher increase. Workers who earned wages slightly below the median in 2010 were also able to achieve pretty strong wage growth. In contrast, workers who were already earning comparatively high wages in 2010 experienced a rather weak wage growth. We can thus conclude that on average, a job change is a good move financially—just less so for workers who are already earning high salaries.

**Conclusion**

Based on the perception that the wage development is insufficient, the demand for “inclusive growth” has been introduced by several politicians. If we use the entire period from the mid-1990s onward as a reference, we observe that the lowest-paid 40 percent of workers were not participating in the economic development as they faced losses in real hourly wages. If we restrict the focus on the period from 2010 onward, we observe that these trends did not persist: not only have the gross hourly wages increased over the complete wage distribution in real terms since the beginning of the current decade, but the growth has also been more evenly distributed among the individual groups and wage deciles. This means that at the very least, the gap between the highest and lowest wages is no longer growing; but at the same time, it has yet to close.<sup>14</sup> Between the two is the middle-wage workforce, whose wage growth is lagging behind.

The finding of a recent, to some extent relatively more inclusive wage increase is all the more astonishing given the significant shifts in the structure of worker qualifications and the types of jobs on offer. The demand for training is growing as workers strive to meet the increasing requirements of the working world. This development should have actually resulted in an increase in wage differentials; why this was not the case cannot be adequately explained in the present investigation. Further research is needed here that more closely examines, above all, the employment trajectories in regional labor markets—perhaps according to economic sector, as well—since it has been shown that low-wage employment is generally not a dead end. Although many workers do remain in low-paying positions, a similar number is able to achieve higher wages after a certain period of time. More than anything else, a job change is what led to higher wages. It is also worth noting that only hourly wages were considered in the present study; the picture becomes more differentiated when the total working time is also taken into account, since—as shown—low hourly wage rates often go hand in hand with fewer working hours.

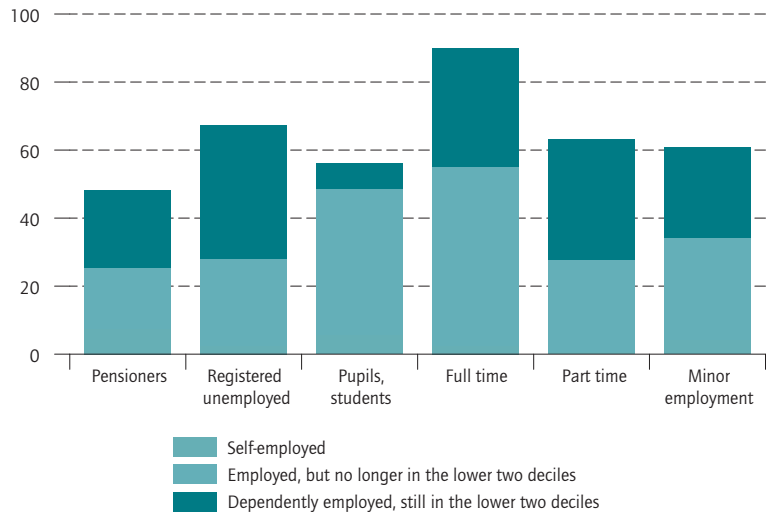
Even though hourly wages are now increasing more evenly across the overall wage distribution and real wage losses have not been a widespread issue since 2010, it must be noted that Germany’s wage increases are rather small. The rise over the past few years was also facilitated by the low inflation, which itself is the result of low oil prices. Now it appears that the question concern-

<sup>14</sup> Factoring in special payments in this instance could weaken this conclusion somewhat, but it will not fundamentally change it: according to official statistics, special payments account for less than one-tenth of the gross salary. See Federal Statistical Office, “Verdienste und Arbeitskosten, Arbeitnehmerverdienste,” Subject-matter series 16, row 2.3, various years.

Figure 9

**Dependent employees' whose gross hourly wages were in the lower two deciles in 2010, and their dependent employment in 2015 according to selected characteristics**

Share of all employees receiving gross hourly wages in the lower two deciles, in percent



<sup>1</sup> Of employed persons without apprenticeship certificates, etc.

Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

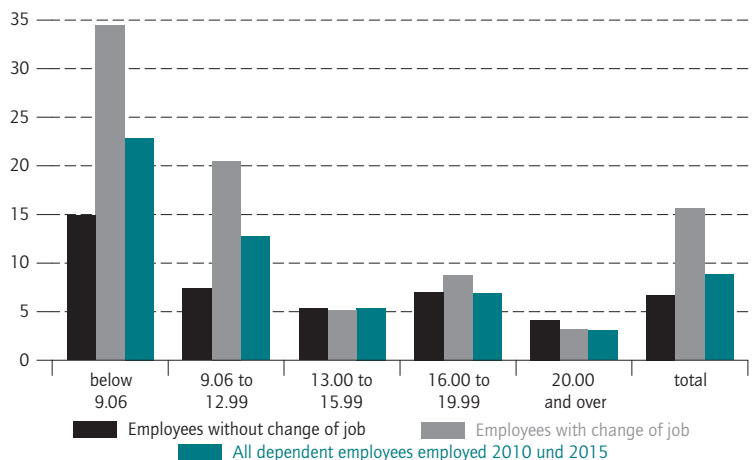
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Wage mobility is particularly high among full-time workers.

Figure 10

**Dependent employees' according to hourly wages in 2010 and the average change in real hourly wages by 2015**

In 2010 prices, median values.



<sup>1</sup> Of employed persons without apprenticeship certificates, etc.

Sources: The Socio-Economic Panel (V32.1); authors' own calculations.

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A job change – especially among low-wage earners in the lower deciles – leads to considerable wage increases.

ing a more uniform wage development among dependent employees is no longer the most pressing issue. It seems that the distribution of income growth between capital and labor should be brought more strongly into

the discussion. This is all the more urgent since the U.S. administration and the euro area partners are raising this topic with increasing emphasis, with reference to Germany's high export trade surpluses.

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JEL: J21, J31, D30

Keywords: Wage increases, Real Wages, SOEP



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#### Layout and Composition

eScriptum GmbH & Co KG, Berlin

#### Sale and distribution

DIW Berlin  
ISSN 2192-7219

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