

AT A GLANCE

The low-wage sector in Germany is larger than previously assumed

By Markus M. Grabka and Carsten Schröder

- In Germany, the share of employees with low wages rose strongly between 1995 and 2008, since then it has been stable at around one quarter
- The absolute number of low-wage employment contracts including secondary employment amounts to nine million
- The introduction of the minimal wage has boosted gross hourly wages in the lowest decile but the share of low-wage employees has not decreased
- Wage mobility in the low-wage sector is poor and has not grown
- Better qualification and more offensive wage policy could contribute to curtail the low-wage sector

The share of employees receiving low wages rose until 2008, since then it has been stable at around one quarter.

Share of dependent employees receiving low wages, in percent



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FROM THE AUTHORS

“The idea that working for low wages would be a transition and even a springboard into better jobs has proven to be an illusion for most. The low-wage sector is a trap and policies aimed at reigning it in should be put into place.”

— Markus M. Grabka, author —

DATA

Since 2017, SOEP data have been providing sufficient information on secondary employment to calculate the share of low wages of all employment contracts.

The low-wage sector in Germany is larger than previously assumed

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ABSTRACT

The total number of dependent employees in Germany has increased by more than four million since the financial crisis. Part of this growth took place in the low-wage sector. Analyses based on data from the Socio-Economic Panel, which in 2017 for the first time include detailed information on secondary employment, show that there were around nine million low-wage employment contracts in Germany that year, around one quarter of all contracts. Women, young adults and employees in Eastern Germany are particularly likely to receive low wages. The legal minimum wage introduced in 2015 is below the low-wage threshold, and thus did not decrease the proportion of low-wage employees, although wages at the bottom-end of the distribution did markedly increase. Wage mobility has hardly changed since the mid-1990s: almost two thirds of employees in the lowest wage category were still there three years later. In order to curtail the low-wage sector, a better and broader qualification of workers, as well as a more proactive wage policy are called for. A reform of the mini-job rules would also be helpful.

The present study updates previous studies by the German Institute for Economic Research (DIW Berlin) on the growth of real contractual gross hourly wages from 1995 up to and including 2017 with the most up-to-date wage information available (see Box).¹ The authors placed a special focus on the trend in the low-wage sector, a topic that has generated much debate in Germany. Low wages are defined as gross hourly wages that are less than two-thirds of the median wage² of all employees. The empirical analysis is based on Socio-Economic Panel (SOEP) data collected by DIW Berlin in partnership with Kantar Public.³

The present study examines the wages of dependent employees and does not consider self-employed persons, apprentices and trainees, interns, or people in military or civil service programs. Unless otherwise described, only dependent employees at their main employment are considered when examining gross hourly wage growth. However, as additional employment characteristics were surveyed in the SOEP in 2017, wages from secondary dependent employment could be considered here for the first time.

Significant rise in real contractual hourly wages since 2013

The average real⁴ contractual gross hourly wage showed weak growth over the study period between 1995 and 2017. From just under 16.50 euros in 1995, it rose to 17 euros in 2003. By 2013, it had dropped to around 15.80 euros (see Figure 1), and thereafter rose to around 16.90 euros in 2017.⁵ The latter rise equals a significant increase of over seven percent

¹ See most recently: Markus M. Grabka and Carsten Schröder, "Inequality in Germany: decrease in gap for gross hourly wages since 2014, but monthly and annual wages remain on plateau." *DIW Weekly report* no. 9 (2018): 83-92 (available online, accessed on February 13, 2019. This applies to all other online sources in this report unless stated otherwise.)

² The median is the value that divides the distribution of wages into two halves. One half has wages that are lower than the median wage and the other half's wages are higher.

³ SOEP is a recurring annual representative survey of private households. It began in West Germany in 1984 and expanded its scope to include the new federal states in 1990. See Jan Goebel et al., "The German Socio-Economic Panel (SOEP)," *Journal of Economics and Statistics*, ahead of print (available online).

⁴ In 2010 prices, calculated using the consumer price index of the German Federal Statistical Office.

⁵ In nominal terms, the contractual gross hourly wage was just below 18.50 euros in 2017.

Box

Definitions, methodology, and assumptions regarding income measurement

The present study is based on the concept of a "contractual gross hourly wage." In turn, this is based on information regarding gross monthly earnings from main employment from the previous month without special payments but including overtime pay if applicable, divided by the contractual weekly working hours and then multiplied by a factor of 4.33. If no working time has been agreed or if the answer to that question is not provided, the actual work time will be used.

Alternatively, in the SOEP there is an option to calculate hourly wages based on the number of hours worked. The survey questions ask on average how many hours were worked. Given that an increasing number of employees can take advantage of flextime or working hour accounts, the actual hours worked recorded in the SOEP may deviate significantly from respondents' contractual working hours. When employees have been out of work for (longer) periods of time due to illness, continuing education courses, etc., this is also considered a deviation. Unpaid overtime also results in differences between actual and contractual working hours. Therefore, the concept of contractual working hours used here should be considered a lower limit for the proportion of the low-wage sector.

In the 2017 SOEP survey wave, the data collection process for secondary employment was improved. It permitted differentiation among voluntary secondary employment, self-employment, or dependent employment. And for those three different types of secondary employment, respondents were asked to indicate the number of hours worked per week and the amount of gross income they earned from their secondary employment. Since employees can work at several different jobs, the analyses of the low-wage sector are no longer limited to employees as of 2017. Instead, it will also be presented by job.

Properly dealing with missing information is a challenge faced by all surveys of the general population, in particular regarding sensitive issues such as income. In the SOEP data analyzed here, missing information is replaced using elaborate cross-sectional and longitudinal-based data imputation procedures.¹ The process includes newly imputing all missing values in retrospect after each new data collection period, since new information from surveys can be used to replace the data missing from prior years. This can lead to changes in earlier analyses. But as a rule, the changes are minor.

Studies show that multiple adjustments in survey behavior occur during the first two survey waves, and they are not due to varying willingness to participate.² To avoid such an effect in the time series for wages, the first survey wave of each SOEP sample was excluded from the calculations.³

Upon consideration of extrapolation and weighting factors, the underlying SOEP micro data (version v34 based on the 34th survey wave in 2017) for these analyses present a representative picture of the dependent employees in private households. They therefore permit conclusions to be drawn about the overall population.

¹ Joachim R. Frick and Markus M. Grabka, "Item non-response on income questions in panel surveys: incidence, imputation and the impact on inequality and mobility," *Allgemeines Statistisches Archiv*, 89(1) (2005): 49–61.
² Joachim R. Frick et al., "Using analysis of Gini (ANOI) for detecting whether two subsamples represent the same universe," *The German Socio-Economic Panel Study (SOEP) Experience, Sociological Methods Research*, May 2006 vol. 34 no. 4 (2006): 427–468.
³ In 2016 for example, this was the case for the two new refugee samples, M3 and M4. In 2017, new refugee sample M5 and new partial random sample N were excluded.

in comparison to 2013.⁶ The curve for the median is very similar. However, the median wage grew more weakly than the average value and was around 15 euros (nominal value 16.30 euros) in 2017.

Growth in real contractual gross hourly wages varied across wage segments. Grouping dependent employees by level of contractual gross hourly wage and dividing the population into ten groups of equal size yields deciles. Using 1995 as the base year for the average wage per decile (=100), all deciles showed a significant drop in real wages during the 1990s – particularly until 2006 (see Figure 2). This was linked to downswings in real wages in the lowest decile that were

partly the result of labor-market regulations leading to more flexible rules in the low-wage segment. As of 2013, all deciles experienced positive real wage growth.⁷ Implementing the general minimum wage in 2015 (8.50 euros per hour) triggered an above-average increase in hourly wages in the first decile between 2014 and 2016.⁸ The first increase in the minimum wage to 8.84 euros per hour in 2017, however, was not reflected in a further increase in wages in the lowest decile. Furthermore, reported earnings and working hours indicate that a portion of eligible employees were paid below the minimum-wage threshold after 2014 (cases of non-compliance).⁹

⁷ Alternatively, using the number of hours worked shows that the rise in real wages began in 2010. See Karl Brenke and Alexander Kritikos, "Hourly wages in lower deciles no longer lagging behind when it comes to wage growth," *DIW Wochenbericht* no. 21 (2017): 205–214 (available online).

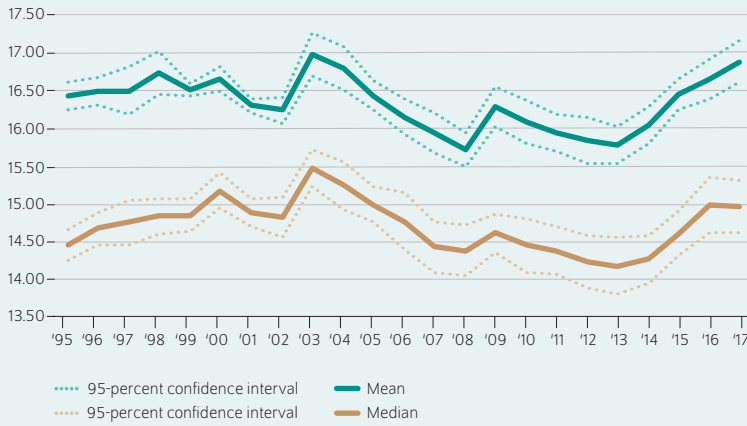
⁸ See Patrick Burael et al., "Mindestlohn noch längst nicht für alle – Zur Entlohnung anspruchsberechtigter Erwerbstätiger vor und nach der Mindestlohnreform aus der Perspektive Beschäftigter," *DIW Wochenbericht* no. 49 (2017): 1109–1123 (in German only; available online, accessed on February 12, 2018).

⁹ See Burael et al., "Mindestlohn noch längst nicht für alle."

⁶ Overall, wage growth was weaker in the SOEP than in the *Vierteljährliche Verdiensterhebung (VV)*, the quarterly earnings survey of the German Statistical Office. Gross monthly wages without special payments for full-time employees from 1995 to 2003 rose at virtually the same level in both data sets. From 2004 to 2008, wage growth in the SOEP was below that of the VV. Since 2008, wage growth in both data sources has only differed slightly. See German Statistical Office, *Durchschnittliche Bruttomonatsverdienste, 2019* (in German; available online).

Figure 1

Real contractual gross hourly wage in the main employment
In euros



Remarks: 1% bottom and top-coding, excluding hourly wages of zero. In 2010 prices.

Source: SOEP v34 (dependent employees, living in private households, excluding trainees, interns, apprentices and self-employed persons), authors' own calculations.

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The average contractual hourly wage in Germany has only slightly gone up since 1995.

The higher wage deciles, on the other hand, reported positive growth in real wages in 2017 as well.¹⁰

Inequality in contractual hourly wages declined as of 2014

The distribution of contractual gross hourly wages can be described using a range of measures. The 90:10 percentile ratio is presented here. It is the ratio of the wages of the person in the top (tenth) decile with the lowest earnings to the person with the highest earnings from the lowest (first) decile. In the mid-1990s, the 90:10 percentile ratio of the contractual gross hourly wage was around 3.3.¹¹ It had risen to 3.9 by 2005 but decreased significantly to approximately 3.5 between 2014 and 2016 (see Figure 3). The implementation of the legal minimum wage certainly played a key role here.¹² The downswing came to a halt in 2017, since the upper half of the wage distribution benefited from the real wage increase between 2016 and 2017 of around 1.5 to three percent, while wage growth in the lowest decile was slightly negative between 2016 and 2017.¹³

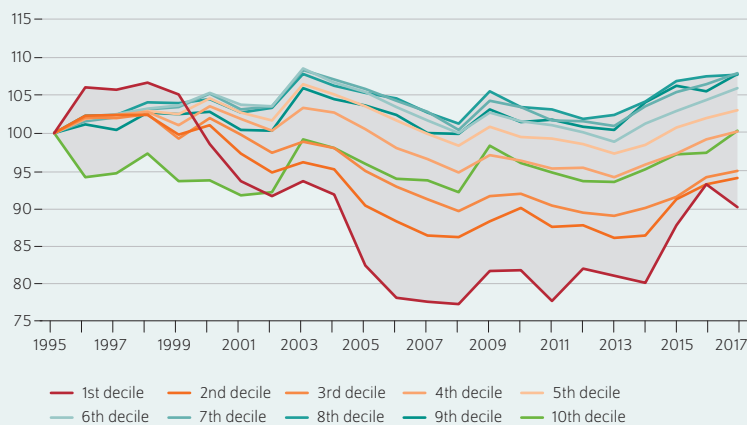
Strong expansion of low-wage sector until 2008

In European comparison, Germany has one of the largest low-wage segments.¹⁴ In the country, it is the subject of intense debate. On the one hand, people argue that the low-wage sector helps to provide employment to more unemployed persons. On the other hand, a frequently voiced complaint is that many employees in the low-wage sector do not generate adequate earned income, depend on wage-replacement benefits (*Lohnersatzleistungen*), and have a high risk of poverty in old age.

In the mid-1990s, the proportion of employed persons with low wages was around 16 percent (see Figure 4). Since 1997 this wage segment has expanded considerably and since 2008, the proportion has been constant at just below 24 percent. Since Germany recorded general employment growth at the same time, the constant proportion also means that 7.9 million dependent employees earned a wage that was below the low-wage threshold in 2017 – a total of 2.9 million employees (46 percent) more than in 1995.¹⁵

Figure 2

Standardized contractual gross hourly wage per decile in the main employment
In euros, 1995 = 100



Remarks: 1% bottom and top-coding, excluding hourly wages of zero. In 2010 prices.

Source: SOEP v34 (dependent employees, living in private households, excluding trainees, interns, apprentices and self-employed persons), authors' own calculations.

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In the three lowest deciles, the real gross hourly wage fell compared to 1995.

¹⁰ A further explanation of why wages in the lowest wage decile did not continue to rise could be found in the methodology. For example, the data from 2017 include people with a refugee background to map the movement of migration to Germany.

¹¹ In other words, the gross hourly wage of the person at the lower limit of the tenth decile was 3.3 times higher than that of the person at the upper limit of the first decile.

¹² See Minimum Wage Commission, *Zweiter Bericht zu den Auswirkungen des gesetzlichen Mindestlohns* (2018) (available online); and Marco Caliendo et al., "The Short-Term Distributional Effects of the German Minimum Wage Reform," *SOEPpapers on Multidisciplinary Panel Data Research* 948 (2017) (available online).

¹³ Despite the implementation of the minimum wage, inequality of monthly wages has plateaued at its historically high 2011 level. See Grabka and Schröder, "Ungleichheit in Deutschland."

¹⁴ See eurostat, "1 of 6 employees in the European Union is a low-wage earner," press release no. 246 (2016) (available online).

¹⁵ The low-wage threshold for main employment in nominal terms was 10.90 euros in 2017.

Particularly high proportion of low-wage employees in secondary employment

As explained above, the previously derived values from SOEP are based on responses by employees regarding main employment.¹⁶ Consequently, wages from secondary employment are not considered. Since the database of the SOEP was improved with regard to recording more detailed information on secondary employment in 2017, it is now possible to differentiate secondary employment among volunteer work, self-employment, and dependent employment. As a result, it is now possible to analyze the wage distribution of dependent employees in secondary employment.

In the following section, alongside wages from main employment, the wages of dependent employees in secondary employment are factored in when determining the proportion of employees in the low-wage sector. Since an employee can have several jobs, the section no longer contains an analysis of employees. Instead, it looks at job contracts.

When secondary employment was included in the calculation, the low-wage threshold was around 10.80 euros in 2017. The proportion of jobs with wages below the threshold was 24.5 percent – or nine million jobs – that same year.¹⁷ Wages below the minimum wage threshold were paid to over 60 percent of dependent secondary employees. Most of the cases involved so-called mini-jobs, which pay at most 450 euros per month. Indeed, the wages of around three quarters of mini-jobs were below the minimum-wage threshold in 2017.

Differentiating by socio-economic characteristics showed that women, young adults, employees without professional qualifications, and employees without experience disproportionately often work in jobs that pay low wages (see Table 1). This applies to both main and secondary employment.

For other socio-economic characteristics, the picture for secondary and main employment is more ambiguous. While persons with migration backgrounds are paid low wages for their main employment more frequently than native Germans (around 30 percent vs. 20 percent), the relevant proportions for secondary employment are equal at around 60 percent.

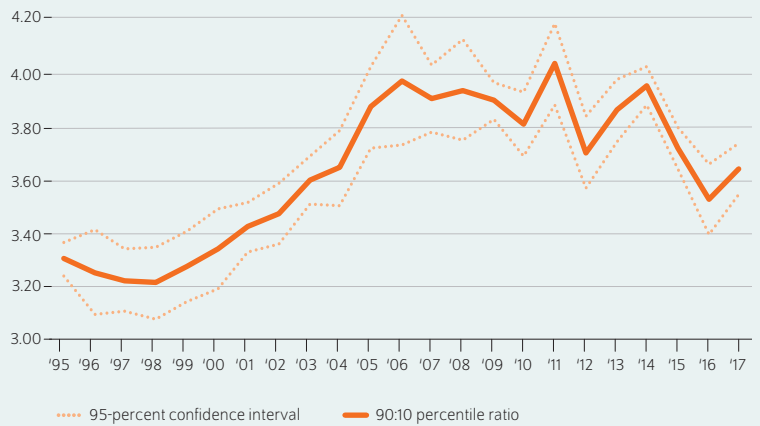
The proportion of employees in low-wage jobs is generally assumed to drop as the net income of the household they live

¹⁶ For example, see Thorsten Kalina and Claudia Weinkopf, "Niedriglohnbeschäftigung 2016 – beachtliche Lohnzuwächse im unteren Lohnsegment, aber weiterhin hoher Anteil von Beschäftigten mit Niedriglöhnen," *IAQ Report 2018-06*, (in German; available online), or Brenke and Kritikos, "Hourly wages in lower deciles."

¹⁷ The proportion of jobs below the low-wage threshold based on information from the SOEP was somewhat higher than the proportion yielded by the German Statistical Office's Pay Structure Survey (*Verdienststrukturerhebung*, VSE) statistics. According to the VSE, the proportion was around 21 percent in 2014. See German Federal Statistical Office, *Verdienste auf einen Blick (2017)* (in German; available online). Part of the explanation for this is that the VSE does not include the private household sector and mini-jobs are inadequately captured. In both areas, employers pay low wages disproportionately often. Using the number of hours worked as an alternative, the proportion of jobs below the low-wage threshold is 22.7 percent. The Institute for Employment Research (IAB) of the Federal Employment Agency is unable to report information on the low-wage sector with the register data available to it, because information on the number of hours worked only exists in qualitative form.

Figure 3

**Wage inequality in the main employment
90 to 10 percentile ratio**



Remarks: 1% bottom and top-coding, excluding hourly wages of zero. In 2010 prices.

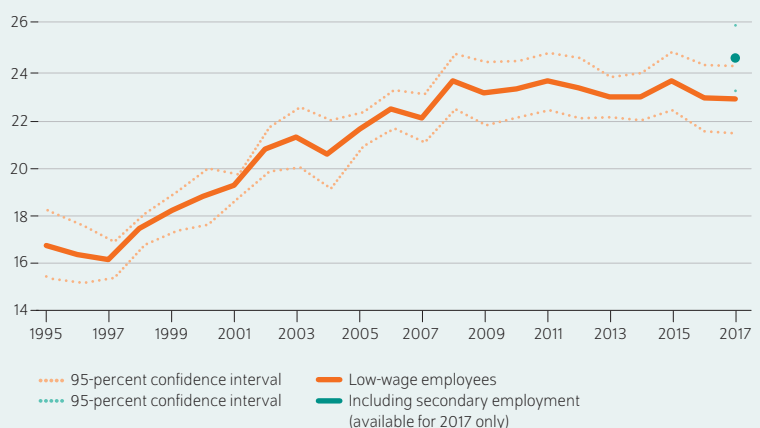
Source: SOEP v34 (dependent employees, living in private households, excluding trainees, interns, apprentices and self-employed persons), authors' own calculations.

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Wage inequality decreased between 2014 and 2016 after the introduction of the legal minimal wage, but the trend hasn't gone on since.

Figure 4

**Share of dependent employees who receive low wages
In percent**



Remarks: 1% bottom and top-coding, excluding hourly wages of zero. In 2010 prices.

Source: SOEP v34 (dependent employees, living in private households, excluding trainees, interns, apprentices and self-employed persons), authors' own calculations.

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Since 2008 the share of low-wage employees has been stable at around a quarter of all dependent employees.

LOW-WAGE SECTOR

Table 1

Characteristics of low-wage employees

Share of dependent job contracts, in percent, for the year 2017

| | Main employment | Secondary employment | Total | All dependent employment |
|--|----------------------|----------------------|----------------------|--------------------------|
| | < low-wage threshold | < low-wage threshold | < low-wage threshold | |
| Total | 22.5 | 60.8 | 24.5 | 100.0 |
| Sex | | | | |
| Men | 17.4 | 57.1 | 19.3 | 51.3 |
| Women | 27.9 | 63.9 | 30.0 | 48.8 |
| Age | | | | |
| <25 | 53.9 | 71.6 | 56.3 | 5.5 |
| 25-34 | 26.7 | 65.5 | 28.4 | 21.0 |
| 35-44 | 16.7 | 39.2 | 17.5 | 21.6 |
| 45-54 | 16.3 | 64.3 | 18.8 | 28.1 |
| 55-64 | 20.2 | 58.9 | 21.9 | 20.6 |
| 65 and over | 56.4 | 61.4 | 56.9 | 3.2 |
| Migration background | | | | |
| None | 20.2 | 60.1 | 22.3 | 76.2 |
| Direct | 30.3 | 64.6 | 32.0 | 17.1 |
| Indirect | 28.4 | 59.0 | 30.0 | 6.7 |
| Region | | | | |
| Western Germany | 20.0 | 60.7 | 22.3 | 81.5 |
| Eastern Germany | 33.3 | 61.2 | 34.2 | 18.5 |
| Experience in full-time employment (in years) ¹ | | | | |
| None | 58.7 | 78.1 | 60.7 | 6.7 |
| 0-<5 | 32.5 | 61.4 | 34.0 | 17.8 |
| 5- <15 | 20.4 | 56.8 | 22.3 | 29.1 |
| 15-<35 | 13.4 | 56.3 | 15.0 | 35.4 |
| 35 and more | 19.3 | 62.2 | 21.8 | 9.8 |
| Education | | | | |
| No professional qualification | 48.4 | 68.9 | 50.2 | 15.1 |
| Apprenticeship | 21.8 | 64.6 | 24.2 | 59.4 |
| University | 9.1 | 28.5 | 9.6 | 25.5 |
| Household type | | | | |
| One-person household | 24.4 | 63.3 | 27.0 | 21.9 |
| Couple, no children | 19.7 | 55.6 | 21.4 | 30.4 |
| Single parent | 36.5 | 77.7 | 39.8 | 6.2 |
| Couple with children < 16 | 15.4 | 47.9 | 16.5 | 20.1 |
| Couple with children >= 16 | 27.0 | 63.6 | 28.9 | 19.4 |
| Other | 30.8 | 79.6 | 32.8 | 2.0 |
| Household net income (in euros) | | | | |
| <1000 | 79.5 | 72.8 | 78.8 | 2.9 |
| 1000-<2000 | 41.6 | 70.0 | 43.4 | 16.6 |
| 2000-<3000 | 27.6 | 64.6 | 29.6 | 25.7 |
| 3000-<4000 | 15.8 | 47.1 | 17.4 | 24.1 |
| 4000-<5000 | 9.1 | 67.6 | 11.9 | 16.0 |
| 5000 and more | 7.7 | 45.0 | 8.9 | 14.8 |

¹ missing values add up to 100 percent.

Remarks: 1% bottom and top-coding, excluding hourly wages of zero. Data encompasses main and secondary employment contracts.

Source: SOEP v34 (dependent employees, living in private households, excluding trainees, apprentices and self-employed persons), authors' own calculations.

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in rises. An examination of main employment shows that the proportion of low-wage jobs in households with a monthly net household income below 1,000 euros is around 80 percent. It falls to around eight percent in the highest income group (5,000 euros and more). The overall proportions are higher for secondary employment, and the income curve is flatter. The proportion of around 73 percent in the lowest segment becomes 45 percent in the highest net household income segment. Low-wage jobs are therefore not a

phenomenon limited to the lower income segments – particularly when it comes to secondary employment.

There are also marked regional differences in the incidence of low-wage jobs. In eastern Germany, at 34 percent the proportion of low-wage jobs is, as expected, significantly higher than western Germany's 22 percent. This distinct difference is only apparent in main employment; the two regions are virtually the same with regard to secondary employment.

LOW-WAGE SECTOR

Table 2

Wage mobility in main employment

In four-year periods

| | < 66.6% | 66.6% - 90% | 90% - 110% | 110% - 150% | 150% - 200% | 200% and over | Total | Remained in dependent employment | Gave up dependent employment | Total |
|---------------|-------------|-------------|------------|-------------|-------------|---------------|-------|----------------------------------|------------------------------|-------|
| 1995 | 1998 | | | | | | | | | |
| < 66.6% | 62 | 22 | 10 | 3 | 1 | 1 | 100 | 68 | 32 | 100 |
| 66.6% - 90% | 14 | 54 | 24 | 5 | 1 | 1 | 100 | 77 | 23 | 100 |
| 90% - 110% | 4 | 17 | 51 | 26 | 1 | 1 | 100 | 81 | 19 | 100 |
| 110% - 150% | 2 | 3 | 15 | 65 | 13 | 2 | 100 | 87 | 13 | 100 |
| 150% - 200% | 1 | 2 | 5 | 18 | 59 | 15 | 100 | 85 | 15 | 100 |
| 200% and over | 3 | 3 | 3 | 5 | 21 | 63 | 100 | 86 | 14 | 100 |
| Total | 13 | 20 | 22 | 25 | 12 | 8 | 100 | 80 | 20 | 100 |
| 2000 | 2003 | | | | | | | | | |
| < 66.6% | 58 | 24 | 9 | 6 | 2 | 0 | 100 | 71 | 29 | 100 |
| 66.6% - 90% | 15 | 50 | 22 | 11 | 2 | 1 | 100 | 79 | 21 | 100 |
| 90% - 110% | 4 | 15 | 42 | 32 | 6 | 1 | 100 | 82 | 18 | 100 |
| 110% - 150% | 1 | 4 | 13 | 59 | 19 | 4 | 100 | 86 | 14 | 100 |
| 150% - 200% | 0 | 1 | 2 | 17 | 61 | 20 | 100 | 86 | 14 | 100 |
| 200% and over | 1 | 2 | 1 | 5 | 20 | 70 | 100 | 82 | 18 | 100 |
| Total | 14 | 19 | 18 | 26 | 14 | 8 | 100 | 80 | 20 | 100 |
| 2005 | 2008 | | | | | | | | | |
| < 66.6% | 70 | 19 | 5 | 4 | 1 | 1 | 100 | 75 | 25 | 100 |
| 66.6% - 90% | 21 | 45 | 25 | 8 | 1 | 1 | 100 | 85 | 15 | 100 |
| 90% - 110% | 4 | 16 | 51 | 24 | 4 | 1 | 100 | 88 | 12 | 100 |
| 110% - 150% | 2 | 5 | 13 | 61 | 17 | 2 | 100 | 90 | 10 | 100 |
| 150% - 200% | 2 | 2 | 7 | 22 | 50 | 17 | 100 | 90 | 10 | 100 |
| 200% and over | 3 | 0 | 2 | 8 | 20 | 66 | 100 | 83 | 17 | 100 |
| Total | 18 | 17 | 19 | 25 | 13 | 8 | 100 | 85 | 15 | 100 |
| 2010 | 2013 | | | | | | | | | |
| < 66.6% | 66 | 21 | 7 | 4 | 2 | 0 | 100 | 76 | 24 | 100 |
| 66.6% - 90% | 15 | 44 | 31 | 8 | 2 | 0 | 100 | 80 | 20 | 100 |
| 90% - 110% | 2 | 13 | 48 | 33 | 2 | 1 | 100 | 89 | 11 | 100 |
| 110% - 150% | 1 | 3 | 12 | 63 | 20 | 2 | 100 | 91 | 9 | 100 |
| 150% - 200% | 2 | 1 | 1 | 21 | 51 | 24 | 100 | 93 | 7 | 100 |
| 200% and over | 3 | 1 | 1 | 4 | 12 | 79 | 100 | 82 | 18 | 100 |
| Total | 16 | 15 | 18 | 26 | 14 | 10 | 100 | 85 | 15 | 100 |
| 2014 | 2017 | | | | | | | | | |
| < 66.6% | 62 | 23 | 7 | 7 | 1 | 0 | 100 | 78 | 22 | 100 |
| 66.6% - 90% | 18 | 53 | 20 | 7 | 1 | 1 | 100 | 87 | 13 | 100 |
| 90% - 110% | 3 | 20 | 45 | 28 | 3 | 0 | 100 | 88 | 12 | 100 |
| 110% - 150% | 2 | 4 | 12 | 63 | 15 | 3 | 100 | 88 | 12 | 100 |
| 150% - 200% | 1 | 1 | 3 | 22 | 56 | 17 | 100 | 89 | 11 | 100 |
| 200% and over | 2 | 1 | 1 | 4 | 19 | 74 | 100 | 89 | 11 | 100 |
| Total | 18 | 19 | 16 | 24 | 13 | 10 | 100 | 86 | 14 | 100 |

Remarks: 1% bottom and top-coding, excluding hourly wages of zero. Main employment only.

Reading help: the top left figure (62 percent) describes the share of employees who were in the lowest wage segment in 1995 and had remained there three years onwards; the seventh figure in the first column (13 percent) means that of all dependent employees in 1995, 13 percent found themselves in the lowest wage segment in 1998.

Source: SOEP v34 (dependent employees, living in private households, excluding trainees, apprentices and self-employed persons), authors' own calculations.

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Wage mobility has hardly changed at all over time

Expanding the low-wage sector was also intended to provide unemployed persons with a springboard to employment – employment that would lead to higher future wages as those employees acquired work experience. The following section examines the extent to which this hope is reflected in reality. Since information about wages from secondary employment

is only available as of 2017, only wages from main employment will be analyzed here.

The mobility of contractual hourly wages was determined across six wage segments and four-year periods beginning in 1995 (see Table 2).¹⁸ The first wage segment describes the

¹⁸ In the process, only the status at the respective beginning and end of the relevant study horizon was included. This study did not take wage mobility in the interim years into account.

low-wage area (below 66.6 percent of the median), the segment right above it is the low-earner segment (66.6 percent to 90 percent of the median), and the next segment contains the average earners (90 to 110 percent). The high earners were divided into three groups: 110 to 150 percent, 150 to 200 percent, and over 200 percent of the median wage.

Overall, across all five periods over half of those employed who remained dependent employees three years later occupied the same wage segment. However, the upswing in the labor market also led the probability of moving from dependent employment into self-employment or unemployment (including retirement or apprenticeship) to diminish. While one fifth of dependent employees were no longer dependently employed three years later between 1995 and 1998, the proportion decreased to 14 percent in the 2014-2017 period.

At the upper end of the wage distribution (200 percent and more of the median), mobility has fallen over time. While 63 percent remained in this wage segment in the middle of the 1990s, in the 2014-2017 period the proportion increased significantly – to 74 percent.

At the lower end of the wage distribution, mobility was virtually the same between 2014 and 2017 as it was in the middle of the 1990s. Employees primarily move upward into the wage segment directly above the one in which they started. Upward mobility is the exception in the upper half of the wage distribution. In the medium term, somewhat more than one third of low-wage employees successfully moved upward into a (somewhat) better-paid dependent job. Upward mobility in the upper wage segments primarily affects persons who had lower-paying jobs in the course of their apprenticeship/education and after entering the profession they learned, received significantly higher wages. Over 60 percent of all low-wage employees remained in their low-paid jobs.

The number of persons leaving dependent employment in the low-wage area in particular has fallen over time. In the middle of the 1990s, 32 percent of employees in the low-wage segment had left dependent employment three years later while only 22 percent did in the 2014-2017 period.

Conclusion: mini-job reform and more proactive wage policy could contain the low-wage sector

For the past ten years, employment in Germany has been on a sharp upswing. This is not primarily due to expanding the low-wage sector, however. Its proportion has plateaued at around one quarter for ten years.

The present analysis also showed that the number of jobs with low wages was over nine million in 2017. Implementing the general minimum wage in 2015 did not lower the number of low-wage employees. However, in real terms their contractual hourly wage rose – at least in 2015 and 2016.

In some cases, employment in the low-wage sector can be a stepping stone to a job with higher pay. But the majority of low earners continue to work for low wages over time.

If the employment situation of low-wage earners is to be improved, reforming the marginal employment (mini-job) system would be one measure to consider. Policy makers presently have this issue on their agenda. Last year, the FDP Bundestag parliamentary group presented a “Draft law for making the income limit of mini-jobs dynamic.”¹⁹ Such a reform would however result in the permanent establishment of a sizeable low-wage sector. In European comparison, Germany already has one of the largest low-wage sectors. If the income limits of mini-jobs were instead lowered, the number of mini-jobs and other poorly paid jobs would be reduced: lowering the income limit could lead to a transformation of mini-jobs into part- or full-time jobs with mandatory contributions to the social insurance system. This would be a welcome change, since, in addition to improved payment, employees would be likely to acquire rights to social insurance and could expect improvements in vacation entitlement or paid sick leave.²⁰ Given the strong demand for employment, the risk of job cuts is currently very low. And experience gained during the implementation of the minimum wage shows that the sectors particularly affected by the minimum wage were able to pass all or part of the increased labor costs onto their prices, and the employment effects have tended to be minor.²¹ However such a policy would also entail a risk that automation could replace the affected jobs, for example.

Other instruments for containing the low-wage sector would be the broader qualification of employees and, above all, more proactive wage policies. In particular, policy makers should try to conclude collective tariff bargaining agreements in non-tariff areas. In the low-wage sector in particular, the incentives to pay in line with a collective wage agreement are extremely low.²²

¹⁹ See Bundestagsdrucksache, 19/4764 (2018) (in German; available online).

²⁰ See Jens Stegmaier et al., “Bezahlter Urlaub und Lohnfortzahlung im Krankheitsfall. In der Praxis besteht Nachholbedarf bei Minijobbern,” *IAB Kurzbericht*, no. 18 (2015) available online.

²¹ See Minimum Wage Commission, “Zweiter Bericht zu den Auswirkungen.”

²² See Jürgen Glaubitz, “Verdrängungswettbewerb im deutschen Einzelhandel: auf dem Rücken der Beschäftigten,” *WSI-Mitteilungen* Heft 2 (2018) 150-154.

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