The untold story of Midijobs

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Midijobs are employment relationships with moderate monthly earnings that benefit from payroll tax subsidies. Since 2003, the subsidy is universally available for all regions, industries, individuals, and employers in Germany. Recently, more than 2.9 million individuals, i.e., almost 9 percent of the German labor force covered by the social security system took advantage of Midijobs. This paper describes the program, its motivation, and utilization over time. We characterize the labor market transitions leading into and out of Midijob employment, the duration of Midijob utilization, and compare recent developments with patterns of program utilization that were observed early on.

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1. Introduction

The early 2000s yielded far-reaching reforms of German labor market policies (Hartz reforms). Besides the welfare reform which received much public attention and is debated to this day there were important modifications of payroll tax subsidy programs: the design of Minijobs changed and Midijobs were newly introduced. The Minijob program (*geringfügige Beschäftigung*) generates a vast notch in net earnings schedule which affects labor market choices and has been studied widely (e.g., Tazhitdinova 2020, Gudgeon and Trenkle 2020, Heywood and Neumann 2017). Minijob employees pay neither income taxes nor social insurance contributions. This causes substantial bunching of labor supply at the Minijob monthly earnings limit (450 Euro).[1] In 2003, Midijobs were introduced to attenuate this disincentive to expand labor supply.[2] While Midijob employees are liable for income taxes their social insurance contributions are subsidized on a sliding scale over the Midijob earnings range (2003-2013: 400-800 Euro per month, 2013-2019: 450-850 Euro per month). Even though they are widely used Midijobs have hardly been investigated, so far.

As of Dec. 31 2019, Midi- and Minijob employment accounted for 2.97 and 4.53 mio. employees, respectively, which relates to 33.7 mio. individuals in the German labor force covered by the social security system (BA 2020a).[3] As more than one in five workers benefits from payroll tax subsidies it is important to understand the mechanisms and behavior patterns generated by these programs. This is all the more important as in 2019 the German government extended the monthly earnings ceiling of the Midijob program from 850 to 1300 Euro with

[1] Also, it generates a labor market trap particularly for secondary earners in couples who are subject to high marginal income tax rates once they pass the Minijob earnings limit (Collischon et al. 2021).

[2] For a motivating statement of the governing party in the legislative debate see, e.g., Bundesrat (2002, p.577).

[3] This includes only Minijobs which are held as main employment and meet the monthly pay limit. Short-term employments and Minijobs as secondary employment, which make up another 3 mio. employment relationships, are not considered in this figure. Minijobs are not part of the labor force covered by the social security system.

hardly any empirical evidence on program effects. We study Midijobs and address four questions: (i) who uses Midijobs, (ii) from which labor market states do individuals enter Midijobs, (iii) how long do Midijob employments last, and (iv) into which labor market states do individuals exit from Midijobs. It is helpful if analyses of the impact and effectiveness of policy instruments are informed by reliable descriptions of relevant facts. This paper offers this information and characterizes the utilization of Midijobs by providing a snapshot of utilization patterns as well as a view on dynamic labor market transition processes.

The international literature on payroll tax subsidies is vast and focuses typically on employment effects (e.g., Gruber 1997, Anderson and Meyer 1997 and 2000, Bingley and Lanot 2002, or more recently Saez et al. 2019). In this setting, the German case is of special interest: the Mini- and Midijob payroll tax subsidy programs are of universal coverage as opposed to programs in other countries which cover only specific regions, industries, individuals, and employers.[4] The German case may serve as a blueprint for more specific national payroll tax subsidy schemes and be of interest for other countries which levy social insurance contributions only for earnings above a minimum income threshold.[5]

The German literature on Midijobs is limited.[6] A number of contributions explain the Midijob instrument and describe its utilization.[7] More recently, Bach et al. (2018) provided

[4] For example, Korkeamäki and Uusitalo (2009) investigate a program for northern Finland and Bennmarker et al. (2009) study a program for northern Sweden. Garsaa and Levratto (2015) evaluate payroll tax subsidies for manufacturing firms only, Kangasharju (2007) evaluate a program that only benefits those previously unemployed, Huttunen et al. (2013) look at a subsidy that benefits low skill older workers, and Saez et al. (2019) evaluate a program for young workers.

[5] Following SSA (2018) the following national social security systems use minimum income regulations when levying social insurance contributions such as Austria, Bulgaria, Croatia, Cyprus, Estonia, Finland, Greece, Hungary, Ireland, Norway, Spain, Sweden, or the United Kingdom.

[6] Recently, the Institute for Employment Research (IAB) provided a webpage which lists contributions to the literature that are related to Midijobs. (see https://www.iab.de/infoplattform/midijob (last access February 18, 2022).

[7] See, e.g., Brandt (2005, 2006), Bundestag (2018) and Bundestag (2021) which both provide rich statistical background information, Herzog-Stein and Sesselmeier (2012), Berthold and

background analyses for the recent 2019 Midijob reform using survey data from the German Socioeconomic Panel (SOEP). The authors offer an ex ante evaluation and conclude that the reform may worsen the part-time employment trap. Most recently, Keller, Pusch, and Seifert (2021) offer a detailed account of Midijobs based on a recent cross section of survey data and aggregate statistics.[8] The authors describe the institutional background, the characteristics of Midijobs and Midijobbers as of 2018 and 2019 and focus on the extent to which these employment relationships may be labelled precarious. The paper critically discusses the recent reform of Midijob employment. The authors consider Midijob employment as problematic due to low earnings and discuss minimum wages and more flexible extensions of working hours for Midijobbers as potential remedies.

To our knowledge, only Fertig and Kluve (2006) offer multivariate regression analyses of Midijobs. The authors study Midijob utilization based on administrative data covering the time until June 2004, only. They find that Midijobs were frequent among those with low education and in the 25-35 age range. Also, their survey results show that 75 percent of all Midijobs were held by women; respondents indicated that women in West Germany held them as stable employment and women in East Germany considered Midijobs as a transitional step in returning to regular full employment. The authors find no evidence that transition rates from the Mini- to the Midijob earnings range increased after Midijobs were introduced on April 1, 2003. However, based on a comparison of individual labor market states before entering and after exiting Midijob employment they conclude that Midijobs may be an effective stepping stone from unemployment into regular employment.

The Midijob literature leaves numerous questions unanswered some of which we address here. In this study, we use administrative data to offer a reliable and comprehensive

Coban (2013a, 2013b), Fichtl (2015), Keller and Seifert (2015), Seifert (2017), Dundler et al. (2019) and, most recently, Keller et al. (2021).

[8] The authors use the 2018 data from the German Socioeconomic Panel (SOEP) and the Panel Study Labour Market and Social Security (PASS).

description of Midijob utilization ranging from the introduction of Midijobs in 2003 through 2017. We describe the characteristics of Midijob employees and employers and the dynamics of utilization patterns. We evaluate whether the early Midijob patterns observed by Fertig and Kluve (2006) changed over time. We go beyond the contribution of Keller et al. (2021) by investigating the transition patterns between alternative labor market states.

Our main findings are as follows: since the inception of Midijobs, the typical Midijob employee is female, young, without vocational training and often with foreign citizenship. Observed Midijob earnings are uniformly distributed over the full Midijob earnings range. Most Midijobbers are in service occupations, work in small firms, and are unlikely to be in manufacturing. Midijobs lasted on average 9.5 months with longer employments for female and older workers and for those in small firms. About one quarter of all Midijobs started after a transition from regular employment and 18 percent after a Minijob employment. Overall, 7 percent of all Midijobs were taken up after an unemployment spell (compared to more than 30 percent in the early data studied by Fertig and Kluve 2006) and this share declined over time. Similarly, about 7.5 percent of all completed Midijobs ended in a transition to unemployment, again the share declined over time. The unemployment risk after Midijobs is highest in East Germany and for those in small firms. 32 percent of all Midijobs were followed by regular employment spells and about 6 percent by Minijobs. Overall, transition patterns differ along the age distribution. The young are more likely to enter Midijobs from states of non-employment and to exit into Minijobs whereas more mature workers tend to transit between regular and Midijob employment.

Next, we summarize the relevant institutional background. Section 3 describes our data, sampling, and indicators. We describe the characteristics of Midijob utilization in section 4 and its dynamics in terms of labor market transitions in section 5. Section 6 concludes and previews open research questions.

2. Institutional Background

Midijobs were introduced in response to disincentives generated by the Minijob program. Minijobs exist since the early days of the German social insurance system to reduce the administrative burden connected to marginal employment relationships. The program stipulates that employees with total earnings below a monthly ceiling (currently 450 Euro) are exempt from social insurance contributions and from income taxes.[9] Instead, their employers pay fixed contributions (currently 30 percent of gross earnings go to social insurance and tax authorities). When monthly earnings exceed the Minijob earnings ceiling, workers become liable to pay income taxes and social insurance contributions on total earnings. This generates a "part-time wall" or "Minijob trap" barring earnings increases. Midijobs soften the notch in workers' net earnings distribution.

Midijobs were introduced April 1, 2003, among broad set of labor market reforms:[10] the Midijob program subsidizes social insurance contributions of employees working in the Midijob earnings range.[11] This earnings range, which was adjusted over time, extends from the Minijob earnings ceiling to the Midijob earnings ceiling (initially 400-800 Euro per month, see **Table 1**). While Midijob employees have to pay income taxes in full their social insurance contributions are subsidized on a sliding scale; the contribution rates start out at about 10

[9] Minijobs additionally comprise short-term employment relationships (*kurzfristige Beschäftigung*), which do not extend beyond (currently) 70 days per year, independent of earnings. These short-term employments follow a strong seasonal pattern (see BA 2010). We disregard this second category of Minijob employment, which is less prevalent than the category of employments earning below the 450 Euro limit: at the end of 2019 there were 175,575 short-term Minijobs and 7.5 million employment relationships under the 450 Euro limit. Of these 7.5 mio. about 4.5 mio. Minijobs are workers' main employment and about 3 mio. are Minijobs which are held as secondary employment (BA 2020b).

[10] The law (*Zweites Gesetz für Moderne Dienstleistungen am Arbeitsmarkt*, Hartz II) was passed December 23, 2002. The law had four objectives: (i) make employment at the 400 Euro per month threshold more attractive, (ii) provide an incentive for the unemployed, to take up employment and to thus reduce unemployment, (iii) offer social insurance for legal employment, and (iv) increase the contribution base for social insurances.

[11] Social insurance contributions are to be paid to the health, unemployment, long term care, and retirement insurances. Unsubsidized total employer and employee contributions amount to about 20 percent of gross earnings, for each side.

percent when earnings are slightly above the Minijob earnings ceiling and increase to reach the unsubsidized level of about 20 percent at the Midijob earnings ceiling.[12] For employers, contribution rates drop at the Minijob earnings ceiling to the regular unsubsidized level of about 20 percent which are payable for all employees with earnings beyond the Minijob level.[13] **Figure 1** depicts net and gross earnings for employees and employers under Mini- and Midijob regulations as of 2018 along the gross earnings distribution, however, ignoring employee income taxes. The top line (blue, reflecting employers' labor cost) indicates an incentive to increase gross earnings beyond the Minijob earnings ceiling because it reduces employer expenses. The bottom line (orange, reflecting net earnings for employees) indicates a disincentive for workers to increase gross earnings beyond the Minijob earnings ceiling because at that point contributions fall due (in addition to income taxes which are not depicted). Without the Midijob subsidy net earnings would drop to the bottom grey dashed line once the Minijob earnings ceiling is passed. **Figure 1** shows that the Midijob subsidy attenuates the notch in workers' net earnings schedule.[14]

The Midijob regulation was modified in 2019: starting July 1, 2019 the upper earnings limit of subsidized Midijob employment increased from 850 to 1,300 Euro.[15] While the initial contribution rate for workers at 450 Euro gross earnings remained at 10.4 percent, the contribution rate at 850 Euro fell from the full unsubsidized level of 20.1 to now 17.3 percent

[12] Initially, employee social insurance contribution rates for Midijob employment at earnings levels slightly above the Minijob earnings ceiling started out at about 4 percent. Subsequent to a 2006 Minijob reform, the starting level of employee social insurance contributions rose to about 9 percent (SVR 2006 p.72). Since then the entry rate increased to about 10 percent.

[13] Employer contributions for Minijobs amounted to 22 percent between 04/1999 and 03/2003, 25 percent between 04/2003 and 06/2006 and 30 percent since 07/2009. For an analysis of their labor demand effects see Collischon et al. (2020).

[14] When income taxes are considered as well, the net earnings schedule for workers drops much further once gross earnings exceed 450 Euro, depending on the individual income tax situation.

[15] The law (*RV-Leistungsverbesserungs- und Stabilisierungsgesetz*) was passed in November 2018. While it mostly reformed retirement regulations it also aimed at supporting low income earners by extending the Midijob subsidy to higher earnings and by improving retirement insurance coverage for Midijobs.

and the unsubsidized rate is now reached only at gross earnings of 1,300 Euro (for a depiction see Keller et al. 2021). In addition, Midijob earnings started to be considered in full for retirement insurance earnings records; before, only the reduced amount for which workers actually paid contributions was recorded. This reform rendered the program more attractive for workers who can now amass higher claims against the retirement insurance.

Given the generous subsidies Mini- and Midijobs have been rather popular. **Figure 2a** depicts the number of regular workers subject to mandatory social insurance contributions and the number of those employed in Minijobs and in Midijobs since 2003. Regular employment increased in an almost uninterrupted employment boom to reach 33.7 mio. by the end of 2019. Minijob employment was rather stable over time at about 5 mio.; it recently declined - particularly after the introduction of general minimum wages on Jan. 1, 2015 - to reach 4.5 mio. at the end of 2019. Midijob employment was stable at about 1.3 mio. over time and increased after the most recent expansion of the upper earnings ceiling in 2019 to 2.97 mio. **Figure 2b** reflects the share of Minijob and Midijob in total employment: with rising regular employment the relative importance of Minijobs dropped to 14 percent while Midijobs made up a constant share of about 4 percent of all socially insured employment up until the 2019 reform.

3. Data

We apply administrative data to study the incidence, development, and characteristics of Midijob employment. In particular, we use the Sample of Integrated Labour Market Biographies (SIAB, 1975-2017, DOI: 10.5164/IAB.SIAB7517.de.en.v1) which is available from the Research Data Centre of the Federal Employment Agency at the Institute for Employment Research. The data represent a 2 percent random sample of all individuals ever registered in the German social insurance system and offer a large sample with precise

employment information at the daily level; this excludes civil servants and the self-employed.[16] The data offer detailed information on demographics, employment, and unemployment spells; also, employer characteristics can be merged. To characterize educational attainment we apply the imputation procedure IP1 suggested by Thomsen et al. (2018) with a minor modification.[17]

Our sample comprises all Midijob employment episodes observed between 2003 and 2017. We consider all individuals in East and West Germany aged 17-70. As some pursue several labor market activities simultaneously our analyses focus on individuals' main employment at any given point in time; this main employment is defined to be the highest paying spell in a given period. Between April 1, 2003 and Dec. 31, 2017 we observe 205,222 different individuals who held 319,479 different Midijobs. About 66 percent of all individuals held exactly one Midijob and about 21 percent were observed in two separate Midijob employment relationships over time. The remaining 13 percent of all individuals held between 3 and 12 different Midijobs over the observation period of 176 consecutive months. We generate a panel dataset with monthly observation for all individuals.

In order to identify Midijobs in our data, we apply legal definitions (see § 20(2) Social Code IV):[18] we consider individuals to hold a Midijob if their main employment yields monthly earnings between the lower and upper Midijob earnings limits (see **Table 1**). If employment episodes do not cover full calendar months, e.g., because they start after the beginning or terminate before the end of a month, we calculate hypothetical monthly earnings to determine Midijob status. As individuals in training, apprenticeships, voluntary civil service, in partial

[16] For details on the data, please see Dauth and Eppelsheimer (2020) or Antoni et al. (2019).
[17] In principle, we followed the imputation procedure IP1 as described by Thomsen et al. (2018). The original procedure first uses forward and backward adjustments to substitute for missing information. In a last step they select the most plausible information on education if there are parallel spells. In our imputation procedure we first eliminate parallel spells and then follow the forward and backward adjustments. So, we agree on imputation steps 4.1-4.4 but deviate from imputation step 4.5 because we do this last step in advance.
[18] We offer more detail on the Midijob characterization in the data in part 3 of our Institutional Appendix below.

retirement, in short term employment, or in certain active labor market programs (*Wiedereingliederungsmaßnahmen*) are excluded from the Midijob program we do not consider these spell types either.

By focusing on individuals' main employment, we generate two types of measurement error. First, we wrongly code Midijobs in cases where individuals hold more than one employment in the Midijob earnings range and the sum of the earnings from both employments exceeds the upper limit of Midijob earnings. By law, these individuals do not benefit from the Midijob subsidy. Second, we wrongly do not code Midijobs in cases where individuals hold more than one Minijob employment and the sum of the earnings from both employments exceeds the upper limit of Minijob earnings. In this situation, both employments should be covered by the Midi- rather than the Minijob regulation.[19] In subsequent work we will examine to what extent such overlapping employment relationships exist and how they are handled by employers.

In **Figure 3** we describe the development of the number of observed Midijobs per end of year in our sample and for aggregate data. **Figure 3a** is based on our definition as described above and **Figure 3b** shows a subset of our sample that matches the definition of Midijob employment applied in the aggregate data as reported by the Federal Employment Agency (for details see figure notes and institutional appendix). The development of the number of observations in our sample agrees well with that of the aggregate number of Midijob cases.

In order to characterize Midijob employers we merge data from the Establishment History Panel (BHP, 1975-2017, DOI: 10.5164/IAB.FDZD.1809.de.v1) for each Midijob observation based on the annual BHP information on establishments as of June 30 each year (for details see e.g. Gruhl et al. 2012). This merge results in about 3 percent missing values on

[19] It is allowed to hold one Minijob employment in addition to a regular Midijob. This will not cause measurement error in our data because the Midijob would be the main employment.

establishment characteristics for all Midijobs which exist in establishments that are not observed on June 30. They may have closed before or were established after that date.

4. Characteristics of Midijob Utilization

In this section we describe the utilization patterns of Midijob employment based on our sample of administrative data (for a description based on survey data see Keller et al. 2021).[20] We characterize the demographics of Midijobbers, Midijob earnings, occupation, and industry distribution, as well as employer characteristics.

Midijob employees tend to be female and young: 62 percent of all observed Midijobs are held by females, 38 percent are held by males. More than 22 percent of Midijobs are taken up by individuals below age 25 and another 29 percent by those aged 25-34. In contrast, only 1.6 percent of starting Midijobs are initiated by those aged 65 and above. **Table 2a** presents the age by gender composition of all employees starting Midijobs in our data; columns 2 and 4 show the column shares by gender and columns 3 and 5 describe the age by gender share in the total number of Midijobs.[21] Males appear to use the subsidy more when they are young whereas female Midijobbers are somewhat more likely to be observed at higher ages, as well. Clearly, women aged 25-54 account for the largest share of Midijobs.

About 22 percent of Midijobs are held by individuals living in East Germany and 78 percent by residents of West Germany, which matches aggregate employment shares. In contrast, about 19 percent of starting Midijobs are held by non-German citizens which exceeds this group's overall employment share: in 2003 and 2017 foreigners made up between about 6 and 11 percent of the workforce (BA 2020a).

[20] Keller et al. (2021) take advantage of their rich survey data and offer detailed descriptions of Midjob job characteristics in 2018 also comparing Minijobs, Midijobs, and regular employment. They focus less on developments over time or dynamics of job transitions.
[21] Keller et al. (2021) also characterize the age distribution of Midijobbers. They chose fewer categories and conclude somewhat different from our findings that the age distribution of Midijobs resembles that of the overall employment subject to social insurance contributions.

Those starting Midijob employment have less vocational education than the general mandatorily insured workforce which we characterize at the beginning and the end of our observation period in columns 2 and 3 of **Table 2b**. The difference in training is connected to the skewed age distribution of Midijobbers. Among Midijobbers aged 25 and below the share of individuals without formal vocational training is much higher compared to those in older age groups (see column 2). Columns 3 and 4 show that female Midijobbers are better educated than male Midijobbers.

Figure 4 describes the earnings distribution of Midijob employees over time: we find that all earnings categories are represented to rather similar extents. Starting January 1, 2013 the Midijob earnings range shifted upwards from 400-800 to 450-850 Euro per month. At this point, little changed in the overall distribution; about 14 percent of Midijobbers were previously in the bottom category and a similar share held Midijobs in the top earnings category. In all years, the 750-800 Euro earnings category had the highest frequency.[22]

We observe only small differences in median monthly Midijob earnings across demographic groups. Overall, median nominal earnings are 635 Euro per month with 614 among men and 643 among women. Median Midijob earnings in East Germany are above those in West Germany (645 vs. 632). Across education groups, those with only vocational training have the highest and those with only upper secondary schooling but no vocational training the lowest median earnings (651 vs. 607).[23] The youngest age group earns the least and those aged 45-54 the most (589 vs. 648) at the median. German and foreign citizens do not differ and among occupational groups technicians have the highest median earnings (655 Euro). These figures do not account for the number of hours worked as we observe only monthly earnings.

[22] For comparison, average monthly gross earnings in the full population of mandatorily insured workers increased from 2,411 Euro in 2003 to 3,091 Euro in 2017 in nominal terms (DRV 2018, p.260).

[23] Education information is available in 6 categories: no training, only vocational training, upper secondary school, vocational training plus upper secondary school, and two types of academic training.

In **Table 2c** we describe the distribution of Midijobs across occupational categories of the employments over the full observation period. Interestingly, Midijobs are found across all qualification levels and occupational groups. Overall, about 52 and 41 percent of Midijobs handle simple and qualified tasks, respectively (see bottom row of columns 2 and 3). About 17 percent of all Midijobs are in manual occupations, 35 percent in services and 28 percent in clerical or administrative occupations (see column 4). When we compare the Midijob occupations with those observed for all mandatorily insured employees (see column 5) we find a smaller share of Midijobs in technician / engineer occupations and manual occupations. Overall, Midijobs are more likely in simple (52.2 vs. 32.6 percent) and less likely in qualified employments (40.8 vs. 62.3 percent) than overall employment.

Next, we focus on the characteristics of employers for all starting Midijobs during our observation period 2003-2017. **Table 3** describes their distribution by firm size and industry paired with the distribution of aggregate employment. We find that Midijob employers tend to be rather small establishments with 36 percent with fewer than 20 employees compared to 26 percent among employers overall and reverse patterns for large establishments. In terms of industry, Midijob employers are substantially less likely in manufacturing and more likely in services (e.g., trade, hotels, restaurants, logistics and financial services) than among employers overall.

In our data about 35 percent of all establishments employ Midijobbers and we find on average 0.6 Midijobbers per establishment. Of those which employ Midijobbers, 71 percent employ one and 16 percent 2 Midijobbers. Thus, Midijob employment is spread broadly across firms. We observe the smallest average number of Midijobbers in the construction industry (0.39) and the largest in logistics (0.81) and education, health and public administration (0.85).

In sum, the typical Midijob employee is female, young without vocational training, and more likely to be a foreign citizen than the average worker. Employment relationships exist

over the full earnings range. Most Midijobs are in service occupations, in small firms, and unlikely to be in manufacturing.

5. Dynamics of Midijob Utilization

In this section we study labor market transitions into and out of Midijobs and describe the duration of Midijob employment.

5.1 Entries to Midijob employment

First, we describe from which labor market states individuals entered Midijob employment. In our data and over the entire observation period (2003-2017) about 27 percent of Midijobs were initiated after an interruption of at least 31 days after the last labor market spell.[24] This suggests that Midijobs were frequently taken up after breaks in labor market careers. About 25 percent of all Midijobs were started after a prior regular, unsubsidized employment; 27 percent of these involve an employer change whereas 73 percent result from a reduction of monthly earnings with the same employer. About 18 percent of all Midijobbers were previously employed in a Minijob and 6 percent in a different Midijob. Given that Midijobs were intended to smooth the return to the regular labor market from Minijob employment these shares appear modest. Only 7 percent of all Midijobs were started out of registered unemployment.

Figure 5 shows how these entry patterns developed over time. The share of former Minijobbers increased from 14 percent in 2004 to a maximum of 21.6 percent in 2015 which is the year when the minimum wage was first introduced. The share then declined again to 18

[24] We coded direct transitions from the previous labor market state if an intermittent interruption spell without information on labor market activity was shorter than 31 days. If the time since the last recorded labor market state exceeded 31 days we coded an 'interruption' state. These may include out of the labor force states, self employment, or civil servant episodes. Our data do not allow us to separate these groups. About 44 and 56 percent of all interruptions are observed for male and female observations, respectively. Interruptions occur more frequently among younger individuals.

percent in 2017. The share entering from unemployment declined over time which follows the development of aggregate unemployment: between 2005 and 2018 the number of registered unemployed in Germany fell almost monotonously from 4.86 mio. to 2.34 mio. (Destatis 2019). The overall share of Midijobbers entering from regular employment fluctuated around 27 percent. Over time, about 40 percent of Midijobbers entered from an interruption of their labor market engagement or from 'other' states.[25] These results differ slightly from those of Keller et al. (2021) who use annual survey data of the German Socioeconomic Panel (SOEP) to characterize entry to Midijobs in 2018. They find 2.9 percent entering from unemployment and 12.8 percent from an out of the labor force situation in 2018. For 2017 we observe 4.0 percent from unemployment, 15.3 percent out of 'other' situations and 29.4 from an interruption state of at least one month duration. The difference may relate to variation between 2017 and 2018 and to the frequency of observations which is annual in the SOEP and daily in the SIAB data.

The distribution of prior labor market states varies somewhat with worker characteristics. We observe entries from employment breaks particularly for young individuals (age groups below 25 and 25-34), who may take on short-term employment during semester breaks. We indeed find individuals with a completed secondary school degree and those with tertiary degrees to enter more frequently after interruptions. Transitions from Minijob employment are particularly frequent among those age 65 and above. We hardly observe transitions from regular employment into Midijob employment among the young but more so among workers aged 45-64. Transitions from unemployment are more likely for German than

[25] The set of 'other' activities includes individuals for whom the Midijob was the first employment recorded with the labor office (6 percent of all Midijob starts), those who were in other types of employment prior to the start of the Midijob program and switched to the Midijob right on April 1, 2003 (jointly 5.37 percent of all Midijob starts), those previously on sick spells, motherhood related out of the labor force states, or sabbaticals (jointly 1.6 percent of all Midijob starts), and a group coded "other" in the original data, where the largest subgroups were employed as student trainee (*Werkstudent*) or intern (*Praktikant*) (2 percent) or apprentices (1 percent) prior to entering a Midijob.

foreign citizens and for East than for West Germans; East Germans are also much less likely to enter Midijobs from Minijobs than West Germans (12.7 vs. 18.9 percent).

5.2 Duration of Midijob employment

Second, we describe the duration of completed Midijob employment spells. We disregard Midijobs that were right censored at the end of the observation period which results in the loss of 18,940 observations leaving 300,539 completed spells. The average Midijob lasts 288 days, about 9-10 months and the median duration is 122 days, about 4 months.[26] This is substantially shorter than the median duration of all employment relationships subject to social insurance contributions which, e.g., since 2016 clearly exceeds 9 months (BA 2021). The difference indicates that the duration distribution is right skewed: while the 25th percentile of the distribution is 31 days, i.e., 91 days less than the median, the 75th percentile reaches 334 days, i.e., 212 days above the median. The distribution was rather stable over time (see **Figure 6**).[27] The duration and stability of Midijob employment varies across demographic groups. Interestingly, median Midijob duration increases linearly with age from 92 to 275 days for the age groups below age 25 to those age 65 and above. Also, Midijobs are a more permanent employment choice for females than males, with median durations at 153 and 92 days, respectively. Similarly, natives' employments last longer than foreigners' (122 vs. 103 days at the median).[28] There is no East-West difference. Across occupational categories those in qualified employments hold Midijobs for longer than those in more simple jobs.

[26] When we add the right censored spells the mean duration increases from 288 to 317 days and the median from 122 to 123 days. Thus, on average right censored spells represent long lasting Midijobs.

[27] Keller et al. (2021) describe the duration of Midijobs observed in 2018 when 30 percent had been employed for no longer than one year. While this may not describe completed spells the share of short employments is substantially larger than in the overall employed labor force.

[28] Foreigners who drop out of the sample after the Midijob (N= 5,215) have a shorter median duration of 80 days than foreigners who continue to be observed in the data after the Midijob (N=52,787, median of 109 days). However, for both the Midijob is shorter than for natives.

In **Table 4**, we show linear regression results of the duration of completed Midijobs (measured in days). This allows us to sign and quantify the conditional correlation of various characteristics with Midijob duration. We consider three specifications which first consider individual characteristics only, then add occupational characteristics, and finally use employer characteristics, as well. All estimations control for fixed effects of the calendar year in which the Midijob was terminated. All characteristics are measured at the end of the Midijob spell (please see **Table A.1** in the appendix for descriptive statistics).

The estimations confirm that even conditional on other characteristics Midijob employment spells are longer for females than for males, and for older than for younger workers. Better educated workers remain in Midijob employment for a shorter period of time. Foreigners and East Germans use Midijobs for shorter spells than natives and West German citizens, respectively. Ceteris paribus, those in managerial and semiprofessional occupations and those in small establishments have the longest employment durations. Midijob employments in agriculture and mining are short lived and those in the production of food, drinks, and tobacco are particularly stable.

5.3 Exits from Midijob employment

Third, we are interested in the patterns of transitions out of Midijob employment. We focus here on subsequent labor market states and leave aspects regarding the quality of subsequent employment situations for future research.

Over the entire observation period about 32 percent of former Midijobbers left the subsidized earnings range and entered into unsubsidized full or part time employment in about equal shares; about 30 percent of these employments were with the same employer. Overall, regular employment after a Midijob was more stable than another Midijob or Minijob. About 25 percent of Midijobs ended without an immediate transition into another labor force status within the next 31 days ("interruption"); for about 21 percent of those with an interruption the

Midijob is the last observed spell in the data. About 10 percent reduced their labor market activity and entered a Minijob, and 5.8 percent took up a different Midijob. Similar to the unemployment share among Midijob entries, 7.5 percent of Midijobbers left for unemployment. **Figure 7** shows how these exit patterns developed over time. While most shares remained rather constant over time the share of Midijobbers transiting to unemployment declined from initially 14.4 percent in 2003 to 5.0 percent in 2016. This is in sync with the decline in aggregate unemployment over the considered period. At the same time, the share of Midijobbers taking up 'other' activities increased from about 12.5 percent in 2003 to 18.8 percent in 2016.[29] Again our findings differ somewhat from the results in Keller et al. (2021) who describe transitions from Midijobs held in 2017. In their data, only 2.3 percent enter unemployment and 5.9 percent of Midijobbers enter an out of the labor force state. In our data, 5 percent of Midijobbers in 2016 subsequently enter unemployment, 23 percent enter an interruption of at least one month duration and about 19 percent enter an 'other' state. Again, the difference may be due to looking at different calendar years and the heterogeneity of transition information at the annual and daily level.

The distribution of subsequent labor market states varies somewhat with worker characteristics. Based on cross tabulations exits into employment interruptions are more frequent among young individuals (age groups below 25 and 25-34), who may not yet be strongly attached to the labor market: their transition rates to regular employment and to unemployment are below average. In contrast, workers in the age range 35-54 have the highest probability to enter regular, unsubsidized employment after a Midijob (40.5 percent). The highest propensity to drop from a Midi- to a Minijob is observed for the small group of workers

[29] Overall, the largest category within the group of 'other' activities is censoring at the last observation (10.7 percent of all Midijobs, 68 percent of these occur at the end of our observation window in 2017 which is not depicted in **Figure 7**). The combined states of 'illness, motherhood or sabbatical' make up 3 percent of all Midijobs, and the largest groups in the remaining activities are working student and internship (2.8 percent of all Midijob exits), and the start of an apprenticeship (1.6 percent).

at age 65 and above. Men have a higher risk of transiting into a labor force interruption (break) than women (30 vs. 22 percent). Females feature a larger transition rate into regular employment compared to men (35 vs. 27 percent). Individuals with just a secondary schooling degree and neither tertiary nor vocational training are most at risk to drop out into an employment break or to a Minijob. Their propensity to take up regular employment after the Midijob is below that of other education groups. There are few differences between German and foreign workers' exit patterns; the latter suffer a higher risk of unemployment (8.1 vs. 5.3 percent for Germany). The exit patterns from Midijob employment are similar in East and West Germany with the only exception that the unemployment risk is much higher in East Germany (on average 11.5 percent vs. 6.4 percent in West Germany) and that Minijobs are used more often in West than in East Germany (11.1 percent vs. 7.1 percent in East Germany).[30] Fertig and Kluve (2006) pointed to differences in Midijob transitions in 2004 for women in East and West Germany. We compare the entry and exit patterns for women in both regions and for the full period of our data: the results in **Table 5** confirm that the initial patterns observed by Fertig and Kluve (2006) held up over time. West German women were more likely to transit between Midijobs and Minijobs whereas for East German women unemployment was a more relevant alternative. The East-West difference may result from both, differences in the stability of labor demand and in the labor supply interests between women in both regions of the country.

In order to describe the sign and relative magnitude of conditional correlation patterns we estimated a multinomial logit model for alternative exit destinations. We consider five destination states: Minijob, Midijob with a new employer, regular employment, unemployment, and 'other' which includes the interruption state. **Table 6** presents the estimation results in terms of average marginal effects. "Midijob with a new employer" is the reference outcome. The

[30] The share of transitions into unemployment dropped in East and West Germany over time. Starting at 23.9 (11.7) percent in East (West) Germany in 2003, it reached 12.4 (6.4) percent in 2007, and fell to 2.9 (2.3) percent in 2017.

models control for individual, occupational, and employer characteristics plus fixed effects for the year in which the Midijob was terminated. All characteristics are measured at the end of the Midijob spell (**Table A.1** provides descriptive statistics).

The average marginal effects describe the conditional correlation of each covariate with the probability of the considered outcome. Overall, transition patterns out of Midijobs are significantly correlated with the considered covariates. We find that female Midijobbers are significantly more likely than men to move to a Minijob, to a different Midijob, regular employment, or unemployment and less likely to take up 'other' employment states. In terms of age patterns the small group of the oldest Midijobbers (see **Table A.1**) stand out: they are most likely to switch to Minijobs or 'other' states, and least likely to enter regular employment or unemployment. Transitions to regular employment are most likely for middle aged workers. Individuals without vocational and academic training are substantially and significantly less likely to take up regular employment after a Midijob. Instead, they are more likely to shift to a Minijob, a different Midijob, or 'other' states. Surprisingly, those with vocational training appear to be significantly more likely to shift into unemployment than those without training. Even conditional on controls Midijobbers in East Germany experience relatively more frequent transitions to unemployment than those in West Germany. Also, East Germans transition less to Minijobs than West Germans. Foreign nationals differ from natives significantly in their transition patterns but the magnitude of the difference in moderate throughout.

In terms of occupation-specific effects, somewhat surprisingly we find relatively large propensities to move to Minijobs for professionals. Whereas there are no large differences in the propensity to take up another Midijob across professional groups (see column 2), agricultural workers have the lowest propensity to move to regular employment (see column 3). This happens most often for qualified and service occupations which in reverse are least likely to enter unemployment.

The large group of Midijob employees in small firms of 0-19 employees stand out compared to those in larger establishments: the latter are more likely to use Minijobs, less likely to transition to regular employment and to unemployment and more likely to use 'other' employment. Firm size differences are large and statistically significant. Not surprisingly, particularly individuals in service oriented industries have relatively high rates of continued Midijob employment but also of transitions to Minijobs. Transition rates into regular employment are lowest in agriculture and 'other' industries.

In sum, Midijobs lasted on average 9.5 months with longer employments for female and older workers and for those employed in smaller establishments. About one quarter of all Midijobs started after a transition from regular employment while 18 percent were initiated after a prior Minijob employment. The share of entries from unemployment amounted to 7 percent on average and declined over time. Similarly, about 7.5 percent of all completed Midijobs ended in a transition to unemployment, again with a falling share over time. The risk of a transition to unemployment is highest in East Germany, for Midijobbers in agricultural occupations and in small firms. 32 percent of all Midijobs were followed by regular employment spells and about 6 percent by Minijobs. Overall, transition patterns differ by age.

6. Summary

The German Midijob program was established to attenuate a notch in the net earnings schedule which is generated by Minijobs. Minijobs are minor employment relationships with an earnings limit of 450 Euro per month; Minijob earnings are exempt from employee social security contributions and income taxes. Midijobs are employment relationships in the earnings range immediately following upon Minijob earnings. Midijobbers enjoy subsidized social security contributions. They used to affect about 1.3 mio. jobs every year within the monthly earnings range of 450-850 Euro. Since 2019, the program has been expanded to the earnings range of 450-1300 Euro and now covers 2.9 mio. employment relationships (at the end of 2019).

As we know very little about Midijobs this study provides descriptive evidence on key features of Midijob employment and the dynamics of its utilization. We take advantage of a large sample from administrative data and update findings by an earlier contribution of Fertig and Kluve (2006). Recently, Keller et al. (2021) offer a characterization of Midijob employment which resembles our paper but differs slightly in focus. While we use administrative data and describe developments over time and dynamics of Midijob use at a daily frequency these authors take advantage of rich annual survey data and focus on the labor market situation of Midijobs in 2018.

We observe that the typical Midijob employee is female, young, without vocational training and frequently of foreign citizenship. Midijob earnings are equally distributed over the full Midijob earnings range. Most are in service occupations, work in small firms, and are unlikely to be in manufacturing. Midijobs lasted on average 9.5 months with longer employments for female and older workers and for those in smaller firms. About one quarter of all Midijobs started after a transition from regular employment while 18 percent were initiated after a prior Minijob employment. The share of entries from unemployment amounted to 7 percent on average and declined over time. Similarly, about 7.5 percent of all completed Midijobs ended in a transition to unemployment, again with a falling share over time. The risk of a transition to unemployment is highest in East Germany and for Midijobbers in small firms. 32 percent of all Midijobs were followed by regular employment spells and about 6 percent by Minijobs. Overall, transition patterns differ along the age distribution.

In contrast to the early results of Fertig and Kluve (2006) we find that Midijob employees come in two main groups: young individuals (age 17-34) which are more likely to be male than female and hold Midijobs on a transitional basis and middle aged female workers who remain in Midijobs more permanently (see Collischon et al. 2021 for long-run impacts of payroll tax incentives for recent mothers). We also observe a very small group of Midijobbers above age 65 with idiosyncratic labor force transition patterns.

On average the fiscal cost of the Midijob program is substantial. Prior to the 2019 reform, social insurance contributions were reduced on average by 21 Euro or 3.2 percent of gross earnings at the mean of roughly 650 Euro per month (after the 2013 adjustment of the earnings range) (see **Table 1**). With on average 1.22 mio. Midijob employees per year the fiscal cost for social insurances amounted on average to 307 mio. Euro per year before 2019. In 2019, the subsidized earnings range was extended to 1.300 Euro per month. Bach et al. (2018) calculate that this reform reduced social insurance contributions by another 400 Mio. Euro per year. Given these magnitudes it is important to further study both the mechanisms and utilization patterns of the program and whether it effectively supports employees in reentering the regular labor market.

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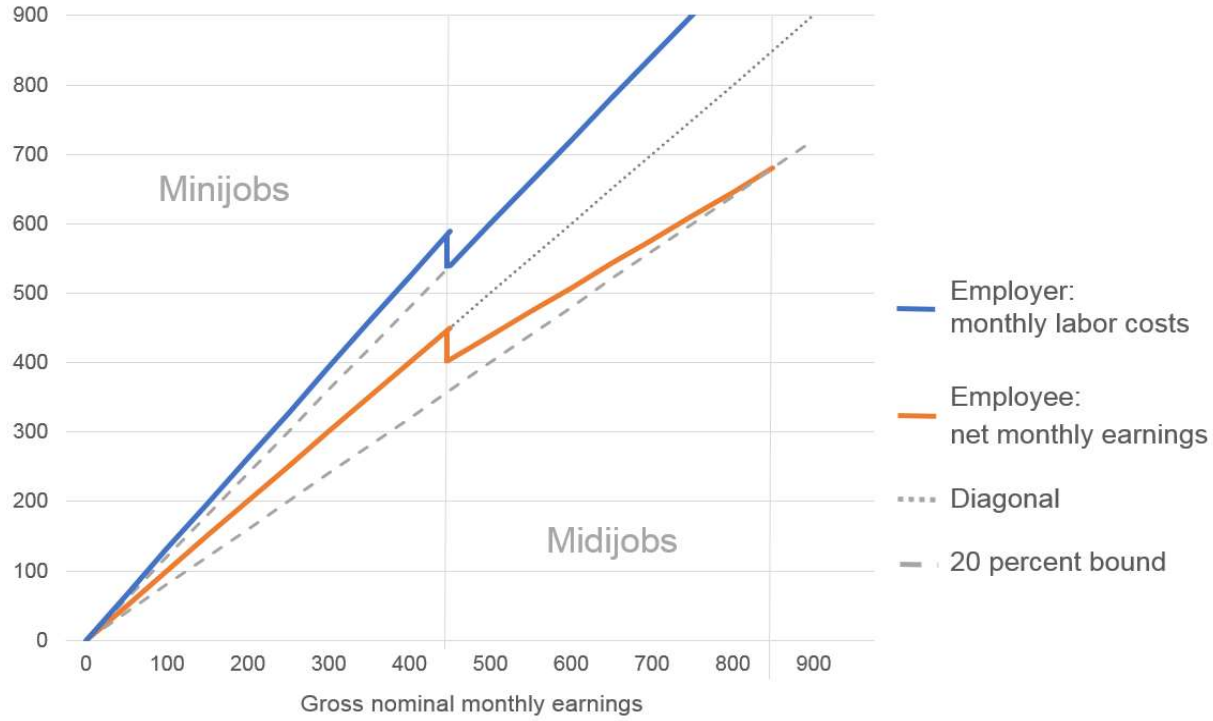
Figure 1 Employer labor cost and employee net earnings in Mini- and Midijobs (2018)



Note: Gross nominal monthly earnings are exclusive of employer payroll taxes or social insurance contributions. The 20 percent bounds around the diagonal indicate the change to gross earnings due to social insurance contributions. For the employer they are added on top of gross earnings to reflect labor costs and for the employee they are deducted to obtain net earnings (ignoring income tax). Voluntary employee contribution to the retirement insurances in Mini- and Midijob employment are not depicted.
Source: Own presentation

Figure 2a Number employees in regular employment subject to mandatory social insurance contributions, Minijobs, and Midijobs over time (in mio. individuals)

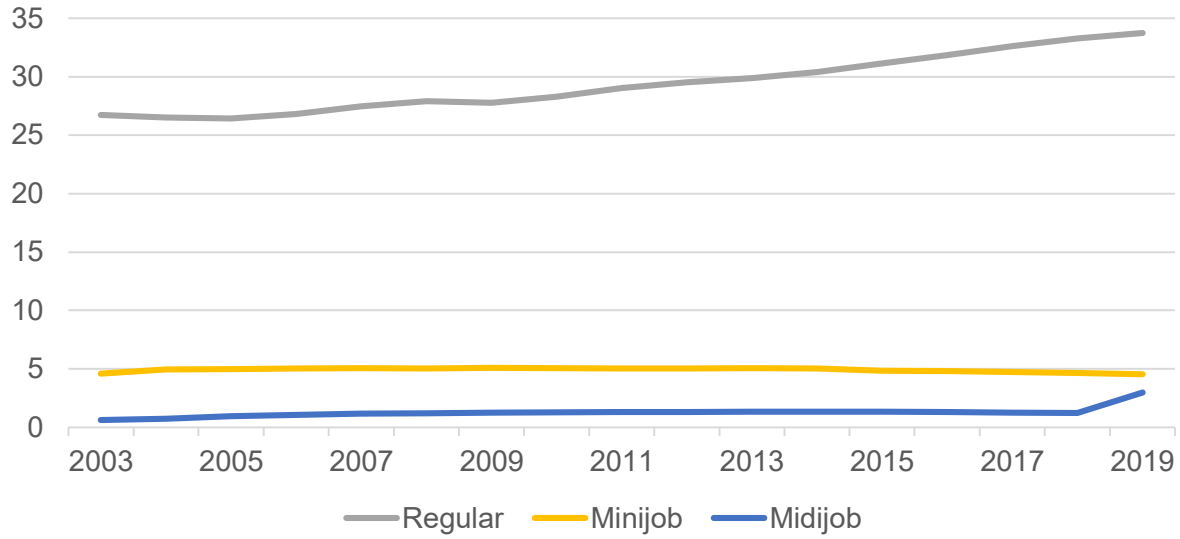
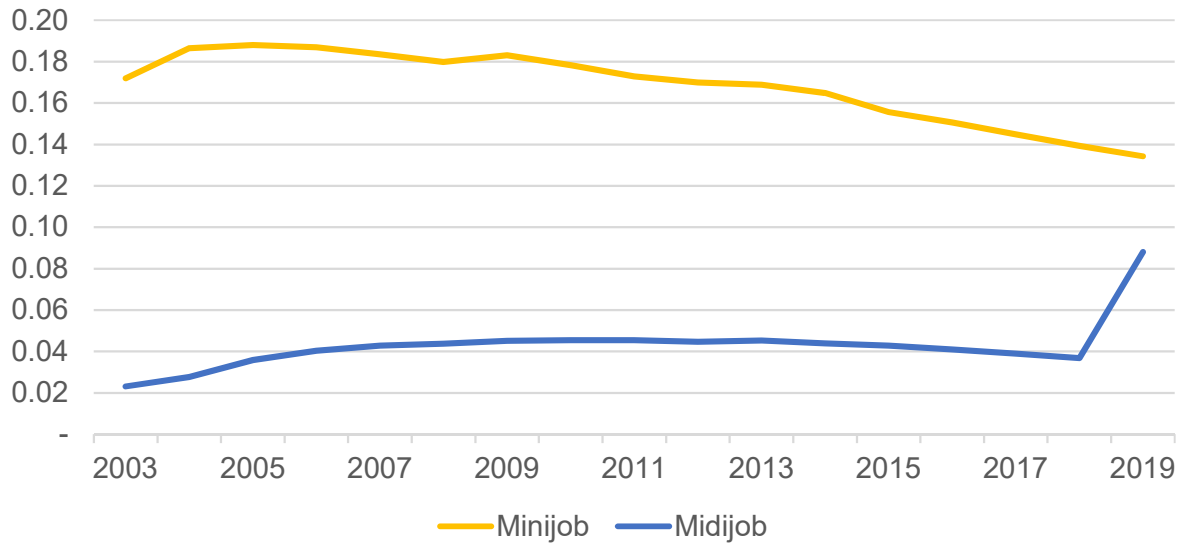


Figure 2b Ratio of Mini- and Midijob employment over regular employment subject to mandatory social insurance contributions over time



Note: The number of Minijob employees considers only those whose main employment is a Minijob with earnings below the earnings ceiling (i.e., *geringfügig entlohnte Beschäftigte in der Hauptbeschäftigung*). The number of Midijobs includes only those fully utilizing the subsidy (i.e., the Midijob indicator is coded 1, see Institutional Appendix (3)). When interpreting the ratios in Figure 2b please note that Midijob employment is part of regular employment subject to mandatory social insurance contributions whereas Minijob employment is not. The aggregate statistics on Midijobs combine employment relationships which remain strictly within the Midijob earnings range and those which are in this range on average over the employment spell (*Mischfälle*). The aggregate statistics on Midijobs do not include those Midijob employment relationships for which employees chose to pay full retirement insurance contributions. Therefore, the true number of Midijob employment relationships may even be higher.
Source: BA (2020a, 2020b), Bundestag (2018).

Figure 3a Observed number of Midijobs per end of year (analysis sample)

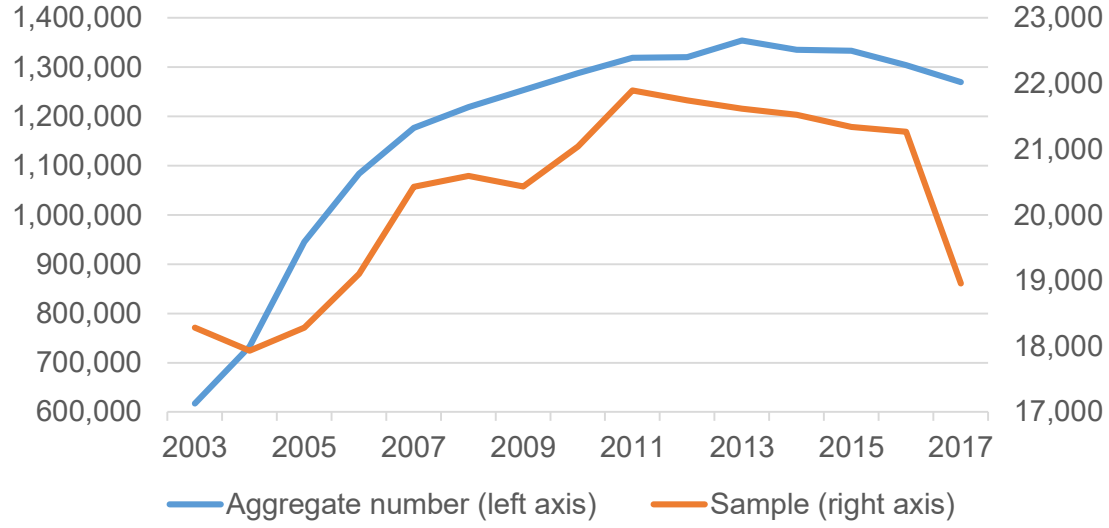
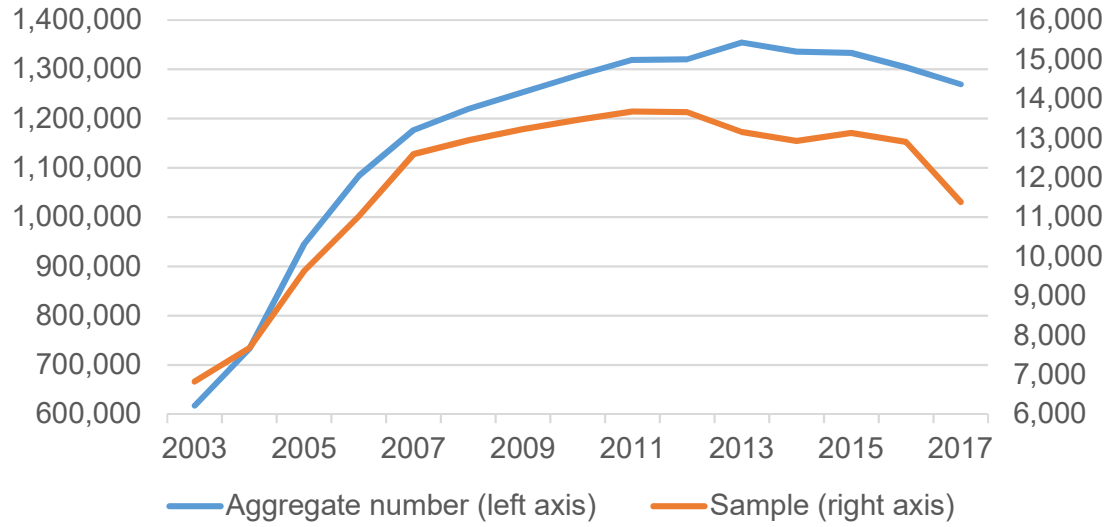
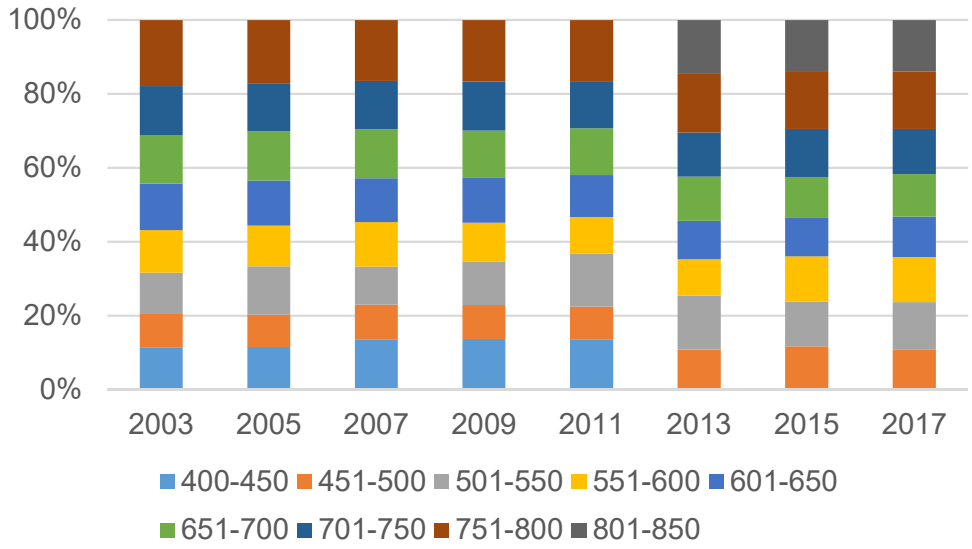


Figure 3b Observed number of Midijobs per end of year (matched sample)



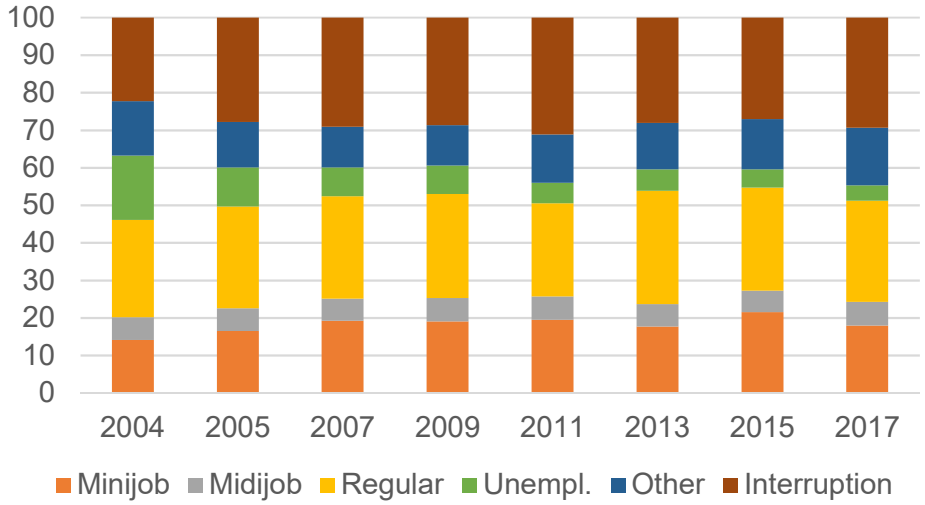
Note: In both figures the aggregate number of Midijobs shows the number of those fully utilizing the subsidy (i.e., the Midijob indicator is coded 1 or 2, see Institutional Appendix (3)). Aggregate statistics do not provide the number of Midijobbers with code value 0. **Figure 3a** shows the total number of sample observations following the definition as discussed in section 3, where we do not use the Midijob indicator. About 41 / 34 / 25 percent of Midijobs in our sample are coded value 0 / 1 / 2, respectively. In **Figure 3b** we apply the definition of the aggregate numbers to our sample by omitting the observations coded 0: we show only the number of observations in our analysis sample which are coded value 1 or 2. In both figures, the number of sample observations drops in 2017 because the data collection was not completed on Dec. 31, 2017.
Source: For aggregate data: Bundestag (2018), for sample data: own calculations based on SIAB data.

Figure 4 Earnings Distribution over All Midijob Employment Months by Year



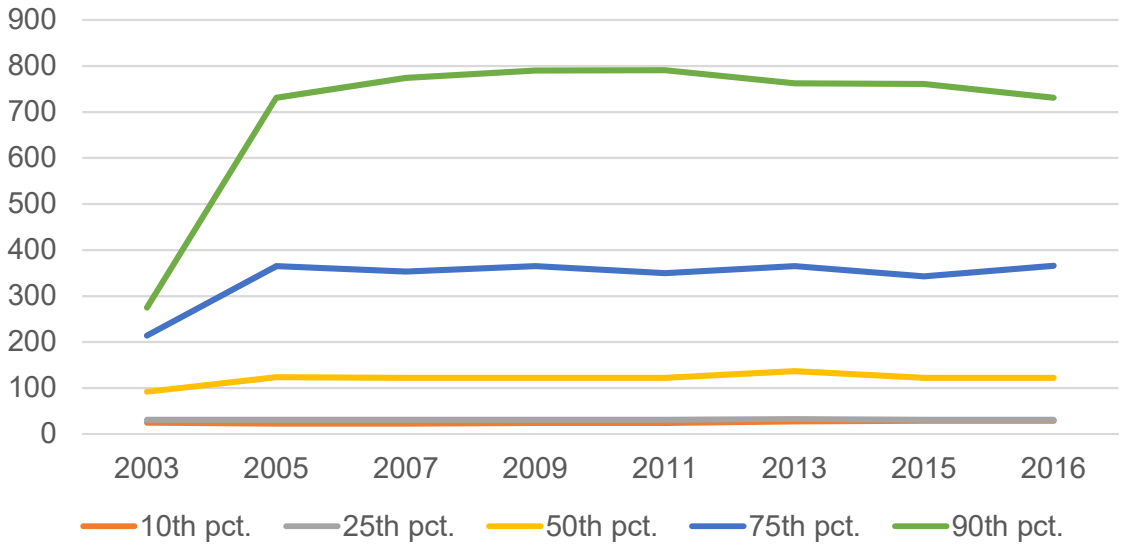
Source: Own calculations based on SIAB, 1975-2017.

Figure 5 **Labor Force Transitions into new Midijobs over Time: States of Origin**



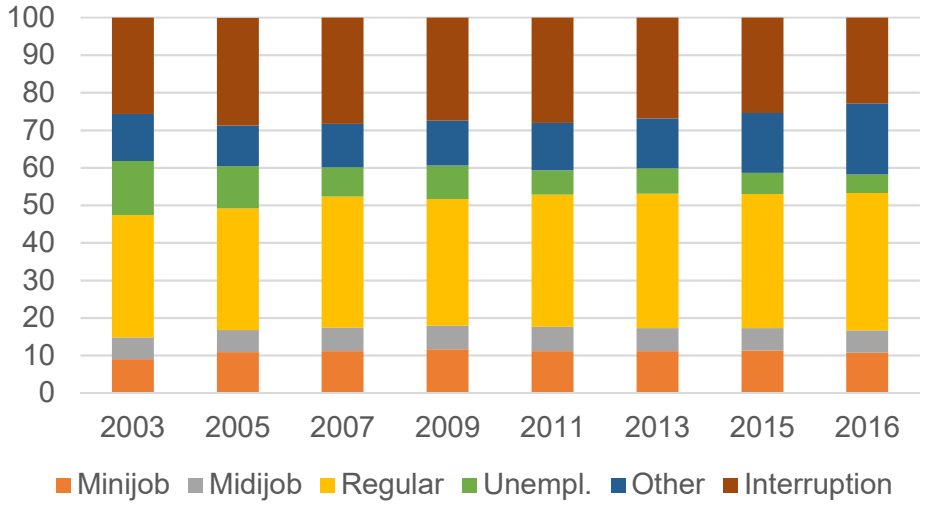
Source: Own calculations based on SIAB, 1975-2017.

Figure 6 Distribution of Midijob Duration by Ending Year (in Days)



Source: Own calculations based on SIAB, 1975-2017.

Figure 7 Labor Force Transitions out of Midijobs over Time: Destination States



Source: Own calculations based on SIAB, 1975-2017.

Table 1 Monthly earnings limits for Mini- and Midijob employment over time

Reform date	Minijob	Midijob earnings range	
	upper limit	lower limit	upper limit
Apr 1, 1999	325	-	-
Apr 1, 2003	400	400	800
Jan 1, 2013	450	450	850
July 1, 2019	450	450	1,300

Source: Own presentation.

Table 2a Distribution of Starting Midijobs by Age and Gender of Employee

	All (in percent) (1)	Male (in percent) (2)	Male (in percent of total) (3)	Female (in percent) (4)	Female (in percent of total) (5)
17-24	22.7	29.0	11.0	18.8	11.7
25-34	29.0	32.3	12.3	27.1	16.8
35-44	20.9	15.7	6.0	24.0	14.9
45-54	17.2	13.0	4.9	19.7	12.2
55-64	8.7	7.5	2.8	9.4	5.8
65+	1.6	2.5	0.9	1.0	0.6
Total	100.0	100.0	38.0	100.0	62.0
Number	319,479	121,273	121,273	198,206	198,206

Table 2b Distribution of Starting Midijobs and Aggregate Employment by Vocational Training of Employee

	Midijob (2013-2017)				Overall employment	
	All (in percent) (1)	Age 17-24 (in percent) (2)	Male (in percent) (3)	Female (in percent) (4)	2004 (in percent) (5)	2017 (in percent) (6)
no vocational training	41.0	68.5	49.1	36.0	16.6	12.6
vocational training	50.8	27.5	42.4	55.9	60.7	61.6
academic training	8.2	4.0	8.4	8.1	9.4	15.8
missing information	-	-	-	-	13.2	10.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 2c Distribution of Starting Midijob Employments by Type of Occupation

Occupation	Share (in percent) (1)	Simple (in percent) (2)	Qualified (in percent) (3)	Groups (in percent) (4)	Overall employment (in percent) (5)
Agricultural	2.17				1.22
Simple manual	8.93	8.93		16.79	11.56
Qualified manual	7.86		7.86		13.42
Technician / Engineer	2.24		2.24		7.80
Simple services	27.75	27.75		34.70	12.42
Qualified services	6.95		6.95		5.92
Semiprofessional	7.14		7.14		8.98
Professional	2.60		2.60		3.31
Simple clerk / admin.	15.52	15.52		28.35	8.57
Qualified clerk / admin.	12.83		12.83		22.83
Manager	1.14		1.14		1.35
Other	4.87				2.62
Total	100.00	52.20	40.76	79.84	100.00

Source: Midijob information from own calculations based on SIAB, 1975-2017; information on overall employment describes the situation of Dec. 31, 2010 based on the KldB88 category (BA, 2014). Column totals may not add due to rounding issues.

Table 3 Employer Characteristics at Start of Midijob Employment

	Share in	
	starting Midijobs	total employment
Firmsize: Number of employees		
0-19	36.14	26.01
20-99	24.52	25.91
100-199	10.40	12.06
200+	23.68	36.02
Missing information	5.26	-
Total	100.00	100.00
Industry		
Agriculture & Mining	2.32	2.65
Manufacturing	7.94	22.10
Construction	3.71	5.65
Trade Service Hotels Restaurants	29.75	20.75
Logistics & Financial Services	30.34	25.24
Education Health Publ. Admin.	19.89	23.61
Missing information	6.05	-
Total	100.00	100.00

Source: Information on starting Midijobs covers our full sample over the observation period 2003-2017; information on total employment describes the situation as of 30.06.2013 (BA, 2013).

Table 4 Linear Regression of Midijob Duration (number of days in employment)

	Coef	Std. Err.	Coef	Std. Err.	Coef	Std. Err.
Female	98.57	1.66 ***	76.70	1.75 ***	76.23	1.76 ***
Age 25-34	65.57	1.48 ***	63.78	1.49 ***	60.12	1.49 ***
Age 35-44	159.77	2.24 ***	163.10	2.24 ***	149.22	2.24 ***
Age 45-54	243.71	3.05 ***	250.40	3.10 ***	236.12	3.07 ***
Age 55-64	339.34	4.85 ***	345.24	4.90 ***	331.31	4.81 ***
Age 65+	408.79	11.02 ***	408.81	11.01 ***	395.18	10.86 ***
Educ: Voc Train	-38.11	2.05 ***	-44.72	20.40 ***	-51.23	2.02 ***
Educ: Academic	-74.59	3.00 ***	-86.01	3.06 ***	-84.28	3.04 ***
Foreign	-68.03	2.04 ***	-59.46	2.10 ***	-65.14	2.10 ***
East	-15.17	2.17 ***	-13.22	2.15 ***	-14.76	2.14 ***
Occ: Agricultural	-		-		-	
Occ: Simple manual	-		-110.30	6.89 ***	-79.43	7.83 ***
Occ: Qualified manual	-		-21.58	7.24 ***	-20.89	8.22 ***
Occ: Technician / Engineer	-		-13.98	9.54	1.93	10.27
Occ: Simple services	-		-21.61	9.47 **	5.17	10.14
Occ: Qualified services	-		-12.25	6.93 *	19.11	7.95 **
Occ: Semiprofessional	-		93.41	7.93 ***	66.97	8.85 ***
Occ: Professional	-		-28.70	7.41 ***	-25.38	8.53 ***
Occ: Simple clerk and admin.	-		-11.31	7.72	4.17	8.87
Occ: Qualified clerk and admin.	-		4.38	7.14	14.88	8.15 *
Occ: Manager	-		49.97	7.33 ***	62.10	8.24 ***
Occ: Other	-		10.81	10.56	17.86	11.19
Firm size 0-19	-		-		-	
Firm size 20-99	-		-		-95.75	2.39 ***
Firm size 100-199	-		-		-117.33	2.85 ***
Firm size 200-299	-		-		-115.28	3.73 ***
Firm size 300+	-		-		-120.93	2.69 ***
Ind: Agriculture & Mining	-		-		-	
Ind: Food Drink Tobacco	-		-		109.88	10.94 ***
Ind: Cons. Goods Production	-		-		78.83	11.68 ***
Ind: Ind. Goods Production	-		-		12.43	8.99
Ind: Capital Goods Production	-		-		14.44	8.32 *
Ind: Construction	-		-		30.10	8.55 ***
Ind: Trade Service Hotels Rest.	-		-		22.07	7.37 ***
Ind: Logistics & Financ. Services	-		-		6.57	7.25
Ind: Educ. Health Publ. Admin.	-		-		65.59	7.59 ***
Constant	-24.26	1.97 ***	-6.01	6.86	28.83	7.52 ***
N	300,539		300,539		300,539	
R Square	0.0868		0.0957		0.1087	

Notes: The sample excludes Midijob spells that were censored Dec. 31, 2017. The estimations control for calendar year fixed effects. The standard errors are robust and clustered at the person level. The set of age controls (reference: 17-24), of education controls (reference: no vocational education) and year fixed effects each are jointly statistically significant at the 1 percent level. As the reference year 2003 correlates with low Midijob durations the constant term is negative. Not depicted are controls for missing values on the occupation, firm size and industry outcomes. All measures as of the end of the spell.
Source: Own calculations based on SIAB, 1975-2017.

Table 5 Labor Force Transitions into and out of Midijobs for Women by Region

	State of Origin		Destination State	
	West	East	West	East
Minijob	20.7	13.6	11.7	7.1
Midijob	12.3	12.3	5.9	6.1
Regular Work	26.2	26.4	34.9	35.6
Unemployed	6.3	11.5	6.7	12.3
Other	34.6	36.2	40.9	38.9
	100.0	100.0	100.0	100.0

Note: The table provides the distribution of states of origin for all new Midijobs started by women in West and East Germany and the distribution of all states of destination for women in Midijobs in West and East Germany.
Source: Own calculations based on SIAB, 1975-2017.

Table 6 Multinomial Logit Estimation: Destination at Exit from Midijob

	Minijob		Midijob		Regular Employment		Unemployment		Other States	
	AME	Std.Err.	AME	Std.Err.	AME	Std.Err.	AME	Std.Err.	AME	Std.Err.
Female	0.02	0.00 ***	0.01	0.00 ***	0.04	0.00 ***	0.01	0.00 ***	-0.08	0.00 ***
Age 17-24 (ref.)	-	-	-	-	-	-	-	-	-	-
Age 25-34	-0.02	0.00 ***	0.01	0.00 ***	0.07	0.00 ***	-0.01	0.00 ***	-0.06	0.00 ***
Age 35-44	-0.03	0.00 ***	0.02	0.00 ***	0.17	0.00 ***	0.01	0.00 ***	-0.16	0.00 ***
Age 45-54	-0.04	0.00 ***	0.02	0.00 ***	0.17	0.00 ***	0.02	0.00 ***	-0.17	0.00 ***
Age 55-64	-0.03	0.00 ***	0.02	0.00 ***	0.09	0.00 ***	0.03	0.00 ***	-0.10	0.00 ***
Age 65+	0.08	0.01 ***	0.00	0.00	-0.16	0.01 ***	-0.07	0.00 ***	0.16	0.01 ***
Educ: No Voc / Acad. (ref.)	-	-	-	-	-	-	-	-	-	-
Educ: Voc Train	-0.03	0.00 ***	-0.01	0.00 ***	0.07	0.00 ***	0.03	0.00 ***	-0.07	0.00 ***
Educ: Academic	-0.03	0.00 ***	-0.01	0.00 ***	0.07	0.00 ***	0.00	0.00	-0.03	0.00 ***
East German	-0.04	0.00 ***	0.00	0.00 **	-0.01	0.00 ***	0.04	0.00 ***	0.01	0.00 ***
Foreign	-0.01	0.00 ***	0.01	0.00 ***	-0.01	0.00 ***	-0.02	0.00 ***	0.03	0.00 ***
Occ: Agricultural (ref.)	-	-	-	-	-	-	-	-	-	-
Occ: Simple manual	0.00	0.01	-0.01	0.00	0.05	0.01 ***	0.00	0.01	-0.04	0.01 ***
Occ: Qualified manual	0.01	0.01	0.01	0.00	0.08	0.01 ***	-0.01	0.01 **	-0.08	0.01 ***
Occ: Technician	0.00	0.01	0.00	0.01	0.07	0.01 ***	-0.06	0.01 ***	-0.02	0.01
Occ: Engineer	0.02	0.01 ***	0.01	0.01	0.02	0.01	-0.06	0.01 ***	0.02	0.01 *
Occ: Simple services	0.04	0.01 ***	0.02	0.00 ***	0.09	0.01 ***	-0.03	0.01 ***	-0.12	0.01 ***
Occ: Qualified services	0.01	0.01	0.01	0.00 **	0.10	0.01 ***	-0.04	0.01 ***	-0.07	0.01 ***
Occ: Semiprofessional	-0.01	0.01 *	0.00	0.00	0.08	0.01 ***	-0.06	0.01 ***	-0.01	0.01
Occ: Professional	0.11	0.01 ***	0.03	0.01 ***	0.01	0.01	-0.08	0.01 ***	-0.07	0.01 ***
Occ: Simple clerk & admin.	0.03	0.01 ***	0.01	0.00 **	0.08	0.01 ***	-0.04	0.01 ***	-0.08	0.01 ***
Occ: Qualified clerk & admin.	0.00	0.01	0.00	0.00	0.07	0.01 ***	-0.05	0.01 ***	-0.02	0.01 **
Occ: Manager	0.00	0.01	-0.01	0.01 **	0.08	0.01 ***	-0.07	0.01 ***	0.00	0.01
Occ: Other	0.00	0.01	0.01	0.00 ***	0.03	0.01 ***	-0.02	0.01 ***	-0.02	0.01 **
Firm size 0-19 (ref.)	-	-	-	-	-	-	-	-	-	-
Firm size 20-99	0.01	0.00 ***	-0.01	0.00 ***	-0.03	0.00 ***	-0.03	0.00 ***	0.06	0.00 ***
Firm size 100-199	0.00	0.00	-0.01	0.00 ***	-0.05	0.00 ***	-0.03	0.00 ***	0.94	0.00 ***
Firm size 200-299	0.01	0.00 ***	-0.01	0.00 ***	-0.06	0.00 ***	-0.04	0.00 ***	0.10	0.00 ***
Firm size 300+	0.03	0.00 ***	-0.01	0.00 ***	-0.07	0.00 ***	-0.05	0.00 ***	0.11	0.00 ***
Ind: Agriculture (ref.)	-	-	-	-	-	-		-	-	-
Ind: Food Drink Tobacco	0.00	0.01	0.00	0.01	0.09	0.01 ***	0.01	0.01	-0.10	0.01 ***
Ind: Cons. Goods Production	0.03	0.01 ***	0.01	0.01	0.05	0.01 ***	-0.02	0.01 ***	-0.08	0.01 ***
Ind: Ind. Goods Production	-0.01	0.01 **	-0.01	0.00 **	0.06	0.01 ***	-0.02	0.01 ***	-0.02	0.01 *
Ind: Capital Goods Production	-0.01	0.00 **	0.00	0.00	0.03	0.01 ***	-0.04	0.01 ***	0.03	0.01 ***
Ind: Construction	0.00	0.01	0.02	0.00 ***	0.04	0.01 ***	-0.01	0.01	-0.05	0.01 ***
Ind: Trade Service Hotels Rest.	0.03	0.01 ***	0.02	0.00 ***	0.05	0.01 ***	-0.01	0.00	-0.08	0.01 ***
Ind: Logistics & Financ. Serv.	0.02	0.01 ***	0.03	0.00 ***	0.05	0.01 ***	0.00	0.00	-0.10	0.01 ***
Ind: Educ. Health Publ. Admin.	0.02	0.01 ***	0.01	0.00 ***	0.06	0.01 ***	-0.01	0.01 ***	-0.07	0.01 ***
Ind: Other	-0.04	0.01 ***	-0.01	0.01	-0.12	0.01 ***	-0.05	0.01 ***	0.21	0.01 ***
N					300,539					
Log Likelihood					-382268.08					

Notes: The sample excludes Midijob spells that were censored at the end of the observation period (Dec. 31, 2017) and uses 300,539 observations. The estimations control for calendar year fixed effects. The standard errors are robust and clustered at the person level. Not depicted are controls for missing values on the occupation, firm size and industry outcomes. All indicators are measured at the end of the spell.
Source: Own calculations based on SIAB, 1975-2017.

Institutional Appendix

(1) Retirement insurance contributions for Mini- and Midijobbers

Minijobs: Minijob employees do not have to contribute to social insurances. However, since 1999 individuals have the option to forgo the exemption from retirement insurance contributions (opt in). If Minijob employees contribute to the retirement insurance (the contribution rate is 3.6 percent of gross earnings), they can accumulate claims against the insurance in terms of contribution periods and contribution amounts. Only a very small share of Minijob employees used this option. Starting January 1, 2013 regulations were changed. Since then, the default is that workers are required to contribute to the retirement insurance. However, they can easily opt out of the requirement by notifying their employer.

Midijobs: Midijob employees pay social insurance contributions, however at a reduced rate. The subsidy consists of artificial deductions from their gross earnings prior to applying the standard social insurance contribution rates. The deduction amount declines as earnings increase from the Minijob earnings ceiling towards the Midijob earnings ceiling. Since Midijobs were introduced individuals had the option to forgo the subsidy on their contributions to retirement insurance and thus to pay retirement insurance contributions on their full earnings instead. The option was changed with the 2019 reform: since July 2019 the retirement insurance automatically credits workers with contributions on their full earnings even though they pay only the subsidized amount.

(2) Combination of different employment relationships

Minijobs: Workers can hold Minijobs as their main employment or as an add-on employment. If one or more Minijobs are held as main employment then the sum of earnings cannot exceed the Minijob earnings limit without losing the Minijob benefit. If the earnings from one employment exceed the Minijob earnings limit the job qualifies as a Midijob. If the earnings limit exceeds the monthly Midijob earnings limit the job is a regular, unsubsidized job.

Midijob: Workers are allowed to hold one Minijob in addition to a Midijob. If more than one Midijob is held the worker can no longer claim the Midijob subsidy. Since the 2019 reform more than one Midijob can be held as long as the total earnings are below the 1,300 Euro threshold.

Individuals in training or apprenticeships cannot benefit from the Midijob regulation for their training or apprenticeship earnings even if the monthly earnings are within the Midijob earnings range.

(3) Administrative treatment of Midijobs

Employers register their workers with social insurances and handle the transfer of contribution payments. When they notify a new or continuing employment relationship (annual notification) employers inform the unemployment insurance about the Midijob status of the worker using an indicator. The Midijob indicator can take on three different values:
value 0: Subsidy is not applicable or individual chooses to forgo the subsidy for the retirement insurance (the latter information was relevant 2003-2019). Midijob employments with value 0 are not considered in the aggregate statistics on Midijob employment because it is not certain that the Midijob subsidy is applied (e.g. if several employment relationships are held at the same time).

value 1: Subsidy is calculated, individual earns within in the subsidized Midijob earnings range.
value 2: Subsidy is calculated, individual employment includes periods with earnings outside of the Midijob earnings range, i.e., below the Minijob earnings ceiling, within the Midijob earnings range, and / or above the Midijob earnings ceiling. Here average earnings over the entire period are used to calculate appropriate contributions (*Mischfälle*).

Appendix Table A.1 Descriptive Statistics

Variable	N	Mean	Std. Dev.	Min	Max
Female	300,539	0.616	0.486	0	1
Age 17-24 (reference)	300,539	0.217	0.412	0	1
Age 25-34	300,539	0.298	0.457	0	1
Age 35-44	300,539	0.204	0.403	0	1
Age 45-54	300,539	0.170	0.376	0	1
Age 55-64	300,539	0.093	0.291	0	1
Age 65+	300,539	0.018	0.132	0	1
Educ: No voc Train (reference)	300,539	0.405	0.490	0	1
Educ: Voc Train	300,539	0.512	0.499	0	1
Educ: Academic	300,539	0.083	0.276	0	1
Foreign	300,539	0.193	0.395	0	1
East	300,539	0.218	0.413	0	1
Occ: Agricultural (reference)	300,539	0.022	0.147	0	1
Occ: Simple manual	300,539	0.092	0.289	0	1
Occ: Qualified manual	300,539	0.079	0.270	0	1
Occ: Technician / Engineer	300,539	0.023	0.149	0	1
Occ: Simple services	300,539	0.276	0.447	0	1
Occ: Qualified services	300,539	0.069	0.253	0	1
Occ: Semiprofessional	300,539	0.071	0.257	0	1
Occ: Professional	300,539	0.026	0.160	0	1
Occ: Simple clerk and admin.	300,539	0.155	0.362	0	1
Occ: Qualified clerk and admin.	300,539	0.128	0.334	0	1
Occ: Manager	300,539	0.011	0.105	0	1
Occ: Other	300,539	0.047	0.212	0	1
Firm size 0-19 (reference)	300,539	0.356	0.479	0	1
Firm size 20-99	300,539	0.248	0.432	0	1
Firm size 100-199	300,539	0.105	0.307	0	1
Firm size 200-299	300,539	0.053	0.224	0	1
Firm size 300+	300,539	0.188	0.390	0	1
Ind: Agriculture & Mining (ref.)	300,539	0.024	0.152	0	1
Ind: Food Drink Tobacco	300,539	0.017	0.131	0	1
Ind: Cons. Goods Production	300,539	0.012	0.108	0	1
Ind: Ind. Goods Production	300,539	0.023	0.149	0	1
Ind: Capital Goods Production	300,539	0.028	0.165	0	1
Ind: Construction	300,539	0.037	0.188	0	1
Ind: Trade Service Hotels Rest.	300,539	0.297	0.457	0	1
Ind: Logistics & Financ. Services	300,539	0.307	0.461	0	1
Ind: Educ. Health Publ. Admin.	300,539	0.197	0.397	0	1
Ind: Other	300,539	0.059	0.235	0	1

Source: Own calculations based on SIAB, 1975-2017.