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Welfare recipients' transition into employment and employment stability in Germany

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Abstract

While flexible labour markets offer employment opportunities for unemployed individuals, they might not foster stable employment. This paper studies the determinants of unemployed welfare recipients' transitions into employment and its stability in Germany. The analyses are based on an inflow sample of welfare recipients from large-scale administrative data and semi-parametric hazard models with individual-level frailty. Some labour market segments offer quick employment entry but not sustainable employment. While human capital is positively related to employment take-up and stability for both sexes, the role of several sociodemographic determinants differs by gender.

JEL CLASSIFICATION

C41; I30; J64

1 | INTRODUCTION

To fight high unemployment, the labour market in Germany—like the ones in other European countries—became less regulated during the past 25 years and gave room for non-standard forms of employment (Eichhorst and Tobsch, 2015; OECD, 2004). Non-standard employment such as fixed-term or temporary agency employment can offer additional employment opportunities in jobs that would not have been created in a world with only permanent jobs. Non-standard jobs might be more accessible for unemployed persons without good labour market prospects and could serve as a screening device and as a stepping-stone to permanent employment (Eichhorst, 2014). However, they could also just buffer fluctuations in labour demand. Furthermore, in a

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segmented labour market, the two segments of well-paid permanent employment on the one hand and low-quality short-term employment on the other hand might not be permeable. This could be the case if flexible jobs do not allow individuals to gain experience valuable for a job in the primary segment. Thus, individuals in the secondary labour market segment might cycle between temporary employment and unemployment, and flexible labour markets could entail short employment durations. The resulting employment interruptions can lead to scar effects on future employment opportunities (Gagliarducci, 2005) and increased poverty risks (Halleröd et al., 2015).

Besides deregulating labour market institutions, the German Hartz reforms in the early 2000s implemented the requirement for basically all welfare recipients to actively search for a job and accept any job offer, otherwise they risk benefit sanctions (Eichhorst et al., 2010; Jacobi and Kluge, 2007). About one million jobs are taken up by unemployed welfare recipients per year, but employment is often low-paid and instable (Bruckmeier and Hohmeyer, 2018). Therefore, in this paper we study not only the determinants of employment take-up of non-employed welfare recipients in Germany but also of its stability. We use a large sample of welfare recipients from administrative data covering the period from 2005 to 2014. We employ semi-parametric hazard models with individual-level frailty, and control for the correlation of unobserved heterogeneity in employment entries, welfare exits without employment (modelled as competing risks) and employment stability. As labour markets are gender-segmented, we investigate this separately for men and women (Leschke, 2009). To capture aspects of the labour market segments, we control for several firm and job characteristics. Our comprehensive determinants furthermore comprise human capital, individual socio-demographic and household characteristics and the labour market context. As institutions are constant in our setting, we do not consider any institutional determinants. We rather provide broad, descriptive evidence on promoting as well as obstructive factors for stable employment of welfare recipients in order to provide starting points for policy makers to facilitate stable employment.

We find that overall, some employment segments, such as temporary agency employment and agriculture, forestry and fishing, offer quick employment entry but not sustainable employment. Positive correlations of recent labour market experience with employment take-up and to some extent with its stability indicate that it is important for welfare recipients to have the opportunity to gain employment experience, thus for the labour market to remain receptive. Policies should be developed to help former welfare recipients to move on to more sustainable jobs after entering instable employment. Moreover, we find important differences between women and men in determinants of employment uptake and stability. For instance, the role of age for employment stability is opposite for women and men, with the most instable jobs among young women and older men. Future research could determinate to what extent these findings relate to problems of work–family reconciliation on the one hand, and difficulties performing physically strenuous jobs at older ages on the other, which would indicate a need both for specialised work–family policies and for retraining options at advanced ages. In contrast, education is positively related to both fast employment entries and more stable jobs, for men as well as women, indicating the importance of human capital investments.

Thus far, little research exists on the correlates of employment take-up and stability for welfare recipients in Germany. This article closes this gap, providing evidence that can be a reference for devising and debating policies for welfare recipients with particular employment difficulties. It also aids in putting into context the costs and benefits of policies promoting quick employment in sectors providing low employment stability.

2 | INSTITUTIONAL BACKGROUND

Encouraging jobless individuals to take up employment has been a major policy concern in the past three decades (European Commission, 1999; OECD, 1994). High and persistent unemployment also gave rise to comprehensive labour market reforms in Germany (Eichhorst et al., 2010). During the past 25 years, the German labour market—like the ones in other European countries—gave room for non-standard forms of employment (Eichhorst and Tobsch, 2015; OECD, 2004). The German Hartz reforms in the early 2000s deregulated labour market institutions (Eichhorst et al., 2010; Jacobi and Kluge, 2007). In 2005, the last step of the Hartz reforms merged the former unemployment assistance and social assistance to form a new means-tested welfare benefit (Unemployment Benefit II, UBII) paid to households with insufficient means with at least one member capable of working. Between 2007 and 2019, on average 4.5 million working-age individuals (8.4 per cent of the working-age population) received UBII (Statistics Department of the Federal Employment Agency, 2020). Of these, on average 72.4 per cent were not employed (Statistics Department of the Federal Employment Agency, 2021). Basically, all working-age welfare recipients are required to actively search for a job and accept any job offer, otherwise they risk benefit sanctions. The welfare recipient has to accept the job offer even if the occupation, required educational level, working conditions or commuting distance change for the worse compared to previous jobs (Arbeitskammer des Saarlandes, 2019).

The conditionality of the system is reflected in substantial labour force participation of welfare recipients with about 1 million contributory jobs taken up by jobless welfare recipients each year (Bruckmeier and Hohmeyer, 2018). While contributory employment with monthly earnings above €450, which are subject to social security contributions, is the most common employment type for welfare recipients, many welfare recipients also take up or hold a marginal job with monthly earnings up to €450 (up to €400 until 2012) that are not subject to social security contributions. As benefit recipients can earn €100 per month without benefit reductions, these marginal employment relations often involve only very few hours of work a week, with earnings often up to the 100€ limit for monthly earnings not set off against benefit payments.¹

Employment taken up by jobless welfare recipients is often situated in the secondary segment of the labour market. In 2013, one-third of the contributory jobs taken up by jobless welfare recipients were situated in the sectors of temporary work agencies and other services (Bruckmeier and Hohmeyer, 2018). Almost half of the contributory jobs taken up by jobless welfare recipients lasted less than 6 months. For 45 per cent of the welfare recipients, the job taken up was at least the fifth contributory job in the past 5 years. Apparently, a group of individuals exists cycling between unemployment and employment. About 80 per cent of the full-time jobs were low-paid. Consequently, only a good half of the individuals who took up a job left benefit receipt for at least 1 month.

The UBII system follows the principle of gender-neutrality and encourages an adult worker model of the family because all welfare recipients should be available for the labour market. However, in practice, there are considerable gender differences. Women in partnerships have lower probabilities of being activated than single women (Kopf and Zabel, 2017) and of taking up employment than men in partnerships or single men or women (Bähr et al., 2020). Potential reasons lie in traditional gender role attitudes, childcare duties and availability of external childcare. Welfare recipients can be exempted from the requirement to search for a job if they participate in education or training or care for small children or elder relatives. Care duties mainly concern women on welfare. Furthermore, the German tax system and public health insurance

still encourages single breadwinner households, particularly for individuals with low earnings potentials.

3 | THEORETICAL CONSIDERATIONS AND PREVIOUS EVIDENCE

During the past 25 years, forms of non-standard employment have increased in Germany (Eichhorst and Tobsch, 2015). Flexible employment can offer additional employment perspectives in jobs that would not have been created otherwise. Ideally, in these jobs, individuals instead of being unemployed can gain labour market experience, avoid human capital depreciation and poverty (Eichhorst, 2014; Schnabel, 2016). Furthermore, these jobs can serve as screening devices and stepping stones towards permanent employment. The German labour market is divided into two segments: one primary segment with stable and better-paid employment and one flexible segment with low-paid and temporary jobs (Eichhorst and Kendzia, 2016). These segments are not completely permeable. For example, flexible jobs that comprise low-skilled jobs might not allow individuals to gain experience valuable for a job in the primary segment. Thus, individuals employed in the secondary segment might not enter the primary segment, but cycle between temporary employment and unemployment. Flexible labour markets could thus be more accessible in the sense that unemployed people more easily find a job, but they do not necessarily provide sustainable employment perspectives to them. As described in the previous section, welfare benefit recipients in Germany are strongly pressured to quickly take up any type of employment. Thus far, however, little empirical evidence exists on the role flexible segments of the labour market play for German welfare recipients' employment opportunities and employment sustainability.

Working in the service sector or in a temporary agency job or with low earnings (due to low wages or few working hours) might be indicators for the flexible segment, which might be accessible but does not offer long-term employment (Eichhorst et al., 2017). Recalls to previous employers might indicate seasonal employment with less stable employment relationships. Workers in the fields of manufacturing or construction in contrast more often belong to the core workforce, where transitions thus might be slower but employment more sustainable (Eichhorst and Kendzia, 2016). Previous empirical evidence supports the theoretical expectation that jobs in the service sector (particularly temporary agency work) are less stable than in other sectors (Giannelli et al., 2016; Horny et al., 2012; Nagore García and van Soest, 2017; van Berkel, 2007). Nevertheless, temporary agency work can have positive stepping-stone effects on post-unemployment employment outcomes (Jahn and Rosholm, 2014).

Part-time employment has an ambiguous role as a voluntary or involuntary solution, which is reflected in the mixed evidence on its stability. While Nagore García and van Soest (2017) find that part-time employment is more stable, Giannelli et al. (2016) find this only for women and the opposite for men. Horny et al. (2012) in contrast find higher separation rates for part-time jobs. With respect to wages and earnings, findings are that higher previous earnings result in higher reemployment rates (Gangl, 2004), whereas higher wages in the present job are associated with higher stability (Boockmann and Steffes, 2010; Frederiksen, 2008; Nagore García and van Soest, 2017).

Small firms more often offer jobs in the secondary segment, which might be less stable (Eichhorst and Kendzia, 2016). Moreover, working in a small firm might offer less stable employment due to smaller internal labour markets. Previous evidence confirms a positive relationship between firm size and job stability (Frederiksen, 2008; Nagore García and van Soest, 2017).

The German labour market is also segmented with respect to gender. First, according to Becker's New Home Economics approach (1985, 1993), households can maximise their collective utility through a specialisation on market and non-market work according to the principle of comparative advantages. A gender-specific division of labour could result from lower market wages for women or socialisation-induced advantages in domestic work. Thus, unemployed women might specialise in domestic work and might return to the labour market less often. An alternative line of argumentation sees a gender-specific division of labour as resulting directly from socialisation and societal gender role expectations, even where this does not maximise household utility (Budig et al., 2012). Institutional settings such as tax benefits for couples with unequal earnings, as in Germany, further contribute to explaining gender-specific divisions of labour. As a result of lower labour market participation and longer employment interruptions to care for children, women gain less employment experience than men, which diminishes their long-term employment prospects (Ziefle, 2004). Second, men and women work in different types of jobs (Frederiksen, 2008; Hägglund and Bächmann, 2017). For example, the occupational choice approach of Polachek (1981) states that women are more likely to choose occupations with low opportunity costs in the event of career interruptions, as they are more family-oriented than men are. Empirical research shows that while such utility considerations partly explain gender-typical curricular choice, direct influences of socialisation play a similarly important role for gender-specific occupational preferences (Gabay-Egozi et al., 2015). Furthermore, the theory of statistical discrimination (Arrow, 1973; Phelps, 1972) assumes that employers a priori have only incomplete information about the productivity of individuals. Based on stereotypes and previous experiences, they believe that the marginal productivity within a given task differs between men and women (Bielby and Baron, 1986). Accordingly, employers attribute some jobs to women and others to men.

Previous empirical studies regarding re-employment opportunities and job stability confirm different results for men and women. Men are more likely to re-enter employment (Hägglund and Bächmann, 2017; Jacob and Kleinert, 2014; Nagore García and van Soest, 2017). The evidence for employment stability is mixed: While some studies find that the jobs are more stable for men (Frederiksen, 2008; Nagore García and van Soest, 2017; Wulfgramm and Fervers, 2015), Horny et al. (2012) and Giannelli et al. (2016) find opposite results: job stability for women compared with men is higher.

Gender differences are likely to be particularly evident for multi-adult households, because specialisation on market and non-market work takes place in couple and family households and not in single households. In general, larger households with children could have higher reservation wages (i.e. the lowest wage at which they are willing to accept a job), as larger households have a higher income threshold above which they are no longer eligible for welfare benefits, which are paid at the household level. According to the basic job search model, the reservation wage and the arrival rate of job offers (i.e. the probability of receiving a job offer) determine the unemployment duration of job searchers. Factors that increase the reservation wage lead to longer unemployment durations and slower transitions into employment, whereas the opposite applies to factors increasing the arrival rate of job offers. The household effects could be stronger for women: Women with children or a partner may more often opt out of the labour market and specialise on non-market work. In summary, individuals (particularly women) from larger households with children or a partner may leave unemployment more slowly. This is confirmed by empirical evidence: Jacob and Kleinert (2014) find that men with a partner leave unemployment more quickly, whereas women take up a job more slowly if they are married. Individuals, in particular women, with young children are less likely to find a job (Hägglund and Bächmann,

2017; Nagore García and van Soest, 2017), while individuals with more children are more likely to leave unemployment (Tatsiramos, 2009). Accordingly, they could be less selective in choosing a job, implying a worse job match that may be less stable. Job stability is higher for individuals with children (Nagore García and van Soest, 2017)—or only for men and not for women as Frederiksen (2008) finds.

Thus, the role of labour market segmentation for employment uptake and stability should best be studied separately for men and women. However, no such previous evidence exists for welfare recipients in Germany.

In addition to the impact of labour market segments and its interaction with gender, further individual characteristics might affect the reservation wage and the arrival rate of job offers and thus employment take-up and its stability. As one such factor, the level of human capital is likely to affect employment take-up and stability. Individuals with higher levels of education and with recent employment experience may have a higher reservation wage implying a slower transition into employment. However, they may also benefit from a higher arrival rate of job offers, leading to a faster transition into employment. Individuals with good labour market opportunities might be more likely to obtain a better job match, which in turn can also be expected to be more stable (Becker, 1994; Jovanovic, 1979). Previous studies show that higher education and previous employment experience accelerate re-entry into employment (Gangl, 2004; Hägglund and Bächmann, 2017; Nagore García and van Soest, 2017; Tatsiramos, 2009; Wulfgramm and Fervers, 2015) and are also associated with higher employment stability (Boockmann and Steffes, 2010; Gangl, 2004; Horny et al., 2012; Nagore García and van Soest, 2017; Tatsiramos, 2009; Wulfgramm and Fervers, 2015). Likewise, unemployment duration is negatively related to job finding prospects and job stability (Boockmann and Steffes, 2010; Gangl, 2004; Giannelli et al., 2016; Jacob and Kleinert, 2014; Tatsiramos, 2009).

Several further aspects affect employment take-up and stability, including sociodemographic characteristics such as age (Boockmann and Steffes, 2010; Frederiksen, 2008; Hägglund and Bächmann, 2017; Horny et al., 2012; Nagore García and van Soest, 2017; Tatsiramos, 2009; Wulfgramm and Fervers, 2015) and nationality (Nagore García and van Soest, 2017). The labour market context also affects job finding opportunities and stability. For example, transition rates from unemployment to employment and job stability are lower in regions with high unemployment rates (Nagore García and van Soest, 2017; Tatsiramos, 2009).² Furthermore, digital technologies may substitute routine tasks implying lower employment opportunities and stability for those working in jobs with routine task content. First empirical evidence suggests that job finding prospects are lower for employees previously working in such jobs (Schmidpeter and Winter-Ebmer, 2018).

Overall, previous evidence shows that the labour market segment shapes employment take-up as well as its stability, which thus have to be considered together. Due to a gender-segmented labour market, the analyses need to be conducted separately for men and women. Moreover, employment take-up and stability are affected by various factors, such as human capital, household composition and labour market context, which need to be considered. This article contributes a systematic analysis of the relevance of such factors for welfare recipients' employment opportunities in Germany, comparing men and women. It cannot be assumed a priori that findings for other population groups are necessarily transferrable to welfare recipients. For instance, employment stability may be generally low for former welfare recipients, with little influence of the sector of employment. The extent to which the sector of employment influences employment stability specifically for welfare recipients has important policy implications concerning the role of work-first policies.

4 | DATA AND METHOD

4.1 | Data

We use administrative data from the Sample of Integrated Welfare Benefit Biographies (SIG) based on jobcentre records and notifications sent by employers to health and pension insurance funds (Bruckmeier et al., 2020 provide a description of the scientific use file). The SIG comprises a 10 per cent sample of welfare recipients between 2005 and 2014. The data contain detailed information about sociodemographic, individual and household characteristics, past and current welfare receipt, marginal and contributory employment, unemployment and participation in activation programmes. We merge information on the main tasks performed during employment according to Dengler et al. (2014) and on the regional labour market situation at district level from the Department for Statistics of the German Federal Employment Agency and the INKAR database of the Federal Institute for Research on Building, Urban Affairs and Spatial Development.

Our sample consists of individuals who were without employment and simultaneously received UBII for at least one episode starting between 2007 and 2012. We restricted the sample to individuals aged 25–57 years. Younger individuals are often still in training and may have not yet entered the labour market. We exclude individuals over 57 years of age, because individuals who turned 58 before the year 2008 were exempted from job search requirements. We organised the data in episode format. Each sample member can have several episodes as a non-employed UBII recipient. We take all episodes into account that begin at least one month after the end of the sample member's previous episode. We observe episodes up until the end of 2014. Thus, we can observe each welfare recipient for at least 2 years after entry. This leaves us with a sample including 237,535 women and 271,237 men, for whom we observe 419,195 and 531,340 welfare episodes. Of these, 96,655 women and 151,408 men enter contributory employment with 134,523 and 240,592 subsequent contributory employment episodes. As competing risks, we model transitions from welfare into minor employment (113,579 transitions for women and 115,800 for men), and transitions out of welfare without a job (129,929 transitions for women and 132,147 for men). Concerning exits from the contributory jobs that were taken up, we observe 107,240 job exits for women and 204,327 job exits for men (Table A2 (women) and Table A3 (men)).

4.2 | Method

We estimate three semi-parametric hazard models using a competing risks approach to analyse transition rates out of the initial state of non-employed welfare receipt into contributory employment, into marginal employment or out of welfare receipt without a job, respectively (Steele et al., 2004). For each transition type, our models control for individual-level frailty (unobserved heterogeneity) by explicitly estimating the standard deviation of the error term. A normal distribution is assumed for the error term, which is approximated by numerical integration (Lillard and Panis, 2003). Within the competing risks approach, we control for correlations of unobserved heterogeneity between all parallel processes. These competing risks estimates allow to control for increasing selectivity at longer episode durations, as unobserved characteristics drive individuals to exit the initial state into any of the three possible destination states.

As a fourth process, we additionally analyse exit rates from the contributory employment that was taken up, and control for the correlation of unobserved heterogeneity in this process with

the heterogeneity terms in the other three processes. Again, a normal distribution is assumed for the error term, approximated by numerical integration. Thus, similar to a timing-of-events approach (Abbring and van den Berg, 2003b), we control for selectivity in entering contributory employment, so as to obtain unbiased estimates of durations of contributory employment. The employment duration is measured in days and defined as continuous contributory employment (interruptions of up to two days and change of firm or job is possible). Episodes are censored at the end of the observation period in December 2014 as well as when individuals reach legal retirement age or are no longer considered capable of employment. We estimate separate models for men and women because impacts of partner and household characteristics have been shown to differ by gender.

The following four equations represent the four parallel processes covered by our model:

$$\ln h_{ij}^C(t_1) = y^C(t_1) + \sum_{k=1}^l \beta_k^C x_{ijk}(t_1) + \varepsilon_i^C,$$

$$\ln h_{ij}^M(t_1) = y^M(t_1) + \sum_{k=1}^l \beta_k^M x_{ijk}(t_1) + \varepsilon_i^M,$$

$$\ln h_{ij}^W(t_1) = y^W(t_1) + \sum_{k=1}^l \beta_k^W x_{ijk}(t_1) + \varepsilon_i^W,$$

$$\ln h_{ij}^{XC}(t_2) = y^{XC}(t_2) + \sum_{k=1}^m \beta_k^{XC} x_{ijk}(t_2) + \varepsilon_i^{XC}.$$

In the first equation, the log transition rate into contributory employment from welfare is represented by $\ln h_{ij}^C(t_1)$, where the duration since the start of the welfare episode is given by t_1 . The log transition rate into minor employment from welfare is given by $\ln h_{ij}^M(t_1)$ in the second equation and the log transition rate out of welfare receipt without taking up a job by $\ln h_{ij}^W(t_1)$ in the third equation. In the fourth equation, $\ln h_{ij}^{XC}(t_2)$ gives the log transition rate out of the contributory jobs that were taken up, where t_2 is the duration since the start of the contributory job.

Our hazard models specify the baselines, represented by $y^C(t_1)$, $y^M(t_1)$, $y^W(t_1)$ and $y^{XC}(t_2)$, respectively, as piece-wise linear splines. A general interpretation of the gradient estimates for each spline segment is that they indicate whether the log baseline hazard rises or decreases over a given segment of process time.

Our set of covariates is represented by $x_{ijk}(t)$ in each equation. The individual-level error terms in the four equations are represented by ε_i^C , ε_i^M , ε_i^W and ε_i^{XC} . Our model additionally estimates correlations between the error terms in each equation, which we report in Tables A2 and A3. In our equations, the index i is person-specific, and the index j is specific to an episode. We include all of a sample member's episodes of non-employment with UBII receipt during the observation period and all immediately succeeding contributory employment episodes with durations of at least 7 days. Thus, each sample member can have several episodes of each type, which facilitates the identification of the model (Abbring and van den Berg, 2003a). For our estimations, we use the statistical software package aML (Lillard and Panis, 2003). Table A2 (women) and

Table A3 (men) show the complete results of our estimates for all four parallel processes, including the standard deviations of the heterogeneity distribution and the corresponding correlation coefficients.

Our main theoretical focus is on contributory employment, because marginal employment relations taken up by UBII recipients often involve only very few hours of work a week. As our theoretical considerations and hypotheses thus apply to contributory employment alone, we discuss only these results and show them in Table 1 as an excerpt of our complete results. Entries into marginal employment and exits from UBII without a job are modelled as competing risks only for the purpose of controlling for the correlation of unobserved heterogeneity between the three processes (see Table A2 and A3 for the complete estimation results).

We include a broad spectrum of variables in all of our models. To control for labour market segments, we include firm and job characteristics: the economic sector of the last (current when studying employment stability) job as well as the employment status of the last job. For employment stability, we additionally control for characteristics of the present job: coincidence with leaving welfare receipt, monthly earnings, recall to previous employer, job subsidy and firm size. To capture human capital, we control for school and vocational degree, whether the individual was ever employed in the past and duration since the last job. Duration since the last job at entry into the regarded process is included not only in the model for employment entry, but also in the model for subsequent employment stability. This variable has an important function in the model for employment stability, as it provides a possibility to control for the duration of the job finding process. We highlight the findings for this variable in our discussion of the results, to indicate whether quicker employment take-up is related to more stable or less stable subsequent jobs. Finally, we control for the following further factors: As individual sociodemographic variables, we include age, citizenship, residency in Eastern Germany and if the individual is disabled. As household characteristics, we consider the age and number of children as well as partnership status. The labour market context is measured by the regional ratio of open positions to unemployed individuals, the regional unemployment rate and the share of long-term unemployment, measured on a yearly basis. To capture the impacts of digital transformation, we include the main task of the last (present) job.

5 | RESULTS

5.1 | Descriptive evidence

Figure 1 shows cumulative probabilities for the sample members' transitions out of jobless welfare receipt during the observation period into a contributory or marginal job or for leaving welfare receipt without a job. After 1 year, 37 per cent (25 per cent) of the male (female) sample members had taken up a contributory job, 17 per cent (20 per cent) had taken up a marginal job and 17 per cent (21 per cent) had left welfare receipt without a job. This result underlines the importance to account for marginal jobs and UBII exits as competing risks.

Figure 2 shows the probabilities of remaining in the contributory employment that was taken up. After 1 year, 42 per cent of the female sample members are still employed as are 34 per cent of the male sample members. The median employment duration is 272 days for women and 184 days for men.

Overall, these results show that female welfare recipients stay in non-employed welfare receipt longer than men. However, once they find employment, it is more stable than for men.

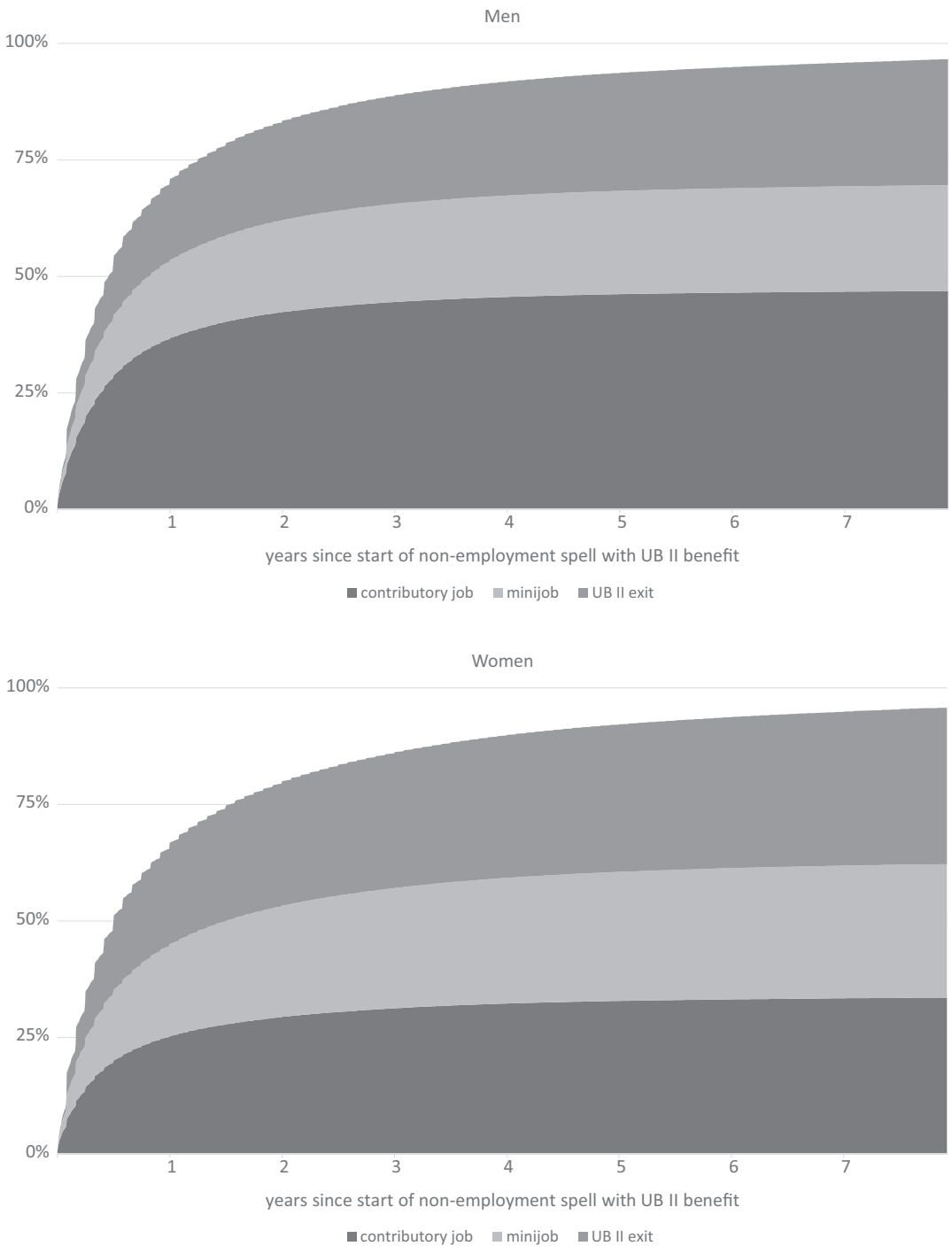


FIGURE 1 Cumulative probability of job entry by job type, or UBII exit without a job by gender

Source: SIG.

Regarding descriptive information on the sample members, we find that about 80 per cent are German citizens (Table A1). About one fourth of the sample members has no vocational degree. A good half finished working in their previous job within the last month. With respect to

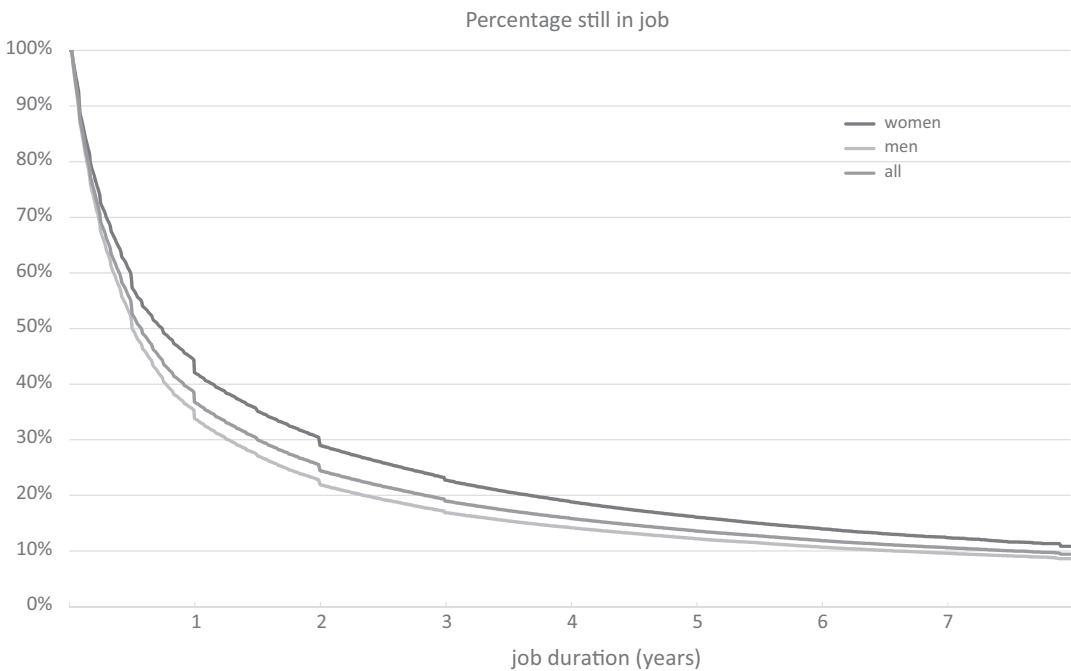


FIGURE 2 Employment stability

Source: SIG.

contributory jobs taken up by women in our sample, the main economic sectors are temporary agency employment (16 per cent), human health and social work activities (16 per cent), other services (14 per cent) and wholesale and retail trade (13 per cent). For men, the most important sectors are temporary agency employment (29 per cent), construction (12 per cent) and other services (11 per cent). About one-quarter of those who take up contributory employment leave UBII receipt within 1 month after employment started, indicating an income high enough to surpass the UBII threshold. More than half are single and half of the women and 70 per cent of the men do not have children in their household.

5.2 | Main results

Table 1 displays gender-specific results for selected determinants of contributory employment take-up (columns 1 and 2) and of employment stability for those who found a contributory job (columns 3 and 4) (Tables A2 and A3 in the Appendix display full estimation results, including all competing risks and correlations of unobserved heterogeneity). Each of these tables presents log hazard ratios: positive values indicate a faster transition either from non-employment to employment or from employment back to non-employment, i.e. less stable employment. Negative values indicate a slower transition either from non-employment to employment or from employment back to non-employment, i.e. more stable employment.

Concerning employment characteristics, we expected that jobs in the secondary segment of the labour market would more easily offer employment opportunities for welfare recipients, but without necessarily offering sustainable employment opportunities. We expected this to hold for

TABLE 1 Log hazard ratios of entering and leaving contributory employment

	Entry into contributory employment		Exit from contributory employment	
	Women	Men	Women	Men
Labour market segments				
Sector of last/present job (reference: wholesale & retail trade, repair of motor vehicles & motor cycles)				
Agriculture, forestry & fishing	0.1473***	0.2248***	0.5303***	0.3948***
Mining & quarrying, electricity, gas, steam & water supply	0.0052	0.0704***	0.0064	0.2113***
Manufacturing	0.0597***	0.0992***	-0.0616***	-0.0060
Construction	-0.1365***	0.1876***	0.0278	0.3600***
Transport & storage	-0.0093	0.2097***	0.0393	0.0299**
Accommodation & food service activities	0.0203	0.0098	0.1531***	0.0217
Information & communication	-0.0374	-0.0469**	0.2012***	0.1147***
Financial & insurance activities	0.0763*	-0.082*	-0.0932*	-0.0613
Real estate activities, professional, scientific & technical services	-0.0522***	-0.0488***	-0.0872***	-0.0635***
Other services (w/o temporary agency employment)	-0.0323**	0.0601***	0.0989***	0.1943***
Temporary agency employment	0.2048***	0.2622***	0.6066***	0.5724***
Public administration & defence; compulsory social security; activities of extraterritorial organisations & bodies	0.0505**	-0.105***	-0.0419	0.0468*
Education	-0.1275***	-0.1568***	0.0303	0.2540***
Human health & social work activities	0.0135	-0.137***	-0.2732***	-0.2092***
Other service activities; activities of households as employers	-0.1112***	-0.1091***	-0.0367*	0.0699***
Missing	-0.3807***	-0.3673***	-0.1236	-0.1757
Employment status of last job (reference: contributory job)				
Marginal employment	-0.4215***	-0.2767***	0.0173*	-0.0123*
Training	-0.0910***	-0.0152	-0.0877***	-0.1011***
Other	-0.2540**	0.2880***	0.5779***	0.6664***

(Continues)

TABLE 1 (Continued)

	Entry into contributory employment		Exit from contributory employment	
	Women	Men	Women	Men
Leaving UBII receipt within 1 month after employment start			-0.1523***	-0.1541***
Monthly earnings in €, deflated to 2010 price levels (reference: <1000)				
1000–1250			-0.3608***	-0.5017***
>1250			-0.4289***	-0.6969***
Recall to same firm within 3 years since last job			0.1492***	-0.0433***
Subsidised employment			-0.1728***	-0.2839***
Firm size: number of employees (reference: 1–10)				
11–50			0.0044	-0.0237***
51–200			-0.0343***	-0.1249***
>200			-0.1202***	-0.2542***
Missing			0.1649***	0.1706***
Human capital				
School degree (reference: no degree)				
Lower secondary	0.0820***	0.0518***	0.0271	0.0183*
Intermediate secondary	0.2103***	0.1116***	-0.1241***	-0.1205***
Upper secondary (qual. for tech. college)	0.2866***	0.1594***	-0.1746***	-0.2236***
Upper secondary (qual. for university)	0.3318***	0.0975***	-0.1535***	-0.2487***
Missing	0.2514***	0.1848***	-0.1945***	-0.1871***
Vocational degree (reference: no degree)				
Vocational degree	0.3125***	0.2612***	-0.1095***	-0.0611***
Vocational school degree	0.4117***	0.2745***	-0.0656***	-0.0887***
Upper vocational school degree	0.3659***	0.3696***	-0.0678***	-0.0797***
Tech. college degree	0.5616***	0.4344***	-0.1824***	-0.1866***
University degree	0.4738***	0.3454***	-0.0897***	-0.0579***
Missing/other	-0.1133***	0.0817***	-0.0589**	-0.0850***
Never employed (measured since 1993)	-1.8730***	-1.4463***	0.0622*	0.1277***
Duration since last job (reference: 1–<3 months)				
<1 month	0.1560***	0.1136***	-0.0916***	-0.0333***
3–<6 months	-0.2694***	-0.2723***	0.0015	0.0212**
6–<12 months	-0.4202***	-0.4509***	-0.0121	0.0576***
1–<2 years	-0.6537***	-0.6806***	-0.0931***	0.0041

(Continues)

TABLE 1 (Continued)

	Entry into contributory employment		Exit from contributory employment	
	Women	Men	Women	Men
2-<4 years	-0.8143***	-0.9074***	-0.0643***	0.0042
4+ years	-1.0365***	-0.973***	0.0127	0.0562***
Individual socio-demographic characteristics				
Age in years (reference: 30-<35)				
25-<30	0.0490***	0.1221***	0.0790***	0.0267***
35-<40	0.0454***	-0.1225***	-0.0625***	-0.0013
40-<45	0.0565***	-0.2385***	-0.0815***	0.0206**
45-<50	-0.0815***	-0.3812***	-0.0472***	0.0546***
50-<55	-0.2983***	-0.5767***	-0.0513***	0.0604***
55-<57	-0.6179***	-0.8506***	-0.0360	0.1114***
Citizenship (reference: German)				
Turkish	-0.2890***	0.0234**	-0.0276	-0.0627***
Northern European	-0.1608***	-0.0880***	0.1785***	0.1315***
Southern European	-0.0165	0.1088***	0.0338	0.0417**
Eastern European	-0.1215***	0.0343**	0.0091	0.0105
Russian	-0.2660***	-0.0006	-0.1286***	-0.1726***
African	0.0809***	0.2461***	0.1726***	0.0873***
South American	-0.0494	0.0821	0.2194***	0.0508
Asian	-0.3693***	-0.0309**	-0.0877***	-0.1029***
North American	0.0727	0.0298	0.2903**	0.2448***
Missing/other	-0.2515***	-0.0293	0.1786**	0.0926**
Residency in eastern Germany	0.1719***	0.1393***	-0.1209***	-0.1964***
Disabled (reference: no)				
Yes	-0.4434***	-0.4126***	0.0997***	-0.0007
Missing	0.0781***	0.0534***	-0.0960***	-0.1095***
Household characteristics				
Age of the youngest child in years (reference: no children)				
0-2	-0.4426***	-0.0239**	-0.2851***	-0.0897***
3-6	-0.2581***	0.0119	-0.1305***	-0.1262***
7-14	0.0136	0.0455***	-0.1804***	-0.1212***
15-17	0.1288***	0.0814***	-0.1168***	-0.0912***
Number of children (reference: 1)				
2	-0.0243**	0.0161	-0.0448***	-0.0241**
3	-0.1795***	-0.033**	0.0280	-0.0113
4+	-0.4192***	-0.1176***	0.2867***	0.0427*

(Continues)

TABLE 1 (Continued)

	Entry into contributory employment		Exit from contributory employment	
	Women	Men	Women	Men
Partnership status (reference: single, never married)				
Single, ever married	-0.0445***	0.0692***	0.0495***	0.0108
Cohabiting	-0.1112***	0.2394***	0.0300	-0.0551***
Married	-0.1753***	0.3461***	-0.0693***	-0.2162***
Partner, marital status unknown	-0.0536***	0.2820***	-0.0282	-0.0807***
Missing	-0.0579***	0.1930***	-0.0936***	-0.1240***
Labour market context				
Ratio of open positions to unemployed	0.0071***	0.0096***	-0.0008	-0.0034***
Unemployment rate	-0.0229***	-0.0213***	0.0177***	0.0120***
Share of long-term unemployment	-0.0010**	-0.0019***	-0.0032***	-0.0040***
Main task of last/present job (reference: non-routine analytical)				
Non-routine interactive	0.0137	-0.0795***	0.0635***	0.1184***
Routine cognitive	-0.0077	-0.0406***	-0.0547***	0.0654***
Routine manual	-0.0241	-0.0044	0.2792***	0.2915***
Non-routine manual	-0.0282*	-0.0095	0.0640***	0.2636***
Missing	-0.0882***	-0.0892***	0.1313***	0.2273***
Constant	-6.0121***	-5.8485***	-5.6583***	-5.5000***
Baseline: piece-wise linear spline. Gradient of the log hazard (per day) over indicated years of process time				
0-<0.5	-0.0037***	-0.0021***	-0.0001	0.0009***
0.5-<1	-0.0016***	-0.0018***	-0.0025***	-0.0030***
1-<2	-0.0008***	-0.0010***	-0.0006***	-0.0008***
2-<4	-0.0004***	-0.0007***	-0.0006***	-0.0009***
4-<6	-0.0007***	-0.0008***	-0.0001**	-0.0001
6+	-0.0002	-0.0004*	-0.0003	-0.0004**
Individuals	237,535	271,237	96,655	151,408
Episodes	419,195	531,340	134,523	240,592
Transitions	135,405	242,214	107,240	204,327

Note: All episodes in observation period. Results from piecewise-linear exponential hazard model with individual-level frailty, controlling for the correlation of unobserved heterogeneity in employment entries, welfare exits without employment and employment stability. Further control variables: quarter of episode start, year of episode start, order of episode, duration of UIBI receipt in 2 years before episode start in years and duration of UIB receipt in 2 years before episode start in years. For full tables, see Appendix Tables A2 and A3.

Significance levels: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: SIG.

service sectors or sectors with a large share of seasonal employment (e.g. accommodation and food services, construction, agriculture). Our results show that women and men who previously worked in the sectors of temporary agency work, agriculture, forestry and fishing, and for men also in transport and storage and construction enter a new job faster than those who previously worked in the sector of wholesale and retail trade, repair of motor vehicles and motor cycles. If individuals tend to stay in the same economic sector, this indicates that jobs in these sectors are more easily available. The economic sector of the job taken up determines employment stability: working in temporary agency employment is associated with higher transition rates from employment back to non-employment. A shorter employment duration can also be found for the sectors agriculture, forestry and fishing, other services and information and communication. For men, this also holds for several other sectors, such as construction, mining and carrying and transport and storage. Several of these sectors show a large share of seasonal work. In contrast, employment is more stable in the health and care sector and in real estate activities, professional, scientific and technical services. In summary, those economic sectors that more easily offer employment opportunities for welfare recipients do not necessarily offer sustainable employment. Furthermore, employment associated with benefit exits, with higher monthly earnings, and in larger firms is more stable. The same holds for employment with the same employer as the previous job. This is against our expectation that recalls might be less stable as they might indicate employment in the secondary segment. Apparently, the new hiring might indicate a certain minimum level of match quality between employee and employer.

Altogether, labour market segments play a relevant role for welfare recipients' employment stability. Some sectors which might be particularly conducive to work-first policies, like temporary agency employment, are associated with low employment stability.

Our results concerning human capital are in line with theoretical expectations and previous evidence: Having a school degree or a vocational degree is associated with quicker employment entry and more stable employment for both men and women. The results show a faster employment entry and more stable employment for individuals with recent employment experience. Those without a previous job enter employment more slowly and take up less stable employment than those with employment experience. With respect to the relationship between the duration since the last job and employment stability, the results are less clear-cut: For men, employment stability tends to be lower for higher durations since the last job. However, men who have been unemployed for 1–4 years are as stably employed as men with a duration of 1–3 months since the last job. In contrast, we see no clear negative relationship with employment stability for women. Women who have not worked for 1–4 years show a higher employment stability than women whose last job ended 1–3 months ago. Possibly, a shorter duration since the last employment indicates that the individuals more frequently switch between employment and unemployment and work in segments of the labour market with short employment durations. For women, longer periods of inactivity could indicate longer periods of child rearing due to a shortage of external care options.

As expected, several determinants differ by gender. First, differences in the role of household characteristics reflect a gender-specific division of labour: As expected, women with a child younger than 7 years or two or more children have lower job entry rates. For men, lower job entry rates apply only to those with children aged less than 3 years or with three or more children. Furthermore, having children is associated with more stable employment relationships for both sexes (except for women with four or more children). In addition, the partnership status has opposite impacts for men and women: Having a partner and especially being married is associated with lower employment entry rates for women, but higher entry rates for men. With regard

to employment stability, however, having a partner relates positively to this outcome for both women and men. While the results for women's employment take-up are as expected based on our theoretical considerations, the results for men's employment take-up and men and women's employment stability indicate that risks of entering and remaining in welfare are higher for those who are single.

Second, differences in age effects might reflect gender-segmented labour markets. We find that men older than 35 and women older than 45 have lower employment entry hazards. For employment stability, age effects differ by gender: An age of 35 years or above is associated with higher employment stability for women than age 30–34 years. For men, an age of 40 years or above is associated with less stable employment than age 30–34 years. Because men and women generally work in different occupations, with men more likely to be in jobs that involve stressful environmental factors and physical strain, it may be more difficult for men to find and keep jobs at older ages.

The labour market context is also positively related to job entry rates and employment stability. The ratio of open positions to unemployed individuals in a district is related to higher job entry rates, while the district-level unemployment rate and share of long-term unemployment to lower entry rates. Furthermore, we expected that routine task content is associated with lower employment opportunities and stability due to digital transformation. Regarding employment take-up, we find such a relationship only for men who previously performed routine cognitive tasks (e.g. office clerks) compared with those who previously performed mainly non-routine analytical tasks (e.g. stocks administrators and clerks). Concerning employment stability, we find this expected relationship only for women performing mainly routine manual tasks in their current job (e.g. product packagers, farm labourers), who leave employment faster than those performing mainly non-routine analytical (e.g. purchaser) tasks. There is limited evidence that routine jobs are associated with lower employment opportunities and are less stable.

6 | SUMMARY AND CONCLUSIONS

Flexible labour markets can offer employment opportunities for unemployed individuals who instead of being unemployed can gain human capital. However, in segmented labour markets, these employment opportunities might not lead individuals into permanent employment. The German labour market is divided into a primary segment with stable and better-paid employment and a secondary segment with low-paid and temporary jobs (Eichhorst and Kendzia, 2016). During the past 25 years, non-standard employment has increased in Germany (Eichhorst and Tobsch, 2015). Since 2005, welfare recipients are required to accept any job offer. While the labour market is principally receptive with one million contributory jobs taken up by non-employed welfare recipients per year, a substantial share of these jobs are not sustainable. Differentiated empirical evidence on employment take-up and stability for men and women is still scarce, particularly for welfare recipients in Germany. In this regard, we investigate the determinants of non-employed welfare recipients' transitions into employment and its stability, contributing to an in-depth understanding of several factors involved. The analyses draw on administrative data, on which basis we analyse a large sample of welfare recipients in Germany starting their receipt between 2007 and 2012.

First of all, we find that human capital is positively related to employment entry and stability. Education or recent employment experience are associated with quicker employment entry as well as more stable employment. The swifter job take-up by better qualified welfare recipients

indicates that the higher job arrival rate that they can be expected to benefit from outweighs any elevated reservation wages they might have. Reservation wages that do not respond strongly to qualification might reflect the demanding system where welfare recipients are required to take up any job.

Moreover, our findings indicate that some segments, such as temporary agency employment and agriculture, forestry and fishing (and for men, also construction and transport and storage), offer quick employment entry but not sustainable employment. In addition, employment in small firms and low-paid employment is less stable for former welfare recipients. Such evidence was thus far missing for welfare recipients in Germany. However, such evidence is important from a policy perspective to promote more stable employment.

Nonetheless, the positive relationship of recent labour market experience with employment take-up and to some extent with its stability indicates the importance of the labour market remaining principally receptive, thus enabling unemployed welfare recipients to find employment and gain employment experience. The question that arises is how to promote employment stability. First, the sample comprises welfare recipients. Several of them have not worked for a long time or show other employment barriers (Achatz and Trappmann, 2011). Providing formerly unemployed individuals an accompanying after-care might help individuals to keep their jobs even in case of personal or job-specific problems (Bauer et al., 2016). Second, not every job is suitable for initiating upward mobility. Supporting further job search on the job could help individuals to find a job in another firm or segment and thus foster upward mobility. With such support for continued job search, working in temporary agency employment could be a stepping stone towards stable jobs (Jahn and Rosholm, 2018).

Furthermore, several results reflect a gender-specific division of labour as well as gender-segmented labour markets. Men reveal higher transition rates into employment, while women have more stable jobs. This differs from findings for overall employment stability for other countries, but is in line with descriptive findings on post-unemployment employment stability for Germany (Giannelli et al., 2016). We also find gender differences for sociodemographic and household characteristics. For instance, age is oppositely related to men's and women's employment stability, and for job entry, the relationship is stronger for men than for women. As men and women work in different occupations (Hägglund and Bächmann, 2017) and men are more often employed in occupations with stressful environmental factors and physical strain (Kroll et al., 2011), male jobs could be more difficult to obtain and hold at older ages. Future research could investigate the role of interactions of age with such strenuous job characteristics for welfare recipients' job stability. Such a relationship might indicate that older men need more specialised policies to improve employment opportunities and employment stability. Furthermore, women with small children or a partner take up jobs more slowly, but if they find a job, the job is more stable. A potential reason could be that women receive welfare benefits during care duties. Men's opportunities for employment entry are less influenced by children and partnership. Moreover, children or a partner are positively related to the stability of men's jobs.

The labour market currently faces two major challenges. First, technological progress continues to change the labour market and working conditions. Second, our results stem from a period in which the German labour market experienced an extreme upswing. This upswing was stopped for the time being by the Corona pandemic. As data become available, future research could study the impact of these developments on welfare recipients' employment prospects, considering further aspects of job quality in addition to employment stability.

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ENDNOTES

- ¹ For higher earnings, the benefit reduction rate increases from 80 per cent to 100 per cent.
- ² Furthermore, institutions might shape employment take-up and its stability. More generous benefits with longer entitlements tend to increase unemployment duration (for a review see Tatsiramos and Van Ours, 2014). Sanctions or job search requirements can reduce the disincentives set by unemployment benefits (Abbring et al., 2005; Arni et al., 2012; Bover et al., 2002; van den Berg et al., 2017). Furthermore, active labour market policies affect re-employment chances of participants (see Card et al., 2010 for a meta analysis). As institutions are constant in our setting, we do not discuss this issue further.

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APPENDIX

TABLE A1 Sample means at episode start by gender

	Non-employment with UBII receipt		Contributory employment	
	Women	Men	Women	Men
Labour market segments				
Sector of last/present job				
Agriculture, forestry & fishing	0.01	0.01	0.01	0.01
Mining & quarrying, electricity, gas, steam & water supply	0.00	0.01	0.00	0.01
Manufacturing	0.05	0.07	0.06	0.07
Construction	0.01	0.12	0.01	0.12
Wholesale & retail trade, repair of motor vehicles & motor cycles	0.15	0.09	0.13	0.08
Transport & storage	0.03	0.08	0.03	0.09
Accommodation & food service activities	0.13	0.09	0.09	0.05
Information & communication	0.02	0.02	0.01	0.01
Financial & insurance activities	0.01	0.00	0.01	0.00
Real estate activities, professional, scientific & technical services	0.04	0.03	0.04	0.03
Other services (w/o temporary agency employment)	0.14	0.12	0.14	0.11
Temporary agency employment	0.06	0.15	0.16	0.29
Public administration & defence; compulsory social security;	0.02	0.01	0.03	0.01
Activities of extraterritorial organisations & bodies				
Education	0.03	0.03	0.05	0.02
Human health & social work activities	0.09	0.03	0.16	0.03
Other service activities; activities of households as employers	0.08	0.04	0.07	0.03
Missing	0.06	0.05	0.00	0.00
Leaving UBII receipt within 1 month after employment start			0.25	0.27
Monthly earnings in €, deflated to 2010 price levels				
<1000			0.44	0.25
1000–1250			0.21	0.19
>1250			0.34	0.56
Recall to same firm within 3 years since last job			0.18	0.15

(Continues)

TABLE A1 (Continued)

	Non-employment with UBII receipt		Contributory employment	
	Women	Men	Women	Men
Firm size: number of employees				
Missing			0.03	0.03
1–10			0.18	0.22
11–50			0.25	0.27
51–200			0.30	0.30
>200			0.25	0.18
Human capital				
School degree				
No degree	0.10	0.12	0.07	0.11
Lower secondary	0.34	0.45	0.33	0.46
Intermediate secondary	0.31	0.25	0.36	0.27
Upper secondary (qual. for tech. college)	0.04	0.04	0.06	0.05
Upper secondary (qual. for university)	0.09	0.08	0.11	0.08
Missing	0.11	0.05	0.07	0.04
Vocational degree				
No degree	0.25	0.26	0.19	0.23
Vocational degree	0.51	0.59	0.58	0.63
Vocational school degree	0.04	0.02	0.05	0.02
Upper vocational school degree	0.03	0.02	0.03	0.02
Tech. college degree	0.02	0.02	0.03	0.02
University degree	0.05	0.04	0.07	0.04
Missing/other	0.10	0.05	0.04	0.04
Never employed (measured since 1993)	0.08	0.04	0.02	0.02
Duration since last job				
<1 month	0.53	0.54	0.15	0.12
1–<3 months	0.07	0.11	0.18	0.18
3–<6 months	0.04	0.04	0.16	0.18
6–<12 months	0.05	0.06	0.16	0.18
1–<2 years	0.07	0.07	0.15	0.16
2–<4 years	0.06	0.06	0.11	0.10
4+ years	0.10	0.09	0.07	0.07
Individual socio-demographic characteristics				
Age in years				
25–<30	0.24	0.22	0.22	0.23

(Continues)

TABLE A1 (Continued)

	Non-employment with UBII receipt		Contributory employment	
	Women	Men	Women	Men
30-<35	0.18	0.18	0.18	0.20
35-<40	0.15	0.15	0.15	0.16
40-<45	0.15	0.15	0.16	0.15
45-<50	0.13	0.14	0.14	0.13
50-<55	0.10	0.11	0.10	0.09
55-<57	0.05	0.05	0.04	0.04
Citizenship				
German	0.80	0.78	0.86	0.78
Turkish	0.05	0.07	0.03	0.08
Northern European	0.01	0.01	0.00	0.00
Southern European	0.02	0.03	0.02	0.03
Eastern European	0.06	0.04	0.05	0.04
Russian	0.01	0.01	0.01	0.01
African	0.02	0.02	0.01	0.02
South American	0.00	0.00	0.00	0.00
Asian	0.03	0.04	0.02	0.03
North American	0.00	0.00	0.00	0.00
Missing/other	0.00	0.00	0.00	0.00
Residency in eastern Germany	0.32	0.32	0.36	0.32
Disabled				
No	0.88	0.91	0.92	0.93
Yes	0.03	0.04	0.03	0.03
Missing	0.09	0.05	0.06	0.04
Household characteristics				
Age of the youngest child in years				
No children	0.51	0.70	0.56	0.67
0-2	0.13	0.11	0.09	0.13
3-6	0.14	0.08	0.11	0.09
7-14	0.18	0.08	0.19	0.09
15-17	0.05	0.02	0.05	0.02
Number of children				
No children	0.51	0.70	0.56	0.67
1	0.26	0.13	0.26	0.14
2	0.16	0.10	0.14	0.12
3	0.05	0.04	0.03	0.05
4+	0.02	0.02	0.01	0.02

(Continues)

TABLE A1 (Continued)

	Non-employment with UBII receipt		Contributory employment	
	Women	Men	Women	Men
Partnership status				
Single, never married	0.26	0.39	0.34	0.39
Single, ever married	0.27	0.16	0.30	0.14
Cohabiting	0.05	0.05	0.04	0.06
Married	0.29	0.30	0.19	0.31
Partner, marital status unknown	0.07	0.08	0.06	0.09
Missing	0.06	0.02	0.07	0.01
Labour market context				
Ratio of open positions to unemployed	12.49	12.24	13.09	13.03
Unemployment rate	9.24	9.40	9.10	9.07
Share of long-term unemployment	34.24	34.56	34.11	34.36
Main task of last/present job				
Non-routine analytical	0.04	0.06	0.06	0.07
Non-routine interactive	0.16	0.06	0.18	0.05
Routine cognitive	0.13	0.09	0.17	0.09
Routine manual	0.06	0.12	0.05	0.14
Non-routine manual	0.44	0.49	0.41	0.47
Missing	0.08	0.15	0.12	0.19
<i>N</i> (persons)	237,535	271,237	96,655	151,408
<i>N</i> (episodes)	419,195	531,340	134,523	240,592

Source: SIG

TABLE A2 Log hazard ratios for women

	Entry into contributory employment	Entry into marginal employment	Exit from UBII receipt w/o a job	Exit from contributory employment
Labour market segments				
Sector of last/present job (reference: wholesale & retail trade, repair of motor vehicles & motor cycles)				
Agriculture, forestry & fishing	0.1473***	0.1515***	0.0057	0.5303***
Mining & quarrying, electricity, gas, steam & water supply	0.0052	-0.1159*	-0.0294	0.0064
Manufacturing	0.0597***	-0.0276	0.0092	-0.0616***
Construction	-0.1365***	-0.1541***	0.0071	0.0278
Transport & storage	-0.0093	0.0799***	-0.0306	0.0393
Accommodation & food service activities	0.0203	0.2020***	-0.0175	0.1531***
Information & communication	-0.0374	-0.0741**	0.0122	0.2012***
Financial & insurance activities	0.0763*	-0.1925***	0.0005	-0.0932*
Real estate activities, professional, scientific & technical services	-0.0522***	-0.1031***	-0.0098	-0.0872***
Other services (w/o temporary agency employment)	-0.0323**	0.0115	-0.0413***	0.0989***
Temporary agency employment	0.2048***	-0.1242***	-0.0227	0.6066***
Public administration & defence; compulsory social security; activities of extraterritorial organisations & bodies	0.0505**	-0.2487***	0.0263	-0.0419
Education	-0.1275***	-0.2633***	-0.0567***	0.0303
Human health & social work activities	0.0135	-0.2500***	0.0024	-0.2732***
Other service activities; activities of households as employers	-0.1112***	-0.0617***	-0.0119	-0.0367*
Missing	-0.3807***	-0.2134***	0.0458**	-0.1236
Employment status of last job (reference: contributory job)				
Marginal employment	-0.4215***	0.4303***	-0.0474***	0.0173*
Training	-0.0910***	0.1311***	-0.0079	-0.0877***
Other	-0.2540**	-0.3806**	0.0982	0.5779***

(Continues)

TABLE A2 (Continued)

	Entry into contributory employment	Entry into marginal employment	Exit from UBII receipt w/o a job	Exit from contributory employment
Leaving UBII receipt within 1 month after employment start				-0.1523***
Monthly earnings in €, deflated to 2010 price levels (reference: <1000)				
1000–1250				-0.3608***
>1250				-0.4289***
Recall to same firm within 3 years since last job				0.1492***
Subsidised employment				-0.1728***
Firm size: number of employees (reference: 1–10)				
11–50				0.0044
51–200				-0.0343***
>200				-0.1202***
Missing				0.1649***
Human capital				
School degree (reference: no degree)				
Lower secondary	0.0820***	0.1046***	-0.0049	0.0271
Intermediate secondary	0.2103***	0.1226***	0.1030***	-0.1241***
Upper secondary (qual. for Tech. college)	0.2866***	0.0554**	0.1583***	-0.1746***
Upper secondary (qual. for university)	0.3318***	-0.0236	0.2816***	-0.1535***
Missing	0.2514***	0.0518***	0.1717***	-0.1945***
Vocational degree (reference: no degree)				
Vocational degree	0.3125***	0.1376***	0.0775***	-0.1095***
Vocational school degree	0.4117***	0.0436**	0.1114***	-0.0656***
Upper vocational school degree	0.3659***	-0.0109	0.1202***	-0.0678***
Tech. college degree	0.5616***	-0.0072	0.1326***	-0.1824***
University degree	0.4738***	-0.0172	0.1552***	-0.0897***
Missing/other	-0.1133***	0.0116	-0.0504***	-0.0589**
Never employed (measured since 1993)	-1.8730***	-0.8347***	0.0767***	0.0622*
Duration since last job (reference: 1–<3 months)				
<1 month	0.1560***	0.2164***	-0.2222***	-0.0916***
3–<6 months	-0.2694***	-0.1435***	0.0915***	0.0015
6–<12 months	-0.4202***	-0.2337***	0.0446**	-0.0121
1–<2 years	-0.6537***	-0.3777***	0.1578***	-0.0931***

(Continues)

TABLE A2 (Continued)

	Entry into contributory employment	Entry into marginal employment	Exit from UBII receipt w/o a job	Exit from contributory employment
2-<4 years	-0.8143***	-0.5268***	0.2542***	-0.0643***
4+ years	-1.0365***	-0.7162***	0.2551***	0.0127
Individual sociodemographic characteristics				
Age in years (reference: 30-<35)				
25-<30	0.0490***	0.0204*	0.0999***	0.0790***
35-<40	0.0454***	0.0419***	-0.1011***	-0.0625***
40-<45	0.0565***	0.0780***	-0.1426***	-0.0815***
45-<50	-0.0815***	0.0262*	-0.1661***	-0.0472***
50-<55	-0.2983***	-0.0544***	-0.2576***	-0.0513***
55-<57	-0.6179***	-0.2125***	-0.2417***	-0.0360
Citizenship (reference: German)				
Turkish	-0.2890***	-0.1334***	-0.1253***	-0.0276
Northern European	-0.1608***	-0.1300**	0.0394	0.1785***
Southern European	-0.0165	0.1223***	-0.0048	0.0338
Eastern European	-0.1215***	0.0530***	-0.2285***	0.0091
Russian	-0.2660***	0.0859**	-0.2387***	-0.1286***
African	0.0809***	-0.0964***	-0.3175***	0.1726***
South American	-0.0494	-0.0005	-0.0063	0.2194***
Asian	-0.3693***	-0.0463**	-0.4906***	-0.0877***
North American	0.0727	-0.3140*	0.2659**	0.2903**
Missing/other	-0.2515***	-0.0266	-0.2503***	0.1786**
Residency in eastern Germany	0.1719***	-0.0361***	0.0722***	-0.1209***
Disabled (reference: no)				
Yes	-0.4434***	-0.2991***	0.1879***	0.0997***
Missing	0.0781***	-0.0255	0.0059	-0.0960***
Household characteristics				
Age of the youngest child in years (reference: no children)				
0-2	-0.4426***	-0.1064***	-0.1451***	-0.2851***
3-6	-0.2581***	0.1223***	-0.1045***	-0.1305***
7-14	0.0136	0.1661***	-0.1382***	-0.1804***
15-17	0.1288***	0.1385***	-0.0002	-0.1168***
Number of children (reference: 1)				
2	-0.0243**	0.0357***	-0.0121	-0.0448***
3	-0.1795***	-0.0179	-0.0527***	0.0280
4+	-0.4192***	-0.1730***	-0.0802***	0.2867***
Partnership status (reference: single, never married)				
Single, ever married	-0.0445***	0.0494***	0.0608***	0.0495***

(Continues)

TABLE A2 (Continued)

	Entry into contributory employment	Entry into marginal employment	Exit from UBII receipt w/o a job	Exit from contributory employment
Cohabiting	-0.1112***	-0.0227	0.6748***	0.0300
Married	-0.1753***	-0.0065	0.7649***	-0.0693***
Partner, marital status unknown	-0.0536***	-0.0648***	0.6227***	-0.0282
Missing	-0.0579***	0.0912***	0.1938***	-0.0936***
Labour market context				
Ratio of open positions to Unemployed	0.0071***	-0.0019***	0.0036***	-0.0008
Unemployment rate	-0.0229***	-0.0246***	-0.0291***	0.0177***
Share of long-term unemployment	-0.0010**	0.0006	-0.0037***	-0.0032***
Main task of last/present job (reference: non-routine analytical)				
Non-routine interactive	0.0137	0.1270***	-0.0737***	0.0635***
Routine cognitive	-0.0077	0.0288	-0.1077***	-0.0547***
Routine manual	-0.0241	0.0840***	-0.0915***	0.2792***
Non-routine manual	-0.0282*	0.1516***	-0.0821***	0.0640***
Missing	-0.0882***	0.0917***	-0.1585***	0.1313***
Others				
Constant	-6.0121***	-7.0203***	-6.8716***	-5.6583***
Baseline: piece-wise linear spline. Gradient of the log hazard (per day) over indicated years of process time				
0-<0.5 years	-0.0037***	-0.0029***	0.0010***	-0.0001
0.5-<1 years	-0.0016***	-0.0013***	-0.0032***	-0.0025***
1-<2 years	-0.0008***	-0.0007***	-0.0007***	-0.0006***
2-<4 years	-0.0004***	-0.0003***	-0.0003***	-0.0006***
4-<6 years	-0.0007***	-0.0003***	-0.0001***	-0.0001**
6+ years	-0.0002	-0.0006***	0.0005***	-0.0003
Duration of UBII receipt in 2 years before episode start in years (reference: 0)				
>0-1	-0.0964***	-0.0082	0.1157***	0.0220*
>1-1.5	-0.1487***	-0.0231	-0.0166	0.0178
>1.5-2	-0.2582***	0.0064	-0.3092***	-0.0021
Duration of UIB receipt in 2 years before episode start in years (reference: 0)				
>0-0.25	0.2082***	0.0752***	-0.0497***	-0.0338***
>0.25-0.5	0.2956***	0.0921***	-0.1138***	-0.0056
>0.5-1	0.2745***	0.0458*	-0.1862***	-0.0032
>1-2	0.4647***	0.0478	-0.3342***	-0.1058**
Year of episode start (reference: 2010)				
2007	0.0439***	0.0707***	0.0329***	0.1398***

(Continues)

TABLE A2 (Continued)

	Entry into contributory employment	Entry into marginal employment	Exit from UBII receipt w/o a job	Exit from contributory employment
2008	-0.0053	0.0203*	0.0228**	0.1016***
2009	-0.0475***	-0.0144	-0.0579***	0.0475***
2011	-0.0242**	-0.0571***	-0.0622***	-0.0684***
2012	-0.0764***	-0.1221***	-0.0938***	-0.0702***
2013				-0.1219***
2014				-0.1830***
Quarter of episode start (reference: January–March)				
April–June	0.0548***	0.0022	-0.0071	0.1020***
July–September	0.0450***	-0.0016	0.0117	0.0840***
October–December	-0.0416***	-0.0358***	-0.0322***	0.1867***
Order of episode (reference: 1st)				
2nd	0.0131	0.0147	0.0458***	0.0460***
3rd	0.0311***	0.0519***	0.0576***	0.1148***
4+	0.0897***	0.0831***	0.0642***	0.2119***
Standard deviation of the heterogeneity distribution	0.7177***	0.7250***	0.6143***	0.7132***
Correlations of the error terms for				
Entry into contr. emply./marginal employment	0.4809***			
Entry into contr. emply./exit from UBII w/o job	-0.0149			
Entry into contr. emply./exit from contr. emply.	-0.2007***			
Entry into marginal employment/exit from UBII w/o job	-0.1631***			
Entry into marginal employment/exit from contr. emply.	-0.0829***			
Exit from UBII w/o job/exit from contr. emply.	0.0197			
Individuals	237,535	237,535	237,535	96,655
Episodes	419,195	419,195	419,195	134,523
Transitions	135,405	113,579	129,929	107,240

Note: All episodes in observation period. Results from piecewise-linear exponential hazard model with individual-level frailty, controlling for the correlation of unobserved heterogeneity in employment entries, welfare exits without employment and employment stability.

Significance levels: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: SIG.

TABLE A3 Log hazard ratios for men

	Entry into contributory employment	Entry into marginal employment	Exit from UBII receipt w/o a job	Exit from contributory employment
Labour market segments				
Sector of last/present job (reference: wholesale & retail trade, repair of motor vehicles & motor cycles)				
Agriculture, forestry & fishing	0.2248***	0.1557***	-0.0850**	0.3948***
Mining & quarrying, electricity, gas, steam & water supply	0.0704***	-0.0982***	-0.0365	0.2113***
Manufacturing	0.0992***	-0.0428**	0.0542***	-0.0060
Construction	0.1876***	0.1377***	0.1051***	0.3600***
Transport & storage	0.2097***	0.2432***	0.0786***	0.0299**
Accommodation & food service activities	0.0098	0.3879***	0.1141***	0.0217
Information & communication	-0.0469**	-0.0390	0.0330	0.1147***
Financial & insurance activities	-0.0820*	-0.0693	0.1273***	-0.0613
Real estate activities, professional, scientific & technical services	-0.0488***	-0.0390*	0.0377*	-0.0635***
Other services (w/o temporary agency employment)	0.0601***	0.0614***	-0.0487***	0.1943***
Temporary agency employment	0.2622***	-0.1877***	0.0061	0.5724***
Public administration & defence; compulsory social security; activities of extraterritorial organisations & bodies	-0.1050***	-0.1419***	-0.1804***	0.0468*
Education	-0.1568***	-0.2979***	-0.1336***	0.2540***
Human health & social work activities	-0.1370***	-0.2610***	-0.1003***	-0.2092***
Other service activities; activities of households as employers	-0.1091***	-0.0071	-0.0671***	0.0699***
Missing	-0.3673***	-0.1754***	0.0592***	-0.1757
Employment status of last job (reference: contributory job)				
Marginal employment	-0.2767***	0.5078***	-0.0857***	-0.0123*
Training	-0.0152	0.0627**	0.0148	-0.1011***

(Continues)

TABLE A3 (Continued)

	Entry into contributory employment	Entry into marginal employment	Exit from UBII receipt w/o a job	Exit from contributory employment
Other	0.2880***	-0.6195***	0.3295***	0.6664***
Leaving UBII receipt within 1 month after employment start				-0.1541***
Monthly earnings, deflated to 2010 price levels (reference: <1000 €)				
1000–1250 €				-0.5017***
>1250 €				-0.6969***
Recall to same firm within 3 years since last job				-0.0433***
Subsidised employment				-0.2839***
Firm size: number of employees (reference: 1–10)				
11–50				-0.0237***
51–200				-0.1249***
>200				-0.2542***
Missing				0.1706***
Human capital				
School degree (reference: no degree)				
Lower secondary	0.0518***	0.0013	0.0224*	0.0183*
Intermediate secondary	0.1116***	-0.0216*	0.1305***	-0.1205***
Upper secondary (qual. for tech. college)	0.1594***	-0.0743***	0.1541***	-0.2236***
Upper secondary (qual. for university)	0.0975***	-0.0495***	0.2480***	-0.2487***
Missing	0.1848***	0.0199	0.2617***	-0.1871***
Vocational degree (reference: no degree)				
Vocational degree	0.2612***	0.0456***	0.0278***	-0.0611***
Vocational school degree	0.2745***	0.0065	0.0211	-0.0887***
Upper vocational school degree	0.3696***	-0.0154	0.0532**	-0.0797***
Tech. college degree	0.4344***	-0.1077***	0.0866***	-0.1866***
University degree	0.3454***	-0.1148***	0.1022***	-0.0579***
Missing/other	0.0817***	0.1099***	-0.1681***	-0.0850***
Never employed (measured since 1993)	-1.4463***	-0.6231***	0.2941***	0.1277***
Duration since last job (reference: 1–<3 months)				
<1 month	0.1136***	0.2073***	-0.0293**	-0.0333***
3–<6 months	-0.2723***	-0.1279***	0.1059***	0.0212**
6–<12 months	-0.4509***	-0.2955***	0.0261*	0.0576***

(Continues)

TABLE A3 (Continued)

	Entry into contributory employment	Entry into marginal employment	Exit from UBII receipt w/o a job	Exit from contributory employment
1-<2 years	-0.6806***	-0.4963***	0.1562***	0.0041
2-<4 years	-0.9074***	-0.6374***	0.3645***	0.0042
4+ years	-0.9730***	-0.8325***	0.3916***	0.0562***
Individual sociodemographic characteristics				
Age in years (reference: 30-<35)				
25-<30	0.1221***	0.0324***	0.0796***	0.0267***
35-<40	-0.1225***	-0.0429***	-0.0674***	-0.0013
40-<45	-0.2385***	-0.0857***	-0.1429***	0.0206**
45-<50	-0.3812***	-0.1665***	-0.1960***	0.0546***
50-<55	-0.5767***	-0.2829***	-0.2474***	0.0604***
55-<57	-0.8506***	-0.3472***	-0.2325***	0.1114***
Citizenship (reference: German)				
Turkish	0.0234**	0.1842***	-0.1043***	-0.0627***
Northern European	-0.0880***	-0.0008	0.2623***	0.1315***
Southern European	0.1088***	0.3328***	0.0903***	0.0417**
Eastern European	0.0343**	0.1569***	-0.1571***	0.0105
Russian	-0.0006	0.1100***	-0.3647***	-0.1726***
African	0.2461***	0.1715***	-0.1869***	0.0873***
South American	0.0821	0.1333	0.1219*	0.0508
Asian	-0.0309**	0.4095***	-0.2946***	-0.1029***
North American	0.0298	-0.0641	0.3680***	0.2448***
Missing/other	-0.0293	0.1533***	-0.1508***	0.0926**
Residency in eastern Germany	0.1393***	-0.0096	0.0735***	-0.1964***
Disabled (reference: no)				
Yes	-0.4126***	-0.1302***	0.1338***	-0.0007
Missing	0.0534***	0.0446**	-0.0056	-0.1095***
Household characteristics				
Age of the youngest child in years (reference: no children)				
0-2	-0.0239**	-0.0061	-0.2484***	-0.0897***
3-6	0.0119	0.0199	-0.1550***	-0.1262***
7-14	0.0455***	0.0565***	-0.0860***	-0.1212***
15-17	0.0814***	0.0333	0.0198	-0.0912***
Number of children (reference: 1)				
2	0.0161	-0.0029	-0.0474***	-0.0241**
3	-0.0330**	-0.0552***	-0.1984***	-0.0113
4+	-0.1176***	-0.1910***	-0.3359***	0.0427*

(Continues)

TABLE A3 (Continued)

	Entry into contributory employment	Entry into marginal employment	Exit from UBII receipt w/o a job	Exit from contributory employment
Partnership status (reference: single, never married)				
Single, ever married	0.0692***	0.1637***	0.1027***	0.0108
Cohabiting	0.2394***	0.1780***	0.3788***	-0.0551***
Married	0.3461***	0.2578***	0.4171***	-0.2162***
Partner, marital status unknown	0.2820***	0.1447***	0.4394***	-0.0807***
Missing	0.1930***	0.2483***	0.2430***	-0.1240***
Labour market context				
Ratio of open positions to unemployed	0.0096***	-0.0025***	0.0049***	-0.0034***
Unemployment rate	-0.0213***	-0.0071***	-0.0261***	0.0120***
Share of long-term unemployment	-0.0019***	0.0018***	-0.0053***	-0.0040***
Main task of last/present job (reference: non-routine analytical)				
Non-routine interactive	-0.0795***	0.0847***	-0.0245	0.1184***
Routine cognitive	-0.0406***	-0.0107	-0.0434***	0.0654***
Routine manual	-0.0044	0.1195***	-0.0510***	0.2915***
Non-routine manual	-0.0095	0.2256***	-0.0301**	0.2636***
Missing	-0.0892***	0.1005***	-0.1221***	0.2273***
Others				
Constant	-5.8485***	-7.4099***	-7.1046***	-5.5000***
Baseline: piece-wise linear spline. Gradient of the log hazard (per day) over indicated years of process time				
0-<0.5 years	-0.0021***	-0.0014***	0.0020***	0.0009***
0.5-<1 years	-0.0018***	-0.0018***	-0.0030***	-0.0030***
1-<2 years	-0.0010***	-0.0007***	-0.0005***	-0.0008***
2-<4 years	-0.0007***	-0.0005***	-0.0002***	-0.0009***
4-<6 years	-0.0008***	-0.0005***	0.0001	-0.0001
6+ years	-0.0004*	0.0000	0.0005***	-0.0004**
Duration of UBII receipt in 2 years before episode start in years (reference: 0)				
>0-1	-0.1155***	-0.0658***	0.0965***	0.0549***
>1-1.5	-0.1731***	-0.1178***	-0.1166***	0.0803***
>1.5-2	-0.3043***	-0.0770***	-0.4060***	0.0643***
Duration of UIB receipt in 2 years before episode start in years (reference: 0)				
>0-0.25	0.2285***	0.0601***	-0.0477***	-0.0550***
>0.25-0.5	0.2625***	-0.0108	-0.1237***	-0.0179*
>0.5-1	0.2906***	-0.0432**	-0.2823***	-0.0365***
>1-2	0.4711***	-0.0317	-0.4678***	-0.1481***

(Continues)

TABLE A3 (Continued)

	Entry into contributory employment	Entry into marginal employment	Exit from UBII receipt w/o a job	Exit from contributory employment
Year of episode start (reference: 2010)				
2007	0.0505***	-0.0088	0.0471***	0.1757***
2008	-0.1303***	-0.0556***	0.0207*	0.2069***
2009	-0.1936***	-0.0258**	-0.0586***	0.1330***
2011	-0.0805***	-0.0611***	-0.0498***	-0.0101
2012	-0.2027***	-0.1185***	-0.0485***	-0.0104
2013				-0.0495***
2014				-0.0617**
Quarter of episode start (reference: January–March)				
April–June	0.0347***	-0.0098	0.0184**	0.0488***
July–September	-0.0651***	-0.0512***	0.0459***	0.1265***
October–December	-0.1775***	-0.0508***	0.0025	0.1739***
Order of episode (reference: 1st)				
2nd	0.0275***	0.0280***	0.0156*	0.0471***
3rd	0.0720***	0.0868***	0.0202*	0.0827***
4+	0.1397***	0.1243***	0.0316**	0.1359***
Standard deviation of the heterogeneity distribution	0.6288***	0.7367***	0.6678***	0.6739***
Correlations of the error terms for				
Entry into contr. employ./ marginal employment	0.4091***			
Entry into contr. employ./ exit from UBII w/o job	0.1013***			
Entry into contr. employ./ exit from contr. employ.	-0.1394***			
Entry into marginal employment/exit from UBII w/o job	-0.0152			
Entry into marginal employment/exit from contr. employ.	-0.0827***			
Exit from UBII w/o job/ exit from contr. employ.	0.0831***			
Individuals	271,237	271,237	271,237	151,408
Episodes	531,340	531,340	531,340	240,592
Transitions	242,214	115,800	132,147	204,327

Note: All episodes in observation period. Results from piecewise-linear exponential hazard model with individual-level frailty, controlling for the correlation of unobserved heterogeneity in employment entries, welfare exits without employment and employment stability.

Significance levels: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Source: SIG.