Article

# Social policy and labor supply: the impact of activating labor market institutions on reservation wages

Benjamin Fuchs,<sup>1</sup> Sebastian Prechsl<sup>2,3,\*</sup> and Tobias Wolbring (1)<sup>2,3</sup>

<sup>1</sup>Alice Salomon University of Applied Sciences Berlin, Berlin, Germany, <sup>2</sup>Friedrich-Alexander University Erlangen-Nürnberg, Erlangen, Germany and <sup>3</sup>Friedrich-Alexander-Universität Erlangen-Nürnberg, Nuremberg, Germany

\*Correspondence: sebastian.prechsl@fau.de

## Abstract

Activation is an efficacious policy paradigm in modern welfare states. Taking the case of Germany, we study the relationship between the embeddedness of benefit recipients in activating labor market institutions and individual labor supply. Using panel data, we estimate the effects of transitions between key institutional states with different degrees of activation on reservation wages (RWs). We show that RWs react to activation: the transition from gainful employment to unemployment benefit receipt leads to an average decrease of 3.1% in RWs. The transition from gainful employment to welfare benefit receipt—an institutional state with far more rigorous activation—leads to a stronger decrease of 4.9%. Mediation analyses show that the income associated with different institutional states is the predominant mechanism that drives the effect on RWs. However, subjective social status also partly mediates the effect. Implications of these findings for active labor market policies are discussed.

Key words: labor market institutions, labor supply, social policy, social security, wages, welfare state

JEL classification: H55, I38, J28

## 1. Introduction

Active labor market policies and their corresponding programs for unemployed and welfare recipients have become widespread among European countries since the 1950s. Understood as active policies designed to facilitate employment transitions (Kalleberg, 2018), these programs have played an important, although politically controversial, role in combating

© The Author(s) 2022. Published by Oxford University Press and the Society for the Advancement of Socio-Economics. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (https:// creativecommons.org/licenses/by/4.0/), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited. unemployment. Recent decades illustrate that international economic and labor market trends have led to a process of cross-country learning and, thus, to the widespread use of active labor market programs. In the same way, the *activation paradigm*, which places a particular emphasis on incentives, enforcement and sanctions alongside support measures, has gained influence since the mid-1990s (Bonoli, 2010). Although the political discourse on activation has decreased substantially since the late 2000s (Viebrock and Clasen, 2008), this has not been associated with a substantial reduction of activation policies since the policy paradigm is still efficacious in modern welfare states. Activation has also received increasing scientific attention in recent discussions on the effectiveness of measures to reduce the detrimental effects of unemployment on subjective outcomes such as life satisfaction or social integration (e.g. Wulfgramm, 2011; Gundert and Hohendanner, 2015). As evidence on the effectiveness of activation regimes stimulates countries' mutual learning processes and thus the diffusion of activation into social policy (Clasen and Clegg, 2006), our study examines the consequences of activation for the individual labor supply.

We take the case of Germany to study the effects of activating labor market policies, as incisive reforms implemented between 2003 and 2005 marked a significant shift toward an activation-centered labor market regime. A main component of the 'Hartz reforms' was the restructuring of social security for employable individuals by merging former unemployment assistance and social assistance schemes into a universal, means-tested welfare benefit (WB) (for an overview, see Eichhorst et al., 2010). Alongside unemployment insurance benefits (UIBs), these WBs constitute one of the two main institutions of social security for the working-age population. Corresponding to the implemented policy paradigm, both benefit schemes contain various elements of activation: recipients of UIB face a shortened maximum receipt duration, are required to participate in vocational integration measures and must be available for appointments established by the employment agency. For WB recipients, activation evolves even more strictly through a rigorous mutual obligation system that includes cash transfers and various individualized support measures on the one hand and rigorous demands on the other hand, such as the obligation to accept every reasonable job offer. WB recipients are further prone to benefit sanctions if they do not meet activation requirements. Thus, the case of Germany, with a clear orientation toward activation and institutional states with varying degrees of activation, provides an excellent basis for examining the consequences of activation policies.

On the individual level, activation policies intend to make benefit receipt less attractive than paid work to raise the labor supply of the targeted benefit receiptents (Eichhorst and Konle-Seidl, 2008). From this perspective, the *reservation wage* (RW) is crucial. Whether an individual accepts a job offer depends on the acceptable minimum wage for her, that is, the RW. Extensive research demonstrates the substantial impact of RWs on labor market outcomes such as reemployment (Barron and Mellow, 1981; Lancaster and Chesher, 1983; Prasad, 2000; Bloemen and Stancanelli, 2001). Despite its central role in the labor supply, research on the effects of labor market institutions on RWs is scarce. Furthermore, existing evidence is largely based on cross-sectional data and might suffer from unobserved heterogeneity.

Our article is a first step toward closing this research gap and aims to advance knowledge on the role of activating labor market institutions for the labor supply. The article contributes to the literature in three ways. First, we provide a socioeconomic conceptual framework for analyzing the effects of institutional embeddedness on RWs and carve out different economic and social mechanisms of how activation affects the labor supply. Second, our analyses cover a broad set of institutional states with different degrees of activation to analyze changes in RWs. By using longitudinal data with a large sample size, we investigate whether institutional status changes cause intraindividual changes in RWs, thereby avoiding bias due to unobserved heterogeneity. Third, we conduct mediation analyses to explore which economic and social mechanisms—household income, subjective social status, and subjective social integration—bring about changes in RWs.

#### 2. Theoretical background

## 2.1. RWs and activation policies

Initially, RW was introduced as a theoretical construct in the framework of microeconomic search theory. The microeconomic standard model of sequential job search (McCall, 1970) addresses the labor supply of an unemployed actor (for an overview of the model and its extensions, see Van den Berg and Uhlendorff, 2018). This model predicts three main determinants of the RW level: income expectations, the discount rate of future income and, particularly relevant in our framework, the amount of UIB within the respective labor market regime. According to the *RW property* (Cox and Oaxaca, 1992), rational actors will only supply labor and take on a job if the expected income exceeds the income that can be obtained from social security institutions. The simple, stationary model of job searching predicts a time-constant RW in this context and found substantial empirical corroboration.

Sociological life-course theory shares this focus on individual actors and their decisions with the outlined microeconomic origins of the RW concept (Mayer, 2009) but applies a different perspective on the labor market and social security institutions. Paradigmatic principles of the life-course approach (Elder *et al.*, 2003; Mayer, 2009) are the temporal, institutional and social embeddedness of actors, time-dependent impacts of life events and socially bounded decision-making (agency). In the context of labor supply, these principles imply the view of an actor who purposefully adjusts the RW over the course of life, taking into account her temporal, social and institutional embeddedness.

In this study, we focus on the concept of institutional embeddedness without neglecting the existence and relevance of other forms of embeddedness.<sup>1</sup> We assume that markets and market participants are embedded in institutions such as the welfare state and its benefit schemes that are essentially of nonmarket origin. For example, despite being connected to the preceding labor market participation, UIB provision is not a natural result of economic transactions but is enabled by welfare state institutions and, as Gangl (2004) argues, is closely linked to RW dynamics. Anxo and Erhel (2008) show from a life-course perspective that transitions of working-age individuals between different institutional states can be conceptualized with the transitional labor market approach

1 Note the heterogeneous usage of the embeddedness concept in sociological research (see Krippner et al., 2004). Our institution-centered conceptualization of embeddedness contrasts, for instance, with Granovetter's (1985) social embeddedness that focused Polanyi's (1957) initial embeddedness concept on social networks. Our conceptualization, however, does not imply an irrelevance of social networks or other forms of embeddedness for RW dynamics. On the contrary, the following theoretical considerations acknowledge the interplay of social and institutional embeddedness (e.g. the link between unemployment, social status, and social integration).

(Schmid, 2017). This approach identifies five crucial transitions: school-to-work, job-tojob, employment–unemployment, housework–employment and employment–retirement. According to this perspective, life-course transitions between and within core institutionally defined states are the main areas that modern social and labor market policy can target to stabilize individual life courses (Schmid and Gazier, 2002).

In this outlined nexus of labor supply in an activating labor market regime, the welfare state's life-course policy embeds individuals into different institutional states according to their respective social situations (Leisering, 2003). As their social situation changes, the obtained institutional state changes accordingly, for example, from UIB receipt to WB receipt when the former benefit receipt duration is exhausted. Due to the heterogeneous degrees of activation between institutional states, transitions between these states should be associated with the dynamic development of RWs. For instance, individuals who change their status from gainful employment to UIB receipt or WB receipt are confronted with specific life-course risks (e.g. poverty) as well as with the respective activation measures implemented by the employment agency. While each institutional state consists of what Eichhorst and Konle-Seidl (2008) describe as 'the two sides of activation'—demanding and enabling measures—there is no doubt that activation measures are far more rigorous for WB receipt than for all other institutional states.

Consistent with the agency assumption, individuals will consider adjusting their RW to influence the probability of leaving their given institutional state as a UIB or WB recipient. Furthermore, a major goal of activation policies is increasing recipients' efforts to overcome benefit receipt. Thus, embeddedness in an institutional state with a high degree of activation will result in lower RWs than embeddedness in a less activating institutional state. This corresponding degree of activation will be, to a certain extent, anticipated before the transition into this state. Particularly, we expect that UIB recipients decrease their RWs shortly before a transition to being a WB recipient. However, RWs should also vary by benefit receipt duration within institutional states due to tightening activation measures, exacerbated by growing financial strain and deprivation as benefit receipt continues (Christoph and Lietzmann, 2013).

Accordingly, we derive three hypotheses from our socioeconomic framework:

H1: RWs are not stationary but undergo substantial intraindividual changes between different institutional states of benefit receipt.

H2: Due to the higher level of activation, WB receipt has a stronger negative effect on RWs than UIB receipt.

H3: RWs decrease with the duration of UIB and WB receipt and reflect the anticipation effects of imminent transitions.

#### 2.2. Socioeconomic mechanisms of activation

In addition to the total effects of activating institutional states on RWs, it is necessary to examine theoretically the mechanisms that bring about these effects. In addition to the intended economic consequences of activation measures for household income, we are interested in the unintended social consequences of benefit receipt for social status and integration that may partly explain the effect on RWs.

Household income The monetary amount of benefits is a crucial instrument of activating labor market regimes to adjust the household income of benefit recipients. Providing lower benefits, thereby decreasing household income, can reinforce incentives for job finding and job take-up (Bonoli, 2010; see also Dinan, 2019). Specifically, this mechanism can affect concession-making in terms of work location, work content and working conditions. A particularly important aspect of work-related concessions is wages, and it is likely that reductions in RWs are determined by the household income that results from the amount of benefits; low benefits, as a tool of rigorous activation, are a key feature of institutional states with high activation, such as WB receipt.

We assume household income to explain a substantial part of the effect of different institutional states on RWs. First, a drop in household income increases the marginal costs of searching so that the RW is expected to decline (Borjas, 2013). Second, reduced income restricts the recipient's ability to reach desired goals and rewards and to control the life situation. Recipients are, therefore, likely to suffer from distress (Fryer, 1986). Reducing RWs to increase reemployment chances can be a way to cope with the situation and regain control over one's life (McKee-Ryan *et al.*, 2005). Conversely, the transition from gainful employment into employed WB receipt, that is, the receipt of in-work benefits and tax credits, will decrease the RWs of working individuals. However, due to the less rigorous activation of employed beneficiaries, we expect a smaller RW decrease in comparison with the transition from gainful employment to unemployed WB receipt.<sup>2</sup>

We derive the following hypothesis from these considerations:

H4: The amount of income partly explains the intraindividual changes in RWs between different institutional states of benefit receipt.

*Subjective social status* Another important mechanism is the effect of transitions into benefit receipt on RWs via subjective social status. According to latent deprivation theory (Jahoda, 1982), job loss, which is typically accompanied by UIB or WB receipt in modern welfare states, is likely to lead to the deprivation of a valued social status and identity. In most societies, work is still the main source of status and is important for the definition of an individual's identity, while joblessness is a status that caries societal stigma (Gross *et al.*, 2020). Therefore, UIB receipt and the even more stigmatized WB receipt are likely to disrupt an individual's strategies, which are created to maintain a consistent and positive self-image. This can, in turn, lead to anxiety, self-doubt and lowered self-esteem (Ezzy, 1993), as well as affect how individuals appraise their position in society, that is, their subjective social status.

The different levels of activation can play an important role in such self-evaluations. For instance, benefit cuts and economic strains can serve as testimony of a lack of success and control and 'erode positive concepts of self' (Pearlin *et al.*, 1981, p. 337). Likewise, benefit recipients are confronted with obligations (e.g. to take a certain job or lose benefits) and may feel a loss of control over their life course (Wulfgramm, 2011). Therefore, rigorously activating institutional states with a lower benefit level and higher restrictions regarding self-directedness should have stronger effects than less rigorously activating institutional states.

In sum, we assume that these processes negatively affect the subjective social status and that individuals who downgrade their position in society in conjunction with negative selfevaluations are likely to reduce their wage aspirations. We expect this effect to be

2 In-work benefit recipients in Germany are, however, still prone to various activation measures such as mandatory consultation appointments or subsidized further education.

particularly important for benefit recipients since they do experience the respective downgrading resulting from the transition to being a benefit recipient.

We thus derive the following hypothesis:

H5: Subjective social status partly explains the intraindividual changes in RWs between different institutional states of benefit receipt.

*Perceived social integration* The subjective sense of social integration can be another mechanism in the relationship between labor market institutions and RWs. Job loss leading to UIB receipt or WB receipt is a threat to social integration. Benefit recipients not only face a loss of their labor market position, which is an important part of their social identity (Jahoda, 1982) but also lose social contacts at the workplace and in private contexts (Jones, 1988). UIBs or WBs impair the capability of the recipient to participate in society, for instance, in terms of social activities or consumption (Kunze and Suppa, 2017; Pohlan, 2019), which will have a negative effect on the feeling of social integration.

Due to differences in benefit levels, opportunities for agency and the degree of social stigmatization, the different levels of activation play an important role. For instance, benefit reductions impair the capabilities for participation in social life, while demands that restrict the recipient's scope of action may frustrate control over one's life course (Gundert and Hohendanner, 2015). Similar to the effect of social status on RWs, we argue that decreased subjective social integration will have a negative effect on RWs: individuals who feel socially excluded will reduce their wage aspirations. In terms of benefit recipients, this may be a strategy to increase one's reemployment chances, which in turn would be an important step toward regaining social integration.

We derive the following hypothesis from these considerations:

H6: Subjective social integration partly explains the intraindividual changes in RWs between different institutional states of benefit receipt.

## 3. State of research

Empirical studies on RWs and labor supply mostly rely on a survey measurement of individual RWs for decades (e.g. Barron and Mellow, 1981; Feldstein and Poterba, 1984; Jones, 1988, 1989; Hohmeyer and Wolff, 2018; Fedorets and Shupe, 2021). This measurement usually consists of a question in which the respondent is asked to determine the minimum monthly net income that an employer would have to pay to the respondent to take on a job. Then, the hourly RW is calculated from this amount and the preferred work hours that the respondent reports in a subsequent question. Almost all surveys only ask unemployed respondents to report this minimum income. The measurement has been validated in many studies in various countries and has become common practice (e.g. Prasad, 2000; Lammers, 2014; Kesternich *et al.*, 2020). The current study and the studies reported in the following consistently build on this established measurement approach.<sup>3</sup>

3 In fact, some studies challenge the idea of measurable and/or stationary RWs (e.g. Kiefer and Neumann, 1979; Blau, 1991). However, the scientific community, to a large extent, does not share these doubts as indicated by the numerous studies that rely on this survey measure. Numerous studies on RWs deal with the (non)stationarity of RWs with a focus on the causal effect of unemployment duration on RWs. These studies conclude that the dynamics are rather limited. In most modern labor markets, RWs decrease only moderately over the unemployment spell (Addison *et al.*, 2013; Brown and Taylor, 2013; Krueger and Mueller, 2016; Deschacht and Vansteenkiste, 2021), with a slightly more accentuated decrease associated with benefit exhaustion (Fishe, 1982; Belzil, 1995). Some studies find no significant association between unemployment duration and RWs (Addison *et al.*, 2009; Pannenberg, 2010; Axelrad *et al.*, 2017). To the best of our knowledge, the only study that overcomes the focus on unemployment and investigates the effect of different institutional states on RWs is that of Bender *et al.* (2008). The study shows that the RWs of UIB recipients and WB recipients do not differ significantly. However, due to the study's cross-sectional design, causal interpretations of these findings are not warranted due to potential unobserved heterogeneity.

In addition, research has investigated various further determinants of RWs within recent decades. These studies show that income is positively associated with RWs (Jones, 1989; Hogan, 1999; Prasad, 2003). In line with that, the amount of received social transfers (e.g. UI) is a major component of income for unemployed individuals and is positively associated with RWs (e.g. Feldstein and Poterba, 1984; Shimer and Werning, 2007; Faberman and Ismail, 2020). This association seems to explain the higher RWs of unemployed social transfer recipients compared to unemployed non-recipients (e.g. Sandell 1980; Faberman and Ismail, 2020). However, these studies tend to reduce the effects of social transfer receipt on RWs to their effect on household income. At the same time, other factors that might play a role in the effect of benefit receipt on RWs have been neglected by this line of research. Empirical studies that disentangle the income effects of social transfers on RWs from other socioeconomic influences, such as social status or social integration, are rare (for an exception, see Vishwanath, 1989).

Concerning activation measures of the respective benefit schemes, a part of the literature deals with the impact of benefit sanctions on reemployment probability (Abbring et al., 2005; Lalive et al., 2005; Svarer, 2011; Boockmann et al., 2014; Van den Berg et al., 2014). Despite that, the impact of benefit sanctions (or their sheer possibility or threat) on the RW as the outcome has not yet been investigated. A rare exception is the study by Schneider (2010) for Germany's WB after the social reforms of 2005. The study shows that although benefit sanctions increase reemployment probability, they do not decrease the RW or job search intensity. Due to the use of cross-sectional data, however, the results should not be causally interpreted. Moreover, the results contradict the methodologically more advanced study by Hohmeyer and Wolff (2018), which shows that activation measures that are far more moderate than benefit sanctions already have a negative effect on RWs. Even the sheer announcement of such a moderate measure by the employment agency, in concrete terms the 'One-Euro-Job' workfare measure (for an overview, see Gundert and Hohendanner, 2015), has a significant effect on hourly RWs. However, this study does not investigate intraindividual changes in RWs. Nonetheless, this evidence of the effectiveness of a comparatively moderate activation measure suggests that individuals anticipate potential benefit sanctions. In line with that, it appears likely that other activation measures are also anticipated and priced into RWs after a transition into a respective institutional state such as UIB or WB receipt.

In summary, we can derive the following main results from the literature:

- Unemployment duration has a weak, negative effect on RWs, while there is limited evidence on differences in the effect of UIB and WB receipt duration on RWs.
- Income has a positive effect on RWs. In line with this, benefit generosity has a positive effect on RWs among unemployed and other benefit recipients.
- Evidence on the effects of activation measures on RWs among unemployed and other groups of benefit recipients is mixed.

Furthermore, there is very little research on the intraindividual dynamics of RWs caused by institutional states with varying degrees of activation. Neither do these studies address nonmonetary socioeconomic factors such as social status and social integration, which could mediate the relationship between different institutional states and RWs in addition to the obtained income. Our main contribution to the literature is to overcome these limitations and to generate evidence that is presumably less prone to bias than previous cross-sectional studies due to our focus on intraindividual RW dynamics.

## 4. Data and methods

#### 4.1. Data

We use longitudinal data from the panel study 'Labor Market and Social Security' (PASS) (Trappmann *et al.*, 2013). PASS is an ongoing large-sample household panel survey that has been conducted annually throughout Germany since 2006. In the first wave, the sample comprised 18 954 persons in 12 794 households, with roughly equal shares of a representative population sample and a representative sample of WB recipients. In each of the survey waves following 2006, the panel was replenished by an additional sample of approximately 1000 households of first-time WB recipients to avoid overrepresentation of long-term WB recipients. Replenishment samples were added in wave 5 for both the population and WB sample and in wave 11 only for the population sample. This sample design enables unique statistical power for analyses of WB recipients while at the same time providing representative coverage of the residential population. PASS furthermore contains rich information on the social and economic situation of the interviewed households and individuals above the age of 14 years.

To analyze the effects of institutional states on RWs, we use waves 1–12. Our analysis includes individuals aged 16–64 years. However, we removed respondents from our analysis who were 58 years or older prior to 2008. Due to a German special regulation, these UIB or WB recipients had the option to evade the activation instrument that requires proof of search efforts (Schneider, 2010). We also removed individuals without search obligations (e.g. caring for small children or relatives, illness), observations with missing values in the variables (listwise deletion) and individuals with only one observation due to our focus on intraindividual changes in fixed effects (FEs) panel regressions. As a result, our analytical sample consists of 47 645 observations from 11 216 individuals.

The dependent variable in our models is the surveyed RW. Current or former job seekers were asked for their expected net wage per month in the given or hypothetical job search process and their expected weekly working hours for a wage of that amount. Then, if the current or former job seekers did not accept working for a lower net wage per month, we calculate the hourly RW from the expected net wage per month and expected weekly working hours. If the current or former job seekers accepted working for a lower net wage per month, they were asked for the lowest net wage per month they would accept as well as their approximated working hours per week for a wage of that amount. This information enables us to calculate the hourly RWs of the remaining current and former job seekers. In the next step, we removed outliers with RWs above the 99th percentile from our sample (i.e. net hourly RWs >  $\leq 23.08$ ) and deflated the RWs using the annual national consumer price index (period 2007–2018; reference year 2015) (Destatis, 2020). For further information on the distribution of the RW variable, see Supplementary Appendix Figure A1 and Table A1.

The RW measure in PASS provides a genuine advantage. To the best of our knowledge, PASS is the only large-scale panel survey that provides RWs not only for unemployed or job-searching respondents but also for all respondents who were looking for a job at least once in their lives (i.e. the vast majority of the adult population). Hence, PASS allows us to investigate the effect of all possible transitions between different institutional states on RWs.

To examine the effect of institutional states on RWs, we use a categorical measure that covers different institutional states with different degrees of activation (i.e. unemployed or employed). For unemployed individuals, who are all registered with the Federal Employment Agency, we differentiate between UIB recipients (1) and WB recipients (2).<sup>4</sup> For the employed, we differentiate those who are gainfully employed and receive no UIB or WB (3) and those who are employed and additionally receive WB (in-work benefits) (4). While the first three categories do not include marginally employed individuals, the fourth category does. All four categories differ by their degree of activation. In addition to a categorical specification, we use the durations of UIB and WB receipt (both in years) to study the development of RWs over time.

As part of our mediation analysis, we use the equivalized net household income per month (in  $\notin$ 1000) to examine income-related consequences of benefit receipt. The income measure is based on the modified OECD (Organisation for Economic Co-operation and Development) equivalence scale (Hagenaars *et al.*, 1994). To test for nonmonetary mechanisms, we use two measures of subjective social status and subjective social integration that have been previously used in the literature (e.g. regarding social status, see Kelley and Evans, 1995; Krug and Eberl, 2018; for an example regarding social integration, see Gundert and Hohendanner, 2015). For the measurement of subjective social status, the PASS respondents were asked to classify their social status on a scale from 1 to 10, with 1 indicating at the 'bottom' and 10 indicating at the 'top' of the society (Q: 'There are groups in our society, which tend to be rather at the top and other groups, which are at the bottom. How would you rank yourself (...)?'). Our examination of the second social mechanism also relies on self-classification: The respondents were asked to assess their degree of social integration on

4 In Germany, neediness is determined on the household level (see an overview of the institutional background in the online appendix). Accordingly, PASS measures UIB receipt on the individual level and WB receipt on the household level. If respondents live in a needy household (i.e. with WB receipt) and receive UIBs at the same time, we classify them as WB recipients. As a robustness check, we classified those respondents as UIB recipients. Our results have not changed.

a 10-point scale, with 1 indicating 'excluded' and 10 indicating 'integrated' (Q: 'To what extent do you feel a part of society, or do you feel rather excluded?').

In our regression analysis, we control for the following time-varying covariates: age groups, marital status, number of children, household size, residence in West or East Germany, general school or vocational education in years, work experience and survey waves.<sup>5</sup> In pooled ordinary least squares (POLS) regression models, we additionally control for gender, migration background and PASS subsample. Supplementary Appendix Table A2 shows the descriptive statistics of the variables used in our analysis.

#### 4.2. Analytical approach

To investigate Hypotheses 1–3, we estimated POLS and FEs panel regressions. The results from POLS serve as a benchmark for results previously reported in the literature, which were mainly based on cross-sectional data. However, similar to cross-sectional regressions, POLS might suffer from bias due to unobserved heterogeneity. In particular, individuals embedded in different institutional states, such as gainful employment, UIB receipt, and WB receipt, might systematically differ with respect to RWs as well as their determinants, such as educational background, occupation and labor market experience.

Hence, the focus of our interpretation is on the results from FEs models, which control for unobserved time-constant confounders at the person level (Brüderl and Ludwig, 2015). Specifically, we estimate the following regression model:

$$Y_{it} = \alpha_i + \beta X'_{it} + \epsilon_{it}$$

where  $\alpha_i$  are individual FEs,  $X'_{it}$  is a set of covariates and  $\epsilon_{it}$  is an idiosyncratic error term. Due to the inclusion of individual FEs, the approach solely takes into account intraindividual changes (within variation), for example, the change of the hourly RW associated with an intraindividual change from employment to UIB receipt.

Using FEs models, we first investigate the effects of institutional states (X) on hourly RWs (Y) (H1–H2). In addition to a categorical specification of institutional states, we explore how the duration of UIB and WB receipt affects RWs (H3). Since a linear specification of the association between duration and RWs might impose too strong parametric restrictions, we additionally estimate models with time-distributed FEs, also known as dummy impact functions (Allison, 1994):

$$Y_{it} = \alpha_i + \gamma_t + \beta X_{it} + \epsilon_{it}$$

where  $\gamma_t$  are indicator variables that measure the duration of UIB and WB receipts (grouped). By that, person-years without UIB or WB receipt serve as a reference.

In a second step, also based on FEs models, we conduct mediation analyses (Wu and Zumbo, 2008) to test which mechanisms (M) explain the effects of institutional states on hourly RWs (H4–H6). Our approach follows the procedure proposed by Baron and Kenny (1986), which is also employable with multicategorical independent variables (Hayes and Preacher, 2014). In the first step, we estimate the total effects of institutional states on hourly

5 Experimental evidence shows that minimum wage introductions can lead to higher RWs (Falk *et al.*, 2006). Against the background of the minimum wage introduction in 2015, adjusting for period effects is of particular importance.

RWs (X  $\rightarrow$  Y). To identify a mediation effect, three conditions must be fulfilled. First, the mediator is affected by the institutional state (X  $\rightarrow$  M); second, the mediator affects hourly RWs (M  $\rightarrow$  Y); and third, the indirect effect of X on Y via M is of substantial size and statistically significant. The indirect effect is the product of the coefficient that reflects the effect of the institutional state (X) on the mediator variable (M) and the coefficient that reflects the effect of the mediator variable (M) on RWs (Y). In other words, it reflects the difference between the effect of the institutional state on hourly RWs with and without controlling for the analyzed mediator variable. To test the indirect effects, we use Sobel tests (Sobel, 1982).

## 5. Results

#### 5.1. The effect of benefit receipt on RWs

Model POLS1 of Table 1 shows how benefit receipt correlates with RWs. Compared to gainful employment, all three states of benefit receipt—UIB receipt, WB receipt and working with supplementary WB receipt (in-work benefits)—lead to a significant reduction in RWs in the range of 8.7–10.7%. Wald tests (results available on request) indicate that only the effects of WB receipt and in-work benefit receipt are significantly different. FEs estimates are similar to the POLS results (see FE1 of Table 1). However, the coefficient for WB receipt halves in magnitude, while the coefficients for UIB receipt and in-work benefit are only approximately one-third of the POLS estimates. This result clearly indicates that POLS is biased by unobserved heterogeneity. Therefore, we do not report any further POLS results for the remainder of this section (see Supplementary Appendix Tables A3, A4 and A5 for POLS estimates).

The FEs results show that receiving UIB compared to gainful employment significantly reduces hourly RWs by 3.1% [=  $100 \cdot (e^{-0.032} - 1)$  percent] on average (see FE1 of Table 1). This means that an individual with an RW at the median level (see Supplementary Appendix Table A1) is expected to reduce her hourly RW from  $\in 8.91$  to  $\in 8.63$  when confronted with UIB receipt. Similarly, WB receipt (4.9%) and the receipt of in-work benefits (3.6%) significantly reduce hourly RWs compared to gainful employment.

The order of the point estimates by their effect strength (see FE1 of Table 1) suggests that the reductions in RWs are in line with the respective degree of activation. To examine which of the coefficients in Table 1 are significantly different, we conducted Wald tests (results available on request). The tests show significant differences for the coefficients of UIB and WB receipts (P < 0.05) and the coefficients of WB receipt and in-work benefits (P < 0.10). This means that benefit receipt leads to reductions in RWs compared to gainful employment and that differences between different types of benefit receipt exist.<sup>6</sup>

6 We conducted several robustness and sensitivity checks: First, we checked if currently non-sanctioned and sanctioned welfare benefit recipients differ in RWs. As the differences are small and statistically insignificant, we decided to classify them as one group. Second, we restricted the sample to individuals with a high probability of changing from UIB to WB receipt. This analysis, based on individuals with WB experience before or after their period of UIB receipt, has produced qualitatively similar results compared to the results of our main analysis. Third, we explored whether the direction of the respective transitions is of importance for our results. For example, we checked if the effect of a transition from gainful employment into WB receipt is different from the effect of a transition from UIB receipt into WB receipt. Qualitatively, the effects were similar in terms of effect sizes; however, due to low transition numbers from UIB into WB receipt and a related lack of statistical power, not all these effects turned out to be statistically significant despite similar effect sizes. Finally, gender-

DV: net hourly RWs (ln)	POLS1	FE1	FE2	FE3
Gainfully employed (ref.)				
UIB receipt	$-0.104^{***}$	-0.032***		
	(0.009)	(0.007)		
WB receipt	-0.113***	$-0.050^{***}$		
*	(0.006)	(0.007)		
Employed and WB receipt	-0.091***	$-0.037^{***}$		
1, 1	(0.007)	(0.007)		
UIB duration (months)			-0.0005	
· · · · ·			(0.0007)	
WB duration (months)			-0.0005***	
			(0.0001)	
No UIB receipt (ref.)			· · · ·	
1 ( )				
UIB receipt 1–3 months				-0.010
1				(0.010)
UIB receipt 4–6 months				$-0.025^{*}$
				(0.012)
UIB receipt 7–9 months				-0.025
				(0.016)
UIB receipt 10–12 months				-0.055**
				(0.020)
UIB receipt $> 12$ months				-0.011
				(0.019)
No WB receipt (ref.)				
WB receipt 1–3 months				$-0.060^{**}$
				(0.013)
WB receipt 4–6 months				-0.044***
"D'receipe '' o moneno				(0.013)
WB receipt 7–9 months				-0.067**
				(0.025)
WB receipt 10–12 months				$-0.028^{*}$
				(0.013)
WB receipt $> 12$ months				-0.041***
w Directific > 12 months				(0.006)
Controls included?	Yes	Yes	Yes	Yes
(Within) $R^2$	0.280	0.051	0.050	0.051
Observations	47 645	47 645	47 64 5	47 645
Number of persons		11 216	11 216	11 216
······································				10

Table 1 Effect of benefit receipt on net hourly RWs (In)

Notes: Robust standard errors in parentheses. Significance levels:

\*\*\*P < 0.001;

\*\*P < 0.01;

\*P < 0.05.

Estimates are based on POLS and FEs panel regressions. Full regression tables can be found in the Supplementary Appendix Tables A3 and A5. Controls: work experience (decades), work experience (decades), work experience (decades), general education and vocational school (years), residence in West Germany, household size, number of children, marital status, age, survey waves, gender (POLS), migration background (POLS), PASS subsample (POLS). *Data source:* Waves 1–12 of the panel study 'Labor Market and Social Security' (PASS), own calculations.



**Figure 1.** Changes in RWs during benefit receipt. *Note:* Figures based on FE estimates (see model FE3 of Table 1). *Data source:* Waves 1–12 of the panel study 'Labor Market and Social Security', own calculations.

Model FE2 of Table 1 illustrates the effect of the durations of UIB and WB receipt on RWs. This model shows that only the duration of WB receipt significantly affects RWs, whereas the linear effect of the duration on UIBs is insignificant (see FE2 of Table 1). WB receipt on average reduces hourly RWs by 0.6% per year [=  $12 \cdot 100 \cdot (e^{-0.0005} - 1)$  percent]. However, a linear effect specification might be overly restrictive.

The dummy impact function in Figure 1 (see also model FE3 of Table 1) confirms this assumption and reveals that the linear specification provides misleading results in two ways. First, the effect of the duration of WB receipt does not follow a clear time trend. In contrast, the effect of WB receipt varies unsystematically over time and, depending on the exact duration, reduces RWs by 2.8–6.5%. Second, the dummy impact function reveals a nonlinear relationship of UIB receipt duration and RWs. Compared to gainful employment, UIB receipt reduces RWs by 2.5% in months 4–9 (joint test for these months: P < 0.05). The reduction then becomes markedly stronger in months 10–12, with an average reduction in RWs of 5.4%. This suggests that beneficiaries reduce their RW in anticipation of the ending of UIB receipt, which is usually limited to 12 months.

In summary, our results indicate that benefit receipt leads to changes in RWs and suggest that the intensity of activation plays an important role (support for H1 and H2).

specific analyses (results available on request) reveal that UIB has a stronger impact on the RWs of women, while the RWs of men are not affected by UIB. Further research is needed to elucidate this difference.

Furthermore, the results show that RWs are not completely stationary but rather depend on the duration of benefit receipt in complex ways, such as nonlinear associations and anticipation effects (support for H3).

#### 5.2. Mediation Analysis

In the following, we examine the mechanisms of household income, subjective social status and social integration. In contrast to social status and integration, income is a leverage point of activation policies. However, negative effects on subjective social status and social integration might be unintended consequences of activation that can lead to lower RWs. As illustrated in Supplementary Appendix Figure A2 (see also Supplementary Appendix Table A6), household income, subjective social status and subjective social integration decrease significantly during UIB and WB receipt. Next, we investigate whether these declines in household income, subjective social status, and subjective social integration translate into changes in RWs.

Table 2 shows the results of the mediation analyses based on FEs regressions. The results illustrate that each state of benefit receipt leads to a significant reduction of the net logged equivalized household income in  $\notin$ 1000 compared to gainful employment. UIB receipt, WB receipt, and in-work benefit receipt lead to a reduction in household income by 10.2, 16.7 and 12.8%, respectively (see [X  $\rightarrow$  M] in column FE1 of Table 2). Moreover, household income has a significant positive effect on RWs (see [M  $\rightarrow$  Y] in column FE1 of Table 2). A one percent increase in household income translates into an increase in RWs by 0.1% on average. Overall, the indirect effects explain more than a quarter but less than a third of the impact of benefit receipt on RWs (see the indirect effect in column FE1 of Table 2).

Table 2 also reveals that the different types of benefit receipt have a strong negative effect on subjective social status (see  $[X \rightarrow M]$  in column FE2 of Table 2). Institutional states with a higher degree of activation have stronger effects on social status. However, at the same time, subjective social status has a small positive impact on hourly RWs (see  $[M \rightarrow Y]$  in column FE2 of Table 2). The indirect effects of the different types of benefit receipt via subjective social status are statistically significant but small (see the indirect effect in column FE2 of Table 2). Thus, subjective social status partly mediates the effect of benefit receipt on RWs but seems of less relevance than income in terms of explanatory power.

In contrast, subjective social integration does not mediate the effect of benefit receipt on RWs at all. The indirect effects are small and insignificant (see the indirect effect in column FE3 of Table 2). The pathway from benefit receipt via subjective social integration to hourly RWs is incomplete: Like it is the case for social status, all states of benefit receipt have a marked negative effect on subjective social integration (see  $[X \rightarrow M]$  in column FE3 of Table 2), and effect strength varies with the degree of activation. However, subjective social integration has no impact on hourly RWs (see  $[M \rightarrow Y]$  in column FE3 of Table 2).

In summary, our results show that the effects of benefit receipt on RWs are partly explained by household income and subjective social status but not by subjective social integration. However, only household income explains a substantial part of the effects

Institutional state (X)	Mediator (M): net equivalized household income in €1000 (ln) FE1	Mediator (M): subjective social status FE2	Mediator (M): subjective social integration FE3
UIB receipt (ref.: gainfully	employed)		
Total effect $(X \to Y)$	-0.032***	$-0.032^{***}$	-0.032***
	(0.007)	(0.007)	(0.007)
$X \to M$	$-0.108^{***}$	$-0.256^{***}$	$-0.422^{***}$
	(0.006)	(0.043)	(0.056)
$M \to \Upsilon$	0.087***	0.003**	0.001
	(0.010)	(0.001)	(0.001)
Indirect effect	$-0.009^{***}$	$-0.001^{*}$	-0.000
	(0.001)	(0.000)	(0.000)
WB receipt (ref.: gainfully	employed)		
$Total \; effect \; (X \to Y)$	$-0.050^{***}$	$-0.050^{***}$	$-0.050^{***}$
	(0.007)	(0.007)	(0.007)
$X \to M$	$-0.183^{***}$	$-0.788^{***}$	$-0.988^{***}$
	(0.005)	(0.039)	(0.049)
$M \to \Upsilon$	0.087***	0.003**	0.001
	(0.010)	(0.001)	(0.001)
Indirect effect	$-0.016^{***}$	-0.003**	-0.001
	(0.002)	(0.001)	(0.001)
Employed WB receipt (ref.	: gainfully employed)		
Total effect $(X \rightarrow Y)$	$-0.037^{***}$	-0.037***	$-0.037^{***}$
	(0.007)	(0.007)	(0.007)
$X \to M$	$-0.137^{***}$	$-0.570^{***}$	$-0.608^{***}$
	(0.005)	(0.039)	(0.051)
$M \to \Upsilon$	0.087***	0.003**	0.001
	(0.010)	(0.001)	(0.001)
Indirect effect	$-0.012^{***}$	$-0.002^{**}$	-0.001
	(0.001)	(0.001)	(0.001)

Table 2 Mediation analysis for the effects of benefit receipt (X) on hourly RWs (In) (Y)

Notes: Robust standard errors in parentheses. Significance levels:

Analysis based on 47 645 observations of 11 216 persons. Estimates are based on FEs panel regressions. Total effect  $(X \rightarrow Y)$  reflects the effect of the respective institutional state (X) on RWs (Y) from a regression model without control for mediator variables (see Supplementary Appendix Table A3);  $(X \rightarrow M)$  reflects the effect of the respective institutional state (X) on the analyzed mediator (M) from a regression model (see Supplementary Appendix Table A4);  $(M \rightarrow Y)$  reflects the effect of the analyzed mediator (M) on RWs (Y) from a regression model (see Supplementary Appendix Table A4);  $(M \rightarrow Y)$  reflects the effect of the analyzed mediator (M) on RWs (Y) from a regression model (see Supplementary Appendix Table A3); indirect effect reflects the effect of (X) via (M) on (Y) and is the product of  $(X \rightarrow M)$  and  $(M \rightarrow Y)$ , for the significance tests of the indirect effects and calculation of the standard errors we used an approach proposed by Sobel (1982). Controls: work experience (decades), work experience (decades), general education and vocational school (years), residence in West Germany, household size, number of children, marital status, age, survey waves.

\*\*P < 0.01;

\*P < 0.05.

Data source: Waves 1-12 of the panel study 'Labor Market and Social Security' (PASS), own calculations.

<sup>\*\*\*</sup>P < 0.001;

the different types of benefit receipt have on RWs. Thus, our results provide support for H4, partial support for H5 and no support for H6.  $^7$ 

#### 6. Summary and conclusion

Based on microeconomic theory and sociological life-course theory, we proposed a socioeconomic framework for analyzing the effects of institutional embeddedness on labor supply. Drawing on the notion that the welfare state's life-course policy embeds individuals of working age into institutions with varying degrees of activation, this framework provides an innovative conceptual basis that allows for the derivation of testable hypotheses on RW dynamics. Theorizing the link between labor market institutions and RWs in this framework, we mainly focus on two aspects: first, we expect RWs to react to transitions between institutional states such as UIB and WB receipt due to different degrees of activation, and second, our framework predicts that economic and social mechanisms regarding household income, social status and social integration drive these effects.

In the empirical part of our article, we used rich German longitudinal survey data to test these considerations. These data allowed us to contribute to the literature by investigating RW dynamics not only for unemployed individuals but also for all individuals who searched for a job at least once in their lives. Covering virtually the whole working-age population, our study goes beyond previous research by examining the effects of transitions from employment into unemployment and into welfare receipt. Moreover, the large sample size, the panel structure and the long observation window enabled us to track intraindividual transitions and RW dynamics over time. By that, we were able to conduct regression and mediation analyses with individual FEs as a data-intensive statistical technique that, in contrast to previous crosssectional studies, does not suffer from bias due to unobserved heterogeneity.

The estimated models show considerable support for most of the derived hypotheses, pointing to the importance of embeddedness in activating labor market institutions for RWs. According to our estimates, the transition from gainful employment to UIB receipt leads to an average decrease of 3.1% in RWs, while the transition from gainful employment to WB receipt is associated with an average decrease of 4.9%. In addition, looming UIB exhaustion is associated with a significant drop in RWs, suggesting that UIB recipients anticipate tightening activation measures of a potential succeeding WB receipt. In sum, the results point to the picture of an activating labor market regime in Germany that, at least as concerns its effects on the wage aspirations of benefit recipients, works as intended by policy makers.

Our mediation analyses demonstrate that household income is the predominant mechanism that mediates the relationship between institutional states and RWs. We also identified social status as a relevant mediator, demonstrating that social mechanisms are simultaneously at work. Social integration, however, has not turned out to be a significant

7 These results suggest that other relevant mechanisms are simultaneously at work. Hence, we additionally tested whether material deprivation and self-rated health explain the effects of benefit receipt on RWs. Our results show that benefit receipt has negative effects on subjective health and positive effects on the material deprivation index [X→M]. However, similarly to the results for social integration, the potential mediators were unrelated to RWs [M→Y]. Furthermore, analyses by gender show some relevant effect heterogeneity: first, indirect effects via household income are stronger for men, explaining half of the effects of WB receipt and employed WB receipt, and second, the indirect effects via social status only hold for men.

mediator. As a critical result, the analyses show that all investigated benefit schemes have strong negative effects on social status and social integration. Another related critical point made by previous research is the practical desirability of RW decreases as such. Wage concessions can lead to hasty job take-up with suboptimal employer–employee matches, destabilizing subsequent employment careers over the life course (Gangl, 2004). Job insecurity and unstable employment trajectories are known to cause lasting scars on the subjective well-being of individuals (Knabe and Rätzel, 2011; Eberl *et al.*, 2021). It should thus be carefully considered whether activation truly leads to improved long-run societal outcomes. Therefore, the main policy implication of our study is that decreasing RWs through activation is an ambiguous tool for increasing labor supply that should only be used in conjunction with effective measures that prevent negative side effects.

There are also limitations of our study that should be addressed in future research. First, we cannot rule out reverse causality between institutional states and RWs, as studies report the effects of RWs on benefit receipt. This points to the possible selection of individuals with low RWs into employment (e.g. Prasad, 2000; Bloemen and Stancanelli, 2001). While our FEs approach controls for bias due to unobserved time-constant differences between individuals, the method is no silver bullet against issues of reverse causality (Leszczensky and Wolbring, 2019).

Second, we did not disentangle the effects of specific activation measures: Since one focus of our study was generalizability, we did not further differentiate our independent variable into numerous single activation measures. Instead, we used a more general and compact measure of four main institutional states that individuals of working age can obtain not only in the German but also in many modern labor market regimes. Therefore, the effects of institutional states revealed by our study should be replicated in other countries. At the cost of less generalizability, however, further research can also, and should, focus on a specific institutional state and then investigate the effects of the activation measures specific to this state, contributing to a more fine-grained picture of activation instruments (e.g. Hohmeyer and Wolff, 2018).

Third, we did not investigate the behavioral effects of embeddedness in activating labor market institutions. Since the focus of our study was RW dynamics, we did not investigate the relationship between activating labor market institutions and observed labor market behavior such as job search intensity or job take-up. Many studies, which, however, did not include RWs in their empirical analyses, do suggest substantial behavioral effects: benefit sanctions, for instance, as the arguably most rigorous activation measure, are associated with increased reemployment probability (Abbring *et al.*, 2005; Svarer, 2011; Van den Berg *et al.*, 2014). Future research should establish the link between this line of studies and our results, investigating RWs as the mediator of the relationship between activating labor market institutions and reemployment. However, concerning policy implications, the results of these studies are consistent with our study. They show that benefit sanctions lead to the take-up of comparatively unstable employment relationships with corresponding risks of welfare recidivism, underlining our main conclusion regarding the ambiguity of activating social policy.

#### Supplementary material

Supplementary material is available at SOCECO Journal online.

## **Conflict of interest**

The author(s) declared no potential conflicts of interest with respect to research, authorship, and/or publication of this article.

# Funding

The research report in this paper was supported by a grant from the German Research Foundation (project title "A life-course perspective on labor supply"; project number 428176162).

# Acknowledgments

All authors contributed equally. The authors would like to thank Martin Abraham for very valuable suggestions and comments on the research project, Thanh Tam Bui for invaluable research assistance and the participants of the sociological research colloquium at the University of Wuppertal for helpful comments. Benjamin Fuchs thanks the ASH Internal Research Promotion (IFF) for permissive support. Our Stata code is publicly and permanently available at https://osf.io/j6epk/. Access to the scientific use file of the panel study 'Labour Market and Social Security' (PASS) can be requested at the research data center of the Institute for Employment Research (IAB).

# References

- Abbring, J. H., Berg, G. J. and Ours, J. C. (2005) 'The Effect of Unemployment Insurance Sanctions on the Transition Rate from Unemployment to Employment', *The Economic Journal*, **115**, 602–630.
- Addison, J. T., Centeno, M. and Portugal, P. (2009) 'Do Reservation Wages Really Decline? Some International Evidence on the Determinants of Reservation Wages', *Journal of Labor Research*, 30, 1–8.
- Addison, J. T., Machado, J. A. F. and Portugal, P. (2013) 'The Reservation Wage Unemployment Duration Nexus', Oxford Bulletin of Economics and Statistics, 75, 980–987.
- Allison, P. D. (1994) 'Using Panel Data to Estimate the Effects of Events', Sociological Methods & Research, 23, 174–199.
- Anxo, D. and Erhel, C. (2008) 'Irréversibilité du Temps, Réversibilité Des Choix? Les Fondements Des ≪Marchés Transitionels≫ en Termes de Trajectoires de Vie', *Revue Française de Socio-Économie*, 1, 199.
- Axelrad, H., Luski, I. and Malul, M. (2017) 'Reservation Wages and the Unemployment of Older Workers', *Journal of Labor Research*, 38, 206–227.
- Baron, R. M. and Kenny, D. A. (1986) 'The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations', *Journal of Personality and Social Psychology*, 51, 1173–1182.
- Barron, J. M. and Mellow, W. (1981) 'Changes in Labor Force Status among the Unemployed', The Journal of Human Resources, 16, 427–441.
- Belzil, C. (1995) 'Unemployment Duration Stigma and Re-Employment Earnings', The Canadian Journal of Economics, 28, 568–585.
- Bender, S., Koch, S., Meßmann, S. and Walwei, U. (2008) 'What Are the Long-Term Unemployed Prepared to Impose upon Themselves? Wage Concessions Made by Unemployment Benefit II (ALGII) Recipients', Sozialer Fortschritt, 57, 75–84.

- Blau, D. M. (1991) 'Search for Nonwage Job Characteristics: A Test of the Reservation Wage Hypothesis', *Journal of Labor Economics*, 9, 186–205.
- Bloemen, H. and Stancanelli, E. (2001) 'Individual Wealth, Reservation Wages, and Transitions into Employment', *Journal of Labor Economics*, 19, 400–439.
- Boockmann, B., Thomsen, S. L. and Walter, T. (2014) 'Intensifying the Use of Benefit Sanctions: An Effective Tool to Increase Employment', *IZA Journal of Labor Policy*, 3, 1–19.
- Bonoli, G. (2010) 'The Political Economy of Active Labor-Market Policy', *Politics & Society*, 38, 435–457.
- Borjas, G. J. (2013) Labor Economics, New York, NY, McGraw-Hill Companies.
- Brown, S. and Taylor, K. (2013) 'Reservation Wages, Expected Wages and Unemployment', *Economics Letters*, 119, 276–279.
- Brüderl, J. and Ludwig, V. (2015) 'Fixed-Effects Panel Regression'. In Best, H. and Wolf, C. (eds) The Sage Handbook of Regression Analysis and Causal Inference, London, SAGE, pp. 327–357.
- Christoph, B. and Lietzmann, T. (2013) 'Je länger, je weniger? Zum Zusammenhang zwischen der Dauer des ALG-II-Leistungsbezugs und den materiellen Lebensbedingungen der Betroffenen', Zeitschrift für Sozialreform, 59, 167–196.
- Clasen, J. and Clegg, D. (2006) 'Beyond Activation: Reforming European Unemployment Protection Systems in Post-Industrial Labour Markets', *European Societies*, 8, 527–553.
- Cox, J. C. and Oaxaca, R. L. (1992) 'Direct Tests of the Reservation Wage Property', The Economic Journal, 102, 1423–1432.
- Deschacht, N. and Vansteenkiste, S. (2021) 'The Effect of Unemployment Duration on Reservation Wages: Evidence from Belgium', *Labour Economics*, 71, 102010.
- Destatis. (2020) 'Verbraucherpreisindizes für Deutschland. Lange Reihen ab 1948', *Statistisches Bundesamt*, No. 7/2020.
- Dinan, S. (2019) 'A Typology of Activation Incentives', Social Policy & Administration, 53, 1-15.
- Eberl, A., Collischon, M. and Wolbring, T. (2021) 'Subjective Well-Being Scarring through Unemployment: New Evidence from a Long-Running Panel', *SocArXiv*, accessed at https://doi. org/10.31235/osf.io/t57cd on February 6, 2022.
- Eichhorst, W., Grienberger-Zingerle, M. and Konle-Seidl, R. (2010) 'Activating Labor Market and Social Policies in Germany: From Status Protection to Basic Income Support', *German Policy Studies*, 6, 65–106.
- Eichhorst, W. and Konle-Seidl, R. (2008) Contingent Convergence: A Comparative Analysis of Activation Policies, IZA Discussion Papers No. 3905, Bonn, Germany, Institute for the Study of Labor (IZA).
- Elder, G. H., Johnson, M. K. and Crosnoe, R. (2003) 'The Emergence and Development of Life Course Theory'. In Mortimer, J. T. and Shanahan, M. J. (eds) *Handbook of the Life Course*, New York, NY, Plenum, pp. 3–19.
- Ezzy, D. (1993) 'Unemployment and Mental Health: A Critical Review', Social Science and Medicine, 37, 41–52. http://dx.doi.org/10.1016/0277-9536(93)90316-V
- Faberman, R. J. and Ismail, A. H. (2020) 'How Do Unemployment Insurance Benefits Relate to Job Search Behavior?', Chicago Fed Letter, No. 441, Federal Reserve Bank of Chicago.
- Falk, A., Fehr, E. and Zehnder, C. (2006) 'Fairness Perceptions and Reservation Wages—the Behavioral Effects of Minimum Wage Laws', *The Quarterly Journal of Economics*, 121, 1347–1381.
- Fedorets, A. and Shupe, C. (2021) 'Great Expectations: Reservation Wages and the Minimum Wage Reform', *Journal of Economic Behavior & Organization*, 183, 397–419.
- Feldstein, M. and Poterba, J. (1984) 'Unemployment Insurance and Reservation Wages', *Journal* of *Public Economics*, 23, 141–167.

- Fishe, R. P. (1982) 'Unemployment Insurance and the Reservation Wage of the Unemployed', *The Review of Economics and Statistics*, 64, 12–17.
- Fryer, D. (1986) 'Employment Deprivation and Personal Agency during Unemployment: A Critical Discussion of Jahoda's Explanation of the Psychological Effects of Unemployment', *Social Behaviour*, 1, 3–23.
- Gangl, M. (2004) 'Welfare States and the Scar Effects of Unemployment: A Comparative Analysis of the United States and West Germany', *American Journal of Sociology*, **109**, **1319–1364**.
- Granovetter, M. (1985) 'Economic Action and Social Structure: The Problem of Embeddedness', American Journal of Sociology, 91, 481–468.
- Gross, C., Gurr, T., Jungbauer-Gans, P. M. and Lang, S. (2020) 'Prejudices against the Unemployed Empirical Evidence from Germany', *Journal for Labour Market Research*, 54, 13.
- Gundert, S. and Hohendanner, C. (2015) 'Active Labour Market Policies and Social Integration in Germany: Do 'One-Euro-Jobs' Improve Individuals' Sense of Social Integration', *European Sociological Review*, 31, 780–797.
- Hagenaars, A. J. M., de Vos, K., and Asghar Zaidi, M. (1994) Poverty Statistics in the Late 1980s: Research Based on Micro-Data, Luxembourg, Eurostat.
- Hayes, A. F. and Preacher, K. J. (2014) 'Statistical Mediation Analysis with a Multicategorical Independent Variable', *The British Journal of Mathematical and Statistical Psychology*, 67, 451–470.
- Hogan, V. H. (1999) The Determinants of the Reservation Wage, CER Working Paper 99/16, Dublin, Centre for Economic Research.
- Hohmeyer, K. and Wolff, J. (2018) 'Of Carrots and Sticks: The Effect of Workfare Announcements on the Job Search Behaviour and Reservation Wage of Welfare Recipients', *Journal for Labour Market Research*, 52, 11.
- Jahoda, M. (1982) Employment and Unemployment, Cambridge, Cambridge University Press.
- Jones, S. R. G. (1988) 'The Relationship between Unemployment Spells and Reservation Wages as a Test of Search Theory', *The Quarterly Journal of Economics*, **103**, 741–765.
- Jones, S. R. G. (1989) 'Reservation Wages and the Cost of Unemployment', *Economica*, 56, 225-246.
- Kalleberg, A. L. (2018) Precarious Lives: Job Insecurity and Well-Being in Rich Democracies, Cambridge, Polity Press.
- Kelley, J. and Evans, M. D. (1995) 'Class and Class Conflict in Six Western Nations', American Sociological Review, 60, 157–178.
- Kesternich, I., Schumacher, H., Siflinger, B. and Valderd, F. (2020) Reservation Wages and Labor Supply, CESifo Working Paper No. 8348, Munich, Center for Economic Studies.
- Kiefer, N. M. and Neumann, G. R. (1979) 'An Empirical Job-Search Model, with a Test of the Constant Reservation-Wage Hypothesis', *Journal of Political Economy*, 87, 89–107.
- Knabe, A. and Rätzel, S. (2011) 'Scarring or Scaring? The Psychological Impact of past Unemployment and Future Unemployment Risk', *Economica*, 78, 283–293.
- Krippner, G., Granovetter, M., Block, F., Biggart, N., Beamish, T., Hsing, Y., Hart, G., Arrighi, G., Mendell, M., Hall, J., Burawoy, M., Vogel, S. and O'Riain, S. (2004) 'Polanyi Symposium: A Conversation on Embeddedness', *Socio-Economic Review*, 2, 109–135.
- Krueger, A. B. and Mueller, A. I. (2016) 'A Contribution to the Empirics of Reservation Wages', American Economic Journal: Economic Policy, 8, 142–179.
- Krug, G. and Eberl, A. (2018) 'What Explains the Negative Effect of Unemployment on Health? An Analysis Accounting for Reverse Causality', *Research in Social Stratification and Mobility*, 55, 25–39.
- Kunze, L. and Suppa, N. (2017) 'Bowling Alone or Bowling at All? The Effect of Unemployment on Social Participation', *Journal of Economic Behavior & Organization*, 133, 213–235.

- Lalive, R., van Ours, J. C. and Zweimüller, J. (2005) 'The Effect of Benefit Sanctions on the Duration of Unemployment', *Journal of the European Economic Association*, **3**, 1386–1417.
- Lammers, M. (2014) 'The Effects of Savings on Reservation Wages and Search Effort', Labour Economics, 27, 83–98.
- Lancaster, T. and Chesher, A. (1983) 'An Econometric Analysis of Reservation Wages', Econometrica, 51, 1661–1676.
- Leisering, L. (2003) 'Government and the Life Course'. In Mortimer, J. T. and Shanahan, M. J. (eds) *Handbook of the Life Course*, New York, NY, Kluwer, pp. 205–225.
- Leszczensky, L. and Wolbring, T. (2019) 'How to Deal with Reverse Causality Using Panel Data? Recommendations for Researchers Based on a Simulation Study', *Sociological Methods & Research*, 004912411988247.
- Mayer, K. U. (2009) 'New Directions in Life Course Research', *Annual Review of Sociology*, 35, 413–433.
- McCall, J. J. (1970) 'Economics of Information and Job Search', The Quarterly Journal of Economics, 84, 113–126.
- McKee-Ryan, F., Song, Z., Wanberg, S. R. and Kinicki, A. J. (2005) 'Psychological and Physical Well-Being during Unemployment: A Meta-Analytic Study', *The Journal of Applied Psychology*, 90, 53–76.
- Pannenberg, M. (2010) 'Risk Attitudes and Reservation Wages of Unemployed Workers: Evidence from Panel Data', *Economics Letters*, **106**, 223–226.
- Pearlin, L. I., Lieberman, M. A., Menaghan, E. G. and Mullan, J. T. (1981) 'The Stress Process', Journal of Health and Social Behavior, 22, 337–356.
- Pohlan, L. (2019) 'Unemployment and Social Exclusion', Journal of Economic Behavior & Organization, 164, 273–299.
- Polanyi, K. (1957) 'The Economy as Instituted Process'. In Polanyi, K., Arensberg, C. M. and Pearson, H. W. (eds) *Trade and Market in the Early Empires: Economies in History and Theory*, Glencoe, IL, The Free Press, pp. 243–270.
- Prasad, E. S. (2000) 'The Dynamics of Reservation Wages: Preliminary Evidence from the GSOEP', Vierteljahrshefte zur Wirtschaftsforschung, 69, 44–50.
- Prasad, M. E. (2003) What Determines the Reservation Wages of Unemployed Workers? New Evidence from German Micro Data, IMF Working Paper 03/04, Washington, DC, International Monetary Fund.
- Sandell, S. H. (1980) 'Job Search by Unemployed Women: Determinants of the Asking Wage', ILR Review, 33, 368–378.
- Schmid, G. (2017) 'Transitional Labour Markets: Theoretical Foundations and Policy Strategies'. In Palgrave, M. (ed) *The New Palgrave Dictionary of Economics*, London, Palgrave Macmillan, pp. 1–15.
- Schmid, G. and Gazier, B. (2002) 'The Dynamics of Full Employment'. Social Integration through Transitional Labour Markets, Cheltenham/Northampton, Edward Elgar.
- Schneider, J. (2010) Activation of Welfare Recipients. Impacts of Selected Policies on Reservation Wages, Search Effort, Re-Employment and Health, Dissertation, Freie Universität Berlin.
- Shimer, R. and Werning, I. (2007) 'Reservation Wages and Unemployment Insurance', The Quarterly Journal of Economics, 122, 1145–1185.
- Sobel, M. E. (1982) 'Asymptotic Confidence Intervals for Indirect Effects in Structural Equation Models', Sociological Methodology, 13, 290–312.
- Svarer, M. (2011) 'The Effect of Sanctions on Exit from Unemployment: Evidence from Denmark', *Economica*, 78, 751–778.
- Trappmann, M., Bähr, S., Beste, J., Eberl, A., Frodermann, C., Gundert, S., Schwarz, S., Teichler, N., Unger, S. and Wenzig, C. (2013) 'The PASS Panel Survey after Six Waves', *Journal for Labour Market Research*, 46, 275–281.

- Van den Berg, G. J. and Uhlendorff, A. (2018) 'Economic Job Search and Decision-Making Models'. In Klehe, U. C. and van Hooft, E. A. J. (eds) *The Oxford Handbook of Job Loss and Job Search*, New York, NY, Oxford University Press, pp. 243–255.
- Van den Berg, G. J., Uhlendorff, A. and Wolff, J. (2014) 'Sanctions for Young Welfare Recipients', Nordic Economic Policy Review, 1, 177–208.
- Viebrock, E. and Clasen, J. (2008) 'Flexicurity and Welfare Reform: A Review', Socio-Economic Review, 7, 305–331.
- Vishwanath, T. (1989) 'Job Search, Stigma Effect, and Escape Rate from Unemployment', *Journal* of Labor Economics, 7, 487–502.
- Wu, A. D. and Zumbo, B. D. (2008) 'Understanding and Using Mediators and Moderators', Social Indicators Research, 87, 367–392.
- Wulfgramm, M. (2011) 'Can Activating Labour Market Policy Offset the Detrimental Life Satisfaction Effect of Unemployment?', Socio-Economic Review, 9, 477–501.