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Impact of Welfare Sanctions on Employment Entry and Exit from Labor Force — Evidence from German Survey Data [*]

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Abstract

Similar to numerous other European countries, Germany's unemployment policy went through a paradigm shift in 2005, towards activation policy by tightening their monitoring and sanction regime. With our study, we aim to provide causal evidence for whether an intended positive effect of benefit sanctions on employment entry of welfare recipients has been bought at the expense of an unintended enhanced incentive to leave the labor market. Using a mixed proportional hazard model, we draw causal inference of sanction enforcements on unemployment exit hazards. Based on a novel survey sample covering the first three years after the 'Hartz IV' law came into effect, we provide evidence for a positive impact of sanctions on employment as well as on exit from labor force.

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1 Introduction

During the last two decades, many European countries went through a paradigm shift in unemployment policy from welfare towards workfare, commonly referred to as 'activation policy'. In Germany, a comprehensive labor market reform based on the so-called 'Hartz laws' led to a substantial restructuring of the unemployment and social benefit system.[1] More than 6 million people were immediately affected by the implementation of the last reform step in January 2005; 4.5 million of them became entitled to the new unemployment benefits II (UB II), commonly known as 'Hartz IV'. The 'Hartz laws' entailed an extensive monitoring and sanction system, and work requirements were strengthened radically. Under the reformed system, a person must accept any job reardless of its impact upon their occupational skills or any other external effect.[2]

The purpose of this paper, therefore, is to look beyond the imperative of getting people employed at any price. In other words, our analysis complements employment entry with labor market dropout as another probable response to welfare sanctions. Crucially, we examine the effects of German welfare sanctions — namely the 'UB II' sanctions — on unemployment outflow in both directions, i.e. our analysis considers job entry and labor market dropout (also called 'non-employment') as equally plausible and important responses to welfare sanctions.[3]

We aim to demonstrate a causal connection between the use of German UB II sanctions — sanctions that are meant to encourage a swifter entry into employment — and an increased likelihood of labor market exit. Due to continuous pressure on the part of jobcenters, sanctioned welfare recipients may increase their search efforts or accept jobs with poorer conditions. However, as not everyone will successfully find a job that pays enough for them to leave the welfare system,[4] sanctions may actually drive some of these benefit recipients to search for alternatives beyond welfare and employment. Such

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[1] The reforms are named after Peter Hartz, the chief of the commision that set up the design of the four reform laws. For a comprehensive overview of each reform step, see Ebbinghaus and Eichhorst (2006).

[2] Unwelcome (long-term) effects of benefit sanctions comprise unstable employment and low wages, also below the subsistence level.

[3] For the remainder of the paper, we use the word 'welfare' synonymously with the German tax-based transfer, UB II, even though welfare, technically, is a hypernym. Thus, we differentiate welfare sanctions from benefit sanctions that usually refer to the receipt of unemployment insurance (UI) payments.

[4] As explained in Section 3.1, also *employed* people can be eligible for UB II if their earned income does not cover the minimum subsistence level of their housholds. Hence, eligibility to the German UB II does not only depend on the absolute amount of the claimant's earned income but also on the number of family members living in their household.

alternatives include living on parents', children's or a partner's income, on assets, student's assistance[5], disability pension, early retirement pay — or in some cases even on illegal work, begging or criminal activitiy (Ames (2009), Götz et al. (2010), Machin and Marie (2004), Schreyer et al. (2012), Wolff (2014)).

By far the majority of European studies focus on the recipients of unemployment insurance benefits (UIB) who are, on average, more likely to find a job than welfare recipients. In reality, a significant proportion of welfare recipients consists of the long-term unemployed, and only-partly-employable people.[6] Presumably, welfare recipients are, then, more likely to end in non-employment than recipients of UIB. However, only very few of these studies on UIB recipients consider exit from labor-force as a possible consequence of benefit sanctions. The purpose of this study is to fill this gap as it provides one of the first European analysis of sanctions against welfare recipients, augmenting the view on exit into employment by the exit into non-employment.

An overview of the scarce European studies on welfare sanctions — only one of which takes into account the non-employment option — is given in Section 2. In the remainder of this section, we introduce some of the best-known European studies of unemployment insurance benefit (UIB) sanctions, comprising a few studies considering the option of leaving the labor force.[7] It should be noted that for both groups of studies — of UIB as well as of welfare recipients — several of them are restricted to specific districts of a country, to certain sectors of the labor market, or to particular groups of benefit recipients and, hence, are not necessarily valid for the total of a country's benefit recipients.

For instance, Abbring et al. (2005) analyze the impact of UIB sanctions on the transition rate into employment for the Dutch metal and banking sector. They estimate a positive and significant effect of sanctions on re-employment for men and women separately, whereas the effect for female unemployed with an increased transition rate of 98% for the metal industry and 85% for the banking sector turns out to be considerably higher than for males.

For Denmark, Svarer (2010) examines a large Danish register dataset to investigate the effect of

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[5]Røed and Westlie (2012) find evidence that unemployment insurance benefit (UIB) sanctions in Norway increase the transition rate into education by about 200%.

[6]Only-partly-employable people comprise, for example, persons with health restrictions and persons caring for infants or for elderly and sick relatives.

[7]Other European studies on UIB sanctions are provided, for example, by Cockx et al. (2011) for Belgium and Røed and Westlie (2012) for Norway.

sanctions on re-employment rates in the period from January 2003 to November 2005. Svarer (2010) obtains positive estimates for the sanction coefficient. The estimates of the time-varying effect of sanctions suggest a remarkably high effect for the first four weeks after a sanction has been imposed. However during the following eight weeks, the effect drops sharply and loses significance after thirteen weeks.

The study of van den Berg and Vikström (2014) analyzes the monitoring and sanction regime of the Swedisch unemployment insurance (UI) system on re-employment durations and ensuing job quality. Using combined register data sets covering the (un-)employment history of the Swedish population over 1999 to 2004, and applying an extended Timing-of-Events (ToE) approach, they find a significant positive effect of sanctions on re-employment, but an adverse effect on job quality. Whereas job exit rates increase by 23%, wages decrease by 4% and the probability of moving from part-time to full-time employment falls by 15%.

The two following studies are based on unemployment insurance (UI) register data for certain Swiss cantons. The data records the date of sanction warnings and imposition, allowing an analysis of ex-ante and ex-post effects. Firstly, Lalive et al. (2005) find that both warnings and enforced sanctions affect the unemployment exit rate positively. Their model reveal a 28% shift in the unemployment exit rate after a warning. The transition out of unemployment increases again by 23% after a sanction was enforced. Compared to the effect of sanction enforcement, the results already indicate that the warning exhibits a quantitatively similar effect. Using the same administrative data source, Arni et al. (2013) employ a multivariate mixed proportional hazard model for competing risk to examine the impact of warnings, and how the imposition of sanctions affect the unemployment exit hazard to either regular employment or non-employment (i.e., out of labor force) as the two competing risks. This elaborate analysis shows a positive impact of warnings and sanction enforcements on unemployment exit rates to either of the two competing risks, whereas the announcement of a sanction increases the risk of exit to non-employment considerably. Beyond examining the unemployment exit hazard, Arni et al. (2013) amplify their approach by including an analysis of the post-unemployment employment periods with respect to job stability and earnings. They find significant evidence that a sanction during a period of unemployment reduces the duration of the first employment and non-employment period. Regarding wages, sanction warnings and impositions significantly lower post-unemployment earnings.

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Similar to other Euorpean countries, in Germany the initial studies on benefit sanctions have focused on UIB receipt. Müller and Steiner (2008) explore the ex-post effect of unemployment benefit sanctions on unemployment-to-employment transitions between 2001 and 2004 separately for West and East Germany. They restrict the sample to unemployment insurance benefits (UIB) and unemployment assistance (UA) inflow cohorts in the years 2001 and 2002 at the beginning of the unemployment spell.[8] Combining Propensity Score Matching (PSM) with a Mixed Proportional Hazard (MPH) model for discrete-time hazard rates, Müller and Steiner (2008) find robust positive effects of benefit sanctions for men and women in East and West Germany. The effect decreases with elapsed unemployment duration until the sanction is imposed.

Hofmann (2012) investigates the ex-post effect of sanctions on an individual's likelihood of gaining regular employment, holding an irregular job, or leaving the labor force. A dynamic matching approach is applied to a sample of individuals that entered UIB receipt between April 2000 and March 2001 in West Germany. The results reveal rather ambiguous effects: while the Average Treatment effect on the Treated (ATT) for the outcome of entry to regular employment turns out to be positive and mainly driven by young UIB recipients, the ATT for the probability to hold an irregular job is positive for women but negative for men. The positive effect for women is driven by the older subgroup and the negative effect for men is found to be stronger in regions with higher unemployment rates. Regarding the outcome of leaving the labor market, benefit sanctions lead to a higher drop off within the group of older women. Also, sanctioned men have a higher probability of withdrawing from the labor market when compared to non-sanctioned men.[9]

However, given the considerably higher proportion of welfare recipients compared to UIB recipients, the extensive monitoring and sanction regime introduced under 'Hartz IV', and the fact that these strengthened regulations primarily target UB II recipients, we have chosen to put the focus on unemployed welfare recipients. We provide the first analysis of the causal ex-post effects of German welfare sanctions — namely UB II sanctions — on the hazard rates to both employment and non-employment. We examine the effects on unemployment duration after the imposition of benefit sanctions, referred

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[8]In contrast to unemployment insurance benefits (UIB), unemployment assistance (UA) was tax based. UA existed only until the end of 2004. Since 2005 the unemployment benefit system has changed substantially. Further information is given in Section 3.

[9]This result is especially found for men who have been sanctioned during the 2nd or 3rd stratum, i.e. during the 3rd until 6th month of UIB receipt.

to as ex-post effects, and abstract from ex-ante effects, caused by implementing and tightening up the monitoring and sanction regime, or by possible warnings before imposing a sanction.

In contrast to previous studies of benefit sanctions, we estimate the effect on all employable household members, and not just on the recipient of the sanction, as UB II applies to households.[10] As a consequence, we also treat the other household members as affected. We exploit data from a novel German panel survey, especially designed for research on employable welfare recipients and their household members. It provides detailed information about individuals' (un-)employment histories, including information on UB II sanctions and periods of non-employment. Employing a Timing-of-Events (ToE) approach, we estimate a discrete multivariate Mixed Proportional Hazard (MPH) model to the survey data that covers the first three years after the implementation of 'Hartz IV', from 2005 to 2007.

The remainder of the paper is organized as follows: Section 2 briefly summarizes research on the effects of sanctions upon welfare recipients in Europe, and Section 3 outlines the institutional structure of the German unemployment benefit and sanction scheme implemented by the 'Hartz IV' law. A detailed description of the data, in particular of the group differences between sanctioned and non-sanctioned unemployed in UB II receipt, is provided in Section 4. Section 5 introduces the econometric model, whereas the results are presented and discussed in Section 6, followed by a conclusion in Section 7.

2   Previous studies of European welfare sanctions

To date, the study of welfare sanctions in European countries have been very limited. So far, there have been two studies focusing on welfare recipients in Rotterdam (Netherlands), one recent study in Finland, and three studies in Germany.

An early Dutch study on welfare sanctions is provided by van den Berg et al. (2004). They use a Mixed Proportional Hazard (MPH) model and find sanctions to have a significantly positive effect on the unemployment-to-employment hazard of welfare recipients in Rotterdam. In figures, a sanction raises transition rates to work by 140%. Moreover, they find a substantially negative effect on the

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[10]Unlike the individually-granted unemployment insurance benefit (UIB), since 2005 called UB I, the means-tested social benefit UB II applies to an entire household as a so-called 'need unit', i.e. to all related members of a household. More detailed information on the institutional framework is given in Section 3.

probability an individual becomes long-term unemployed if the sanction is imposed at a relatively early stage. The more recent Dutch analysis for the same municipality by van der Klaauw and van Ours (2013) investigates the effects of re-employment bonuses and benefit sanctions on the re-employment probability of welfare recipients and find that benefit sanctions exhibit positive effects on employment probability, whereas re-employment bonuses are not verified as an effective policy instrument.

A very recent study by Busk (2014) compares the effects of unemployment insurance benefit (UIB) and welfare sanctions in Finland with respect to the outcomes employment, participation in the Active Labor Market Program (ALMP), and exit from labor force. Using the Timing-of-Events (ToE) approach, Busk (2014) finds evidence for a positive effect of ongoing sanctions upon UIB and welfare recipients on taking up employment as well as for completed sanctions upon welfare recipients.[11] However, she found no effect of completed UIB sanctions on transition rates into employment. Regarding participation in the ALMP, sanctions have a slight positive effect on welfare recipients, but no effect on UIB recipients. Finally, she found exit from labor force positively affected by both UIB and welfare sanctions. This study for Finland — together with our German study — are the first European analyses of welfare sanctions considering the non-employment option.[12]

The majority of the earlier German studies on benefit sanctions focused on recipients of unemployment insurance benefits (UIB). However, since the 'Hartz IV' law came into force in January 2005, employable welfare recipients — namely UB II recipients — have come increasingly into the focus of political discussion and, with it, also into the focus of scientific research. But still, research on the effects of German welfare sanctions is very limited, and none of the previous studies take into account the non-employment option.

A very early and comprehensive research on German UB II recipients provided by Schneider (2008, 2010), analyzes the effect of UB II sanctions on reservation wages, job search effort, and employment outcome using the German cross-sectional survey of unemployed UB II recipients in January 2005. Adopting a Propensity Score Matching (PSM) approach, Schneider (2008, 2010) finds only the effect on unsubsidized employment as partially significant and positive; the remaining effects on reservation

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[11]Unlike other studies, Busk (2014) distinguishes between effects during the periods of benefit cut (ongoing sanctions), and the effects after the benefit cuts (completed sanctions).

[12]The Finish welfare recipients in this study differ quite a lot from the German UB II recipients as membership in a Finish unemployment insurance (UI) fund is voluntary and, hence, the proportion of welfare recipients in Finland with good labor market prospects can be expected to be considerably higher than in Germany.

wages, job search effort, and subsidized employment proof neither statistically nor economically significant.[13] The positive impact on unsubsidized employment turns out to be larger if the sanction is imposed earlier within the period of benefit receipt.

Using an uniquely combined data set of German administrative and survey data for unemployed in UB II receipt between 2006 and 2007, Boockmann et al. (2014) estimate the effect of benefit sanctions on the transition from welfare receipt to unsubsidized employment. Assessing the potential bias due to sanction endogeneity, Boockmann et al. (2014) employ an instrumental variable regression (with both the reported sanction strategy and the sanction frequency rates of 154 German welfare agencies as instruments) to measure the effectiveness of an intensified sanction regime by means of the Local Average Treatment Effect (LATE). Boockmann et al. (2014) find evidence that benefit sanctions increase the probability to leave UB II receipt for employment within six months after the benefit cut by about 58 percentage points. Based on the results, they support a tighter use of benefit sanctions as it is supposed to increase the probability of leaving welfare dependency towards unsubsidized employment.

A recent study by van den Berg et al. (2014) focuses on the effect of mild and strong sanctions, applied to unemployed young male UB II recipients in Western Germany from the time they first received welfare payments until they took up unsubsidized employment.[14] The data set is limited to an inflow sample into unemployed UB II receipt of 'young adult' men, aged 18 to 24 years, during January 2007 and March 2008.[15] Van den Berg et al. (2014) apply a Timing-of-Events (ToE) approach with two dynamic treatments (mild and strong sanctions); the results indicate that strong (mild) sanctions increase the transition rate from welfare without employment to unsubsidized work by 120% (37%).

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[13]In the studies by Schneider (2008, 2010), unsubsidized employment means jobs with an income that is high enough to leave UB II receipt. As it is not restricted on hours worked, it includes also part-time employment. In contrast, subsidized employment includes regular jobs with supplementary UB II receipt. This implies, also a regular (full-time) job with a low income that not sufficiently covers the minimum subsistence level of the employed and related household members, is defined as subsidized employment.

[14]Similar to the studies by Schneider (2008, 2010), also van den Berg et al. (2014) define unsubsidized employment as a job, which is paid well enough to leave (supplementary) benefit receipt.

[15]On average, the group of 'young adults' are sanctioned more often and more tightly than older UB II recipients, see Section 3.2.

3 German welfare regime for employable people and its sanction scheme

Before 2005, the structure of the German unemployment benefit system comprised three main elements: unemployment benefits (UB), also referred to as unemployment insurance benefits (UIB), unemployment aid (UA), also called unemployment assistance (UA), and social assistance (SA). The former (UB/UIB) were not means-tested, the latter two (UA, SA) were both tax-based and means-tested. The 'Hartz IV' law merged the former unemployment aid (UA) and social assistence (SA) for employable people into the unemployment benefit II (UB II). Besides, the former unemployment benefits (UB) became UB I, but with stronger eligibility conditions.[16]

3.1 The means-tested unemployment benefit system under Hartz IV

The means-tested UB II provides basic social security for 'needy job-seekers' and their related household members. Technically, every person, who lives in Germany and is between the employable ages of 15 to 64 years and is able to work at least three hours per day, but is not able to cover the substantial needs of their household, satisfies the eligibility criteria for UB II.[17] As UB II is means-tested, recipients and their household members are classified as 'needy' but do not necessarily have to be unemployed.

In contrast to insurance benefit UB I, which is granted individually, the means-tested UB II applies to households, or the so-called 'need units'.[18] A 'need unit', also referred to as a 'need community' (*'Bedarfsgemeinschaft'*), consists of at least one person capable of working. The partner, regardless of their marital status and any children younger than 25 years belong to the 'need unit', as long as they share the same household.[19]

The heterogenous group of UB II recipients includes people who are unemployed but not entitled to insurance benefit UB I, or whose UB I or earned income is below the household's subsistence level. Normally, individuals end up in UB II receipt after they have exceeded their maximum period of UB I receipt (in most cases, 6–12 months), and most of them are henceforth classified as long-term

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[16]Social assistance (SA) is still left for needy persons who are neither eligible to UB I nor to UB II.

[17]The eligibility requirements of UB II are codified in the Social Code Book II (SCB II).

[18]Henceforth, 'household' and the offical term 'need unit' are used interchangeably.

[19]Persons who live together as a merely flat-sharing community do not belong to the same household in the sense of the SCB II.

unemployed.[20] Another group of UB II recipients is represented by people who did not pay (sufficient) contributions to unemployment insurance (UI), such as former pupils, students, self-employed persons or employees who worked for less than 12 months within the eligibility period of three years (before 2007) or two years (since January 2007), respectively.

In comparison to the former UA, UB II is granted under tightened acceptance regulations. Whereas UA provided protection against loss of job quality and income to a certain extent, UB II recipients are obliged to accept or hold any jobs they are physically, intellectually, and mentally able to. In other words, this ignores their professional experience while also affecting the possibility of future skilled employment.[21]

Key tools of the comprehensive monitoring scheme in Germany are the 'integration contract' (*'Eingliederungsvereinbarung'*) and the appointments of 'personal case managers'. Explicitly, the integration contract specifies the duties of clients with respect to job search activities. It can determine further oligations, e.g., more or less specified commitments to participate in a program of Active Labor Market Policy (ALMP).

3.2 Welfare sanctions under Hartz IV

In consequence of the paradigm shift towards 'activation policy', with the 'Hartz IV' law a comprehensive monitoring and sanction scheme has been established.[22] Additionally, case managers are encouraged to strictly apply UB II sanctions. While the number of UB II recipients in the last years have decreased from around 5.3 million people in 2007 to 4.4 million in 2014,[23] the number of imposed sanctions per year increased — after fluctuating around 750,000 from 2007 to 2009, it finally exceeded one million in 2012, where it has remained quite stable until 2014.[24] Apparently, sanctions in form of temporarily benefit cuts — principally lasting three months — have become a crucial instrument in the German welfare policy. This is all the more weighty, as repeated sanctions can swiftly lead to a

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[20]As defined in the German Social Code Book III (SCB III), long-term unemployed are persons registered as unemployed at least for one year.

[21]Even employed persons, receiving supplementary UB II (the so-called *'Aufstocker'*) are strictly encouraged to search for additional or better paid jobs in order to reduce their means dependent benefits.

[22]The legal basis of the UB II sanction scheme is regulated in §§31, 31a, 31b, and 32 SCB II.

[23]These numbers represent the annual average of the monthly stock of employable welfare recipients, namely UB II recipients.

[24]Source: publicly available statistics of the German Federal Employment Agency (FEA).

total loss of UB II, including accomodation benefits.[25]

Recipients of UB II are exposed to sanctions for a broad range of reasons such as insufficient job search effort, refusing to sign an 'integration contract',[26] non-acceptance of job offers or an offer for an integration measure, resigning a job contract, or provocating a dismissal from a job or an integration measure. These failures are considered as *major* 'breaches of duty' and cause a 30% reduction of the base benefit in the first step. Repeated major failures within one year increase the penalty: the second failure is sanctioned with a 60% cut, the third with a total cut of UB II, including housing benefits. Further justifications for sanctions are missing appointments with case managers, or missing medical or psychological treatments. Initally, these types of non-compliant behavior, classified as *minor* 'breaches of duty', reduce base benefit by 10%, followed by an increase of 10% points for each recurrence. Young UB II recipients, between the ages of 15 to 24 years, are sanctioned even harder. Apart from minor mistakes (missed appointments), already the first failure entails an immediate 100% cut of the base benefit, the second yields a total cut of UB II, including housing benefits.

In fact, unemployed in the last sanction step face the very real risk of homlessness. Hence, it can be expected that such a sanction scheme increases compliance and concessions on the expected job quality, particularly of unemployed who already experienced a sanction.

4 Data

Our analysis is based on a novel German panel survey 'Labour Market and Social Security' (PASS).[27] It is an annual household survey in the field of German labor market and welfare state research, conducted at the request of the Institute for Employment Research (IAB), and provided by the Research Data Centre (FDZ) of the IAB.[28] The PASS survey is especially developed and provided for (internal and external) research on UB II and for comparisons between benefit recipients and the total population.

The PASS survey enables us to contribute to previous research on welfare sanctions in the following two points: First, we analyze the effects of sanctions on the transition rates not only to employment but

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[25]UB II consists of the base benefit, housing or accomodation costs, and social security contributions.

[26]While refusing to sign an 'integration contract' is no longer a legal justification for imposing a sanction, this was not the case during our observation period (2007 to 2010).

[27]The abbreviation is based upon the German survey title, *Panel Arbeitsmarkt und Soziale Sicherung* (PASS).

[28]The FDZ (*Forschungsdatenzentrum*) of the IAB provides researchers access to micro data for non-commercial empirical research in the fields of social security and employment.

also to non-employment, and second, we consider the impact of being indirectly affected by sanctions caused by other members of the 'need unit'.[29] Because of these merits of the PASS, we accept the drawbacks of a complex survey design and the associated typically human recall errors, yielding under-reported sanction events.[30]

4.1 The PASS survey

The PASS study consists of annual panel data on individual and household level as well as several datasets describing the entire employment history of individuals and the episodes of households' UB II receipt since January 2005. We exploit the first two waves of the survey.[31] For the first wave about 18,954 individuals, belonging to 12,794 households, were interviewed between December 2006 and July 2007. The second wave, conducted between December 2007 and July 2008, covers 12,487 persons in 8,429 households. Summing up, there are over 10,000 employable individuals in the age of 15 to 64, living in more than 7,300 households, who had been interviewed in both waves.

As the PASS is targeted towards low-income households and unemployed, the survey is structured as follows: There are two sub-samples, the *FEA-sample* which covers households and individuals entitled to UB II, and the *Microm-sample* that covers households and individuals registered as German residents. The latter is a stratified sample where the probability of a low-income (medium-income) household to be interviewed is 4 times (2 times) the probability of a high-income household. Consequently, UB II recipients and low-income earners are disproportionately represented. This is one of the PASS study's great advantages, as this segment of the population is more difficult to reach and follow up over time, and hence normally under-represented in surveys.

Besides unemployment spells, the survey comprises employment spells and — in comparison to administrative data — highly beneficial 'gap spells', recording the periods out of labor force explicitly.

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[29]Concretely, we assume and treat all employable household members as affected by a sanction. However, the low number of exclusively indirectly sanctioned individuals in our sample does not support a proper application of distinct estimations for direct and indirect sanctions separately. The task of disentangling the effects of direct sanctions (applied to the person itself) from the indirect ones (applied to another household member) should be the focus of further research on welfare sanctions.

[30]Furthermore, the conceivable alternative for us as researchers outside of the IAB, to use a Scientific Use File (SUF) that is a 2% random sample of administrative data (the so-called *Sample of Integrated Labour Market Biographies*, or SIAB for short), lacks information on exact sanction periods and the household context. However, this information is crucial for our analysis, and hence, the SIAB is not a suitable alternative for our research target.

[31]An extensive documentation on the first two waves of PASS is provided by Christoph et al. (2008) and Gebhardt et al. (2009).

The detailed information in the various spell datasets enables us to track households' UB II receipt and individuals' transitions out of unemployment. Both unemployment and employment episodes are reported on a monthly frequency since January 2005. The UB II spells, reported on household level, cover detailed information on imposed sanctions, such as the type of accused violation, the date of the sanction enforcement and its duration. The survey set further comprises information on socio-demographic characteristics like individuals' household structure, labor market status, earned income, and households' net income including any kind of social benefits. Moreover, there are several subjective indicators like employment orientation and experienced social status.

4.2 Sample selection

Our analysis covers the calendar years of 2005 to 2007. We select all individuals between 15 and 64 years that were interviewed in both of the first two waves that entered unemployed UB II receipt within the observation period.

As the spells of UB II receipt are recorded on household level, the information on imposed sanctions is also reported on household level. Even though it is possible to attribute sanctions to household members who cause it, we consider all household members as affected by sanctions. Hence, from the moment the first sanction is imposed, we classify all employable household members as sanctioned. This appears reasonable, as UB II receipt applies to households, and thus, the entire household is exposed to the budget cut.

4.3 Descriptive statistics

Our final sample consists of 3,996 unemployment spells, whereas 742 end with a transition into employment, 601 with a transition out of labor force, and 2,653 are right censored, i.e. the persons remained unemployed until December 2007. The final sample records 3,599 unemployed persons from 15 to 64 years, who had received UB II at least for one month in the respective period from January 2005 to December 2007. 391 of them (that is 10.86%) had been sanctioned.

Table 1 depicts the ratios of sanctioned unemployed UB II recipients who had been affected by at least one sanction between January 2005 and December 2007 in relation to all unemployed people who

Table 1: Sanction Rates of Selected PASS Data (2005–2007)

Sex/Age Group	Individuals	Sanction Rate[1]
All	3,599	10.86
Men	1,533	11.29
Women	2,066	10.55
15–24 years	605	12.56
25–49 years	2,067	11.66
50–64 years	927	7.98

Source: Own calculations based on selected data of the PASS survey. [1]Percentage sanction rates, calculated as share of sanctioned unemployed UB II recipients in the period between January 2005 and December 2007.

received UB II at least for one month within this period.[32]

The sanction rate of 'young adults' (15–24 years) is with 12.56% considerably higher, whereas the sanction rate of persons above 50 years is with 7.98% considerably lower than the total sample average of 10.86%.

Table 2 provides summary statistics of the basic explanatory variables of our final sample, differentiated according to persons with or without a sanction, drawn from individual data (PANEL) and spell properties (SPELL). As the survey starts in 2005, it lacks sufficient information on previous employment states. Therefore, we decide to refrain from capturing state dependence by explicit control variables but approach capturing by means of unobserved heterogeneity terms.

At first glance, the mean values in Table 2 reveal a fairly homogenous picture between sanctioned and non-sanctioned unemployed. In both groups, men and women are equally represented. Negligibly but still significant more non-sanctioned UB II recipients live in eastern Germany. From the continous variable *age* we derive three age-group dummies, whereby *age24–* contains all unemployed individuals with an age between 15 and 24 years. Correspondingly, *age50+* takes the value one for unemployed that are between 50 and 64 years old. To non-sanctioned unemployed, UB II recipients with a sanction are, on average, with 38 years about 2 years younger, have with 20.1% (19.9%) a higher (lower) proportion of individuals younger (older) than 25 (49) years and rather live without a partner in the

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[32]The sanction rates depicted in our study are different from others, especially from administrative data. First, they depend on the observation period: the longer considered unemployment episodes last, the longer unemployed are at risk to be sanctioned, and hence are more likely to be sanctioned within the observation period. Second, the official sanction quotas, reported by the FEA, are based on the share of *currently* sanctioned persons within a month. In contrast, we consider a person as sanctioned *beyond* the sanction period.

same household. The share of the two age cohorts (*age24–* and *age50+*) in either group reflects legal regulations and common practice of sanction enforcement: Case managers are explicitly obliged to sanction young adults below 25 years more strongly, whereas persons above 50 years are treated less strictly, yielding a share of elder UB II recipients (29.3% for *age50+*) that exceeds the share of the younger (15.2% for *age24–*).

Table 2: Summary Statistics of Selected Variables[1]

Variable	Non-Sanctioned	Sanctioned
PANEL DATA		
woman	0.576	0.564
east***	0.399	0.364
age***	40.28 (0.032)	37.91 (0.088)
age24–**	0.152	0.201
age50+***	0.293	0.199
couple***	0.311	0.262
child6	0.188	0.201
med skilled	0.595	0.561
high skilled	0.081	0.084
migrated*	0.267	0.226
non-monetary	0.800	0.816
monetary	0.534	0.511
social**	0.887	0.869
SPELL DATA		
exit to employment**	0.109	0.130
exit to non-employment	0.098	0.094
d4–6***	0.117	0.111
d7–12***	0.210	0.208
d13–36***	0.546	0.565

Source: Own calculations based on selected data of the PASS survey. [1] Means are calculated over 93913 person months of unemployed UB II receipt within January 2005 and December 2007, comprising 3996 UB II spells, 3586 non-sanctioned and 410 sanctioned persons. Standard deviations are given in parantheses. Two-sided mean comparison tests (t-tests) give significance levels of ∗10%, ∗∗5%, ∗∗∗1%. Current unemployment durations (measured in months) are represented by the dummies *d4–6*, *d7–12*, and *d13–36*.

Households with children below the age of six (*child6*) account for a similar part of around 20% in both groups. With respect to the (vocational) qualification level, we differentiate between three skill groups. The levels *high skilled* refers to unemployed holding a university degree, *med skilled* comprises individuals with a secondary or high school certification or any type of successfully accomplished apprenticeship. The remaining fraction of unemployed without any degree serves as a reference (*low-*

skilled). The dummy variable *migrated* indicates whether or not UB II recipients have an immigrant background, meaning that they either migrated themselves (first generation), or they have at least one parent who migrated (second generation).

The PASS survey, furthermore, provides information about general attitudes to work. The dummies *non-monetary*, *monetary* and *social* indicate, whether a specific motivation is crucial for the person. The answers are not mutually exclusive, and individuals may report more than one (or none) of the three inquired working motives as important. On average, the share of UB II recipients that evaluate working as important in order to participate in society (*social*) is with 86.9% about 1.8% points significantly lower for sanctioned than non-sanctioned UB II recipients.

SPELL data provide a first impression about the probable effect of benefit sanctions on employment and leaving the labor market. Apparently, a higher share (13.0%) of sanctioned unemployed exit to employment compared to the non-sanctioned group (10.9%). Concerning unemployment duration, half of the UB II recipients in both groups come up with a duration of more than a year. In general, the share increases with duration and remains unsignificantly different in means between the two groups.

5   Estimation approach

In this paper, we examine the effects of sanctions on the transition rates of unemployed UB II recipients into employment or non-employment. In particular, we focus on the effect after the imposition of a benefit sanction, commonly referred to as ex-post effect.[33] For our analysis, we set up a model that accounts for individual's unemployment duration dependence. From the beginning of each unemployment spell, the individuals are at risk to switch to one of the two probable states in time T: become employed (e) or exit the labor market and enter non-employment (ne). If neither occurs, the individual remains unemployed and the respective spell is classified as censored ($c = 0$). Let t_e be the corresponding duration until exiting unemployment for a job, and t_{ne} be the time until the unemployed leaves the labor market.

For each period of unemployment, we observe the point in time, T_s, of a sanction enforcement and

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[33]After a sanction is imposed, a mixture of ex-ante and ex-post effects occur. As people are both backward-looking and forward-looking, ex-ante effects caused by the threat of recurrent sanctions affect the outflow behavior of UB II recipients. Sticking to terms, the effect after a sanction is labeled as ex-post effect in the literature, see Lalive et al. (2005) and Arni et al. (2013).

the respective time, t_s, until the individual experiences their first sanction.[34] Even though our final sample is already restricted to unemployed UB II recipients, there are still numerous observed and unobserved components, causing a non-negligible correlation between the probability of a sanction and unemployment duration. As a consequence, we cannot treat the effect of a sanction and, in particular, the time until a sanction t_s as exogenous.

In order to disentangle the effects of an unemployment benefit sanction from other observable or unobservable factors influencing the exit from unemployment, Abbring and van den Berg (2003a,b) developed the Timing-of-Events (ToE) approach, enabling a causal identification of dynamic treatment effects of imposed sanctions on the exit hazard of unemployed. The elaborate technique reveals the causal from the selective effect of an imposed benefit sanction on unemployment duration.

To analyze the duration t_o with $o \in \{e, ne\}$ until the point of transition in T_o, we employ a discrete Mixed Proportional Hazard (MPH) framework. The exit rate to either destinations $o \in \{e, ne\}$, conditioned on the months elapsed until the sanction enforcement t_s, is given by:

$$\theta_o(t_o|x, v_o, t_s) = \lambda_o(t_o)exp[x'\beta_o + \delta I(t_s < t_o) + v_o], \tag{1}$$

where $\lambda_o(t)$ represents the baseline hazard (duration t until exit to state o). x is a vector of observables, describing individual characteristics and controlling for local labor market conditions. The dummy variable $I(t_s < t)$ indicates whether a sanction has been enforced during the unemployment spell. Hence, $I(\cdot)$ takes the value one if the time interval until a sanction has been imposed t_s is shorter than the interval until exit t_o or shorter than the entire unemployment spell in case of a censored record. v is a random term, controlling for the unobserved components presumably affecting the hazard rates. The corresponding conditional density function of $\theta_o(t_o|x, v_o, t_s)$ is

$$f_o(t_o|x, v_o, t_s) = \theta_o(t_o|x, v_o, t_s) \exp(-\int_0^{t_o} \lambda_o(\tau|x, v_o, t_s)d\tau). \tag{2}$$

As unemployment duration is measured in months, we specify a discrete MPH for both probable states $o \in \{e, ne\}$ and adopt the common flexible piecewise-constant step function approximating the

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[34]It is a common approach in the literature to evaluate the effect of the first sanction solely, see van den Berg et al. (2004), Abbring et al. (2005), Lalive et al. (2005) and Svarer (2010).

duration dependence of the baseline hazard

$$\lambda_o(t_o) = exp[\sum_k \lambda_{o,k} D_k(t_o)] \tag{3}$$

for $k = 1, ..., 4$ fixed time intervals. $D_k(t_o)$ denotes time-varying dummy variables equal to one in the corresponding interval and $\lambda_{o,k}$ the estimated parameters for the specific interval k. According to the distribution of the unemployment duration, we define the following intervals (in months): [0–3]; (3–6]; (6–12]; (12–36]. We set $\lambda_{o,1} = 0$ for the first time dummy ($k = 1$) to avoid collinearity in an estimation with a constant term.

Again, the probability of a sanction during the receipt of UB II is likely to be endogenous. Unemployed that do not comply with entitlement requirements or do not behave according to compliance commitments are at risk to experience a sanction. Here we can expect that this type of behavior, in turn, affects the unemployment duration of the individuals, entailing a correlation between the unobserved components of the two processes. Hence, both the hazard of being sanctioned and the hazard of exiting unemployment to one of the two states e, ne must be estimated jointly.[35]

Similar to the unemployment exit hazard, also the hazard rate of being sanctioned $\theta_s(t|x, \upsilon)$ is assumed to follow a MPH specification

$$\theta_s(t_s|x, \upsilon_s) = \lambda_s(t_s) exp[x'\beta_s + \upsilon_s], \tag{4}$$

with $\lambda_s(t_s)$ as duration dependence. For a parsimonious but flexible estimation, we specify $\lambda_s(t_s)$ as a quadratic function of log-time. The respective conditional density of $t_s|x, \upsilon_s$ is

$$f_s(t_s|x, \upsilon_s) = \lambda_s(t_s|x, \upsilon_s) \exp(-\int_0^{t_s} \lambda_s(\tau|x, \upsilon_s)d\tau). \tag{5}$$

Based on the modeling framework so far, the joint distribution of the processes $t_o|t_s, x, \upsilon_o$ and $t_s|x, \upsilon_s$ can be fully described by the proposed Mixed Proportional Hazard (MPH) specification. Thus, the hazard of the latent failure (either unemployment exit or the hazard being sanctioned) depends on the

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[35]Here, one may argue that a MPH analysis with the exit to employment and non-employment as two competing risk should have been applied instead of treating the two processes independently. However, due to the limited number of surveyed individuals in our data, we run into convergence problems of the likelihood function.

duration t_o, t_s until this event occurs in T_o, T_s, on the observable characteristics comprised by x, and the unobservable components in v_o, v_s capturing the unobserved heterogeneity that is assumed to be gamma distributed. The MPH model allows for the simultaneous modeling of the two failures T_o, T_s. To ensure that the MPH framework is applied appropriately, we verify that the following assumptions have been met. Controlling for x and v, we ensure that the shape of the hazard of an unemployment exit θ_o is not influenced by the hazard of a sanction unless a sanction occurs in T_s implying $\theta_o | t_s, x, v_o$ for $t_o > t_s$.

Unemployed in Germany are warned about the possibility of sanctions in case of non-compliant behaviour, immediately after they have entered unemployment. These instructions about legal consequences are constantly repeated with every official letter that includes any request or invitation to the benefit recipient. Such permanent warnings, as well as explicit warnings of case managers who assess non-compliant behaviour, can already cause so-called ex-ante effects.[36]

But our study focusses on the ex-post effects of sanctions. Nevertheless, we might expect a moderate change in behavior, immediately before a sanction is imposed, as the unemployed could expect that a sanction is going to be applied if she or he does not behave according to the compliance commitments. However, whether sanctions indeed are enforced, depends primarily on the case managers and how strict they follow the sanction regulations and whether they are willing to accept possible reasons that could justify the seemingly non-compliant behaviour. Boockmann et al. (2014) find that the probability to be sanctioned varies considerably across welfare agencies, according to their sanction policies which depend on the region, the entire economic situation that makes it either more or less difficult to find a job, regardless of the search intensity and the willingness to accept worse job conditions, and probably on the attitudes of the chief officers. Altogether, it is very difficult for the unemployed to assess whether they will be sanctioned, and additionally, they do not know the exact point in time, T_s, at which a possible sanction will be imposed. Following the argumentation of Abbring and van den Berg (2003a,b), we assume that the so-called no-anticipation assumption is satisfied. This assumption is important for our analysis in order to guarantee that individuals do not change their behavior before the treatment occurs.

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[36]The effects of (explicit) warnings are commonly referred to as ex-ante effects in the literature, see Lalive et al. (2005) and Arni et al. (2013). As outlined in Section 1, there are less than a handful of empirical studies analyzing the ex-ante effects of explicit warnings — they do indeed provide significant evidence of these effects.

Moreover, it is assumed that the unobserved heterogeneity is independent from the time-varying covariates in x. The independency and no-anticipation assumption ensures that the causal effect of a specific treatment on the hazard of exiting unemployment is identified by a MPH framework, hence conditional on the observed explanatory variables in x and the unobserved heterogeneity v_o and v_s. Therefore, selectivity is captured by the correlation between those two unobserved heterogeneity components v_o and v_s.

6 Results

For the analysis, we focus on two main hazard specifications: one for the exit to employment θ_e, the other for the exit to non-employment θ_{ne}. To avoid bias potentially arising from endogeneity of the sanction treatment, we model the duration until the sanction imposition as endogenous. All models are specified as discrete MPH models,[37] where hazards for both θ_e and θ_{ne} are estimated simultanously.[38]

For our baseline models (Specification I) in Subsection 6.1, we assume the effect of a sanction as constant across the sample population. The impact of a sanction enters the unemployment hazard equation as a time-varying dummy variable δ, being 1 in t if a sanction already has been imposed, and zero otherwise. Besides δ, all models include a basic set of explanatory variables reflecting individual socio-economic characteristics, working motives and, to approximately capture general labor market conditions, a set of dummy variables for each federal state and the respective unemployment rate (uq). For the sensitivity analysis in Subsection 6.2, we allow the effect of a sanction to vary across the sample population. Hence, the expanded models (Specification II) let δ interact with selected explanatory variables used before, and outlined in Table 2 of Section 4.

Finally, Submodels (a) and (b) differ with respect to the specification of the baseline hazard. Submodel (a) assume a log-linear combined with a log-quadratic impact of unemployment duration on the unemployment exit hazard (θ_e, θ_{ne}).[39] In contrast, Submodel (b) impose a piecewise-constant duration

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[37]The episodes of (un-)employment are reported on a monthly frequency on a short observation period, so we use discrete MPH models.

[38]As mentioned in Section 5, we estimate the two processes as independent due to convergence problems of the likelihood function in a competing risk specification that otherwise would have been preferable.

[39]Although, the model is applied to discrete data, we estimate the parameters for a constant log-linear and log-quadratic impact of unempoyment duration on the outflow hazard.

dependence as a more flexible approach in explaining how different unemployment periods might affect the exit to employment or non-employment.

6.1 Baseline models

The results in Table 3 provide significant evidence of a positive impact (δ) of benefit sanctions on employment entry for Submodels (a) and (b). We find that sanctions enhance the transition to employment by 70% for the log-quadratic baseline hazard (a), and by 68% for the flexible piecewise-constant duration dependence (b).[40] Our results for the employment hazard are in line with the majority of previous German and other European studies that predominantly find positive effects of benefit sanctions on employment entry for UIB and welfare recipients.[41]

It is worth emphasizing that the recent studies by far do not reveal the entire picture of the impact of, in particular, welfare sanctions as most studies focus on unemployment insurance benefit (UIB) sanctions. One potentially adverse effect of sanctions upon an increase in the exit rates from labor force is empirically found and presented in Table 3. We obtain strongly positive and significant evidence of benefit sanctions on the hazard out of labor force. Sanctions increase the transition rate to non-employment by 60% for the log-quadratic specification (Submodel (a)) and by considerable 79% for the piecewise-constant specification (Submodel (b)) of the baseline hazard. Hence, the estimated effects of benefit sanctions on exit from labor force, which, for UIB recipients in Switzerland and Germany were found by Arni et al. (2013) and Hofmann (2012), respectively, are also confirmed by this study for employable welfare recipients (i.e. UB II recipients) in Germany.

Apparently, there are two groups of UB II recipients which respond to sanctions differently: after a benefit sanction, one group reacts with a successful job search, to some extent by accepting worse employment conditions or/and by increasing the general search effort for jobs, whereas the other group becomes increasingly prone to exit the labor force, possibly driven by an increased search effort for

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[40]For the estimation procedure we use the program *Sabre*. Besides others, *Sabre* has been developed for estimation of multivariate generalized linear mixed models, especially applied to discrete data and small data samples. One shortcoming ist that the procedure does not report the estimated mass points for unobserved heterogeneity.

[41]Well-known recent European studies on UIB recipients — mainly finding positive effects of benefit sanctions on employment entry — are provided by van den Berg and Vikström (2014) for Sweden, by Busk (2014) for Finland, by Arni et al. (2013) for Switzerland, and by Hofmann (2012) for Germany (see Section 1). Most recent studies on welfare recipients — also finding positive effects of sanctions on employment entry — are provided by van der Klaauw and van Ours (2013) for the Netherlands, by Busk (2014) for Finland, and by Boockmann et al. (2014) and van den Berg et al. (2014) for Germany (see Section 2).

alternatives to welfare receipt and employment[42]

Table 3: Baseline Models, Exit Equations (θ_e and θ_{ne})

| | Employment θ_e | | | | Non-Employment θ_{ne} | | | |
| | Model Ia | | Model Ib | | Model Ia | | Model Ib | |
Variable	coef	z-stat	coef	z-stat	coef	z-stat	coef	z-stat
δ	0.528	2.45	0.520	3.75	0.469	2.04	0.583	3.44
lnt	0.285	1.69			0.972	4.01		
lnt^2	-0.121	-2.81			-0.237	-3.91		
d4–6			3.755	25.96			4.122	20.76
d7–12			2.692	19.74			3.438	19.75
d13–36			1.396	12.25			1.978	12.54
women	-0.591	-5.43	-0.454	-5.59	0.164	1.56	0.196	2.04
med skilled	0.613	4.65	0.394	3.65	0.341	2.66	0.050	0.45
high skilled	0.794	4.31	0.471	3.04	0.186	0.85	-0.175	-0.87
age24–	-0.540	-2.93	-0.698	-4.33	1.462	6.73	0.988	7.75
age50+	-1.168	-7.47	-0.751	-6.44	-0.031	-0.25	0.318	2.71
couple	-0.039	-0.36	-0.139	-1.48	0.840	6.08	0.603	5.88
child6	-0.338	-2.60	-0.186	-1.71	-0.262	-1.97	-0.093	-0.76
migrated	-0.083	-0.72	-0.024	-0.23	-0.220	-1.72	-0.158	-1.38
uq	-0.193	-6.69	-0.096	-5.06	-0.147	-5.00	-0.073	-3.23
non-monetary	0.366	2.70	0.280	2.39	-0.213	-1.65	-0.232	-1.98
monetary	-0.122	-1.31	-0.055	-0.67	-0.094	-0.91	-0.037	-0.40
social	0.021	0.14	0.089	0.68	0.257	1.51	0.272	1.76
regional dummies	yes		yes		yes		yes	
unobs. heterogen.[1]	yes		yes		yes		yes	

[1]Mass points for the terms of unobserved heterogeneity are estimated but not reported by *Sabre*, the program we used for the estimation procedure.

The negative log-quadratic term of unemployment duration in the Model Ia in Table 3 reveal a non-linear relation between unemployment duration and the hazard to leave UB II receipt for employment θ_e respective non-employment θ_{ne}. Putting it differently, after a certain spell length, the probability of finding a job or leaving the labor market declines with ongoing UB II receipt.

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[42]As mentioned in Section 1, such alternatives include: living on the income of relatives and/or friends, student's assistance, disability pension, early retirement pay, illegal work or even criminal activitiy (Ames (2009), Götz et al. (2010), Machin and Marie (2004), Røed and Westlie (2012), Schreyer et al. (2012), and Wolff (2014)).

Imposing the unemployment duration dependence as a flexible piecewise constant baseline function (Model Ib) in terms of four intervals ($[0-4]; [4-7]; [7-13]; [13-37]$, in months) brings up positive and significant estimates for all three intervals (given $[0-4]$-interval as reference group). This holds for both hazards θ_e and θ_{ne}. The estimated coefficients are positive and significant but decline in the magnitude of their impact conditional on unemployment duration. In light of the inverse u-shaped duration dependence in the Model Ia for θ_e and θ_{ne}, the impact is supposed to turn negative for shorter interval setting in the end.[43]

Table 3 (continued): Baseline Models, Sanction Equations (θ_s)

	Employment e				Non-Employment ne			
	Model Ia		Model Ib		Model Ia		Model Ib	
Variable	coef	z-stat	coef	z-stat	coef	z-stat	coef	z-stat
lnt	-0.351	-1.58	-0.350	-1.57	-0.350	-1.58	-0.334	-1.49
lnt^2	0.063	1.10	0.062	1.07	0.062	1.07	0.063	1.08
woman	-0.195	-1.63	-0.190	-1.60	-0.190	-1.59	-0.195	-1.64
med skilled	0.165	1.17	0.170	1.21	0.171	1.21	0.175	1.24
high skilled	0.051	0.20	0.076	0.31	0.077	0.31	0.090	0.36
age24–	0.253	1.37	0.271	1.48	0.272	1.48	0.278	1.52
age50+	-0.493	-3.16	-0.493	-3.18	-0.493	-3.18	-0.502	-3.24
couple	-0.009	-0.07	-0.014	-0.10	-0.013	-0.09	-0.008	-0.06
child6	-0.088	-0.59	-0.083	-0.55	-0.083	-0.55	-0.079	-0.53
migrated	-0.246	-1.65	-0.252	-1.69	-0.252	-1.69	-0.262	-1.77
uq	-0.076	-2.22	-0.076	-2.22	-0.076	-2.22	-0.071	-2.22
Log-Lik	-5551		-5221		-4828		-4519	
cases	3239		3239		3239		3239	
N	150204		150204		150204		150204	

A quick glance through Models Ia and Ib in Table 3 reveals the typical impacts of the explanatory variables on unemployment-to-empoyment hazard θ_e. Apart from the direction of the impact, almost all become statistically significant with some variations in the size of the coefficients between Submodels (a) and (b). The variables *migrated* and *couple*, and two variables of work motivation (*monetary* and *social*) turn out to be insignificant. Female, younger and elder UB II receipients, and unemployed UB II recipients in households with children below six years are less likely to enter employment.

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[43]Due to the small sample size, we choose the parameters to estimate parsimoniously.

High- and medium-skilled unemployed, and unemployed reporting they are also motivated to work if they do not require the money ('*non-monetary* working motivation') have a higher likelihood to leave unemployment for employment. Apart from the sanction coefficient, also the significance of the explanatory variables is robust against continuous and discrete specification of duration dependence.

Considering Models Ia and Ib for the exit hazard to non-employment θ_{ne}, the estimated coefficients form a slightly different picture. Compared to the unemployment-to-employment hazard, θ_e, the impact of living with a partner in the same household (*couple*), being younger than 25 (*age24−*) and older than 49 (*age50+*) for Model Ib positively affects the hazard to non-employment. In other words, younger and elder (for Model Ib) unemployed UB II receipients are more likely to exit the labor market. With respect to duration dependence, we find the similar inverse u-shaped impact as for the exit hazard to employment, implying an increasing probability to remain unemployed after a certain length of the unemployment spell.

Surprisingly, unemployment duration exhibits no significant effect on sanction probability (see Table 3 (continued)). Moreover, people over 50 years of age (*age50+*) and *migrated* persons are less likely to be sanctioned, whereas the remaining factors turn out to be insignificant. Finally, the probability of experience a sanction increases with a declining regional unemployment rate *uq*, supporting common practice that job centers pursue a stricter sanction policy in regions with better economic conditions and a lower share of UB II recipients.

6.2   Sensitivity analyses

We modify the baseline specification with selected interaction terms to analyze whether sanction effects with respect to age and education vary across different subgroups of the sample population. First, we let the dummy for being sanctioned δ interact with either age groups (*24−* and *50+*), and second with two qualification levels (*medium* and *high skilled*).

As shown in Table 4, we find strong evidence for a positive sanction effect on the exit hazard to employment θ_e. Considering interaction terms for the age groups, we find the transition to employment to be positively influenced by sanctions for either age cohorts. Apparently, younger than 25 or elder than 49 years old UB II recipients, affected by a sanction are more likely to enter employment, whereas in general these age groups are associated with a lower transition probability.

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Table 4: Exit to Employment θ_e

| | 2 Interaction Terms | | | | 4 Interaction Terms | | | |
| | Model IIa | | Model IIb | | Model IIa | | Model IIb | |
Variable	coef	z-stat	coef	z-stat	coef	z-stat	coef	z-stat
δ*med					0.396	1.97	0.296	1.63
δ*high					-0.105	-0.20	0.285	0.60
δ*age24–	0.834	1.79	1.097	2.51	0.733	1.56	1.010	2.29
δ*age50+	1.114	2.91	0.957	2.72	0.852	2.04	0.716	1.89
lnt	0.284	1.69			0.280	1.67		
lnt^2	-0.123	-2.87			-0.123	-2.88		
d4–6			3.747	25.91			3.754	25.93
d7–12			2.696	19.76			2.696	19.74
d13–36			1.396	12.25			1.394	12.23
women	-0.586	-5.56	-0.468	-5.77	-0.578	-5.49	-0.458	-5.63
med skilled	0.608	4.77	0.412	3.82	0.576	4.51	0.385	3.52
high skilled	0.794	4.45	0.486	3.14	0.798	4.40	0.465	2.93
age24–	-0.596	-3.16	-0.789	-4.65	-0.586	-3.12	-0.782	-4.60
age50+	-1.229	-7.94	-0.826	-6.82	-1.207	-7.80	-0.807	-6.62
couple	-0.041	-0.39	-0.144	-1.54	-0.037	-0.36	-0.140	-1.48
child6	-0.329	-2.59	-0.190	-1.74	-0.324	-2.55	-0.187	-1.72
migrated	-0.084	-0.75	-0.023	-0.23	-0.081	-0.72	-0.026	-0.25
uq	-0.193	-6.82	-0.100	-5.29	-0.191	-6.76	-0.098	-5.17
non-monetary	0.365	2.74	0.293	2.50	0.356	2.68	0.285	2.42
monetary	-0.118	-1.30	-0.055	-0.67	-0.120	-1.31	-0.053	-0.65
social	-0.001	0.00	0.070	0.53	0.005	0.03	0.079	0.60
regional dummies	yes		yes		yes		yes	
unobs. heterogen.[1]	yes		yes		yes		yes	

[1]Mass points for the terms of unobserved heterogeneity are estimated but not reported by the program *Sabre*.

The interaction with qualification levels in the Models IIa and IIb reveal a slightly changed picture as the impact of sanctions on the age group of 'young adults' (*24–*)becomes insignificant. For older unemployed UB II recipients, the transition rate to employment remains positively affected by sanction enforcements. The general positive effect of education on the transition probability to employment becomes insignificant for high-skilled and for medium-skilled unemployed in Model IIb. On average,

Table 4 (continued): Sanction equation θ_e

	2 Interaction Terms				4 Interaction Terms			
	Model IIa		Model IIb		Model IIa		Model IIb	
Variable	coef	z-stat	coef	z-stat	coef	z-stat	coef	z-stat
lnt	-0.350	-1.57	-0.350	-1.57	-0.350	-1.57	-0.350	-1.57
lnt^2	0.062	1.07	0.062	1.07	0.062	1.07	0.062	1.07
woman	-0.190	-1.60	-0.190	-1.60	-0.190	-1.60	-0.190	-1.60
med skilled	0.170	1.21	0.170	1.21	0.170	1.21	0.170	1.21
high skilled	0.076	0.31	0.076	0.31	0.076	0.31	0.076	0.31
age24–	0.271	1.48	0.271	1.48	0.271	1.48	0.271	1.48
age50+	-0.493	-3.18	-0.493	-3.18	-0.493	-3.18	-0.493	-3.18
couple	-0.014	-0.10	-0.014	-0.10	-0.014	-0.10	-0.014	-0.10
child6	-0.083	-0.55	-0.083	-0.55	-0.083	-0.55	-0.083	-0.55
migrated	-0.252	-1.69	-0.252	-1.69	-0.252	-1.69	-0.252	-1.69
uq	-0.076	-2.22	-0.076	-2.22	-0.076	-2.22	-0.076	-2.22
regional dummies	yes		yes		yes		yes	
Log-Lik	-5553		-5222		-5551		-5221	
cases	3239		3239		3239		3239	
N	150204		150204		150204		150204	

the transition probability of high-skilled unemployed seems to be unaffected by sanctions. To sum up, sanction effects do vary in its impact across different age cohorts of the sample population.

Focusing on sanctioned unemployed UB II recipients with regard to their qualification level, the model does not indicate any significant impact of sanctions on high skilled unemployed. For medium qualified persons, Model IIa with the log-quadratic specification (Submodel (a)) indicates a significantly positive effect of sanctions on the transition to employment.

Concerning the hazard to non-employment in Table 5, the results for the medium skilled sanctioned appear robust against the two different baseline hazards. Here, sanctions on medium-skilled unemployed robustly facilitates the transition to non-employment, whereas the insignificant effect of sanctions on high-skilled unemployed resembles the results found for the hazard to employment in Table 4.

In summary, sanction effects do not only vary across different age cohorts but also across different qualification levels. The results of a general positive impact of sanctions on transition out of unemployment, as obtained by the baseline models presented in Table 3, are only partially verified by the

Table 5: Exit to Non-Employment θ_{ne}

| | 2 Interaction Terms | | | | 4 Interaction Terms | | | |
| | Model IIa | | Model IIb | | Model IIa | | Model IIb | |
Variable	coef	z-stat	coef	z-stat	coef	z-stat	coef	z-stat
δ*med					0.498	1.90	0.526	2.20
δ*high					-1.161	-1.09	-0.175	-0.17
δ*age24–	0.445	1.23	0.766	2.39	0.349	0.97	0.654	2.01
δ*age50+	1.171	3.37	1.037	3.39	0.905	2.24	0.687	1.93
lnt	0.974	4.02			0.968	4.00		
lnt^2	-0.237	-3.92			-0.238	-3.97		
d4–6			4.119	20.72			4.126	20.73
d7–12			3.442	19.77			3.442	19.75
d13–36			1.975	12.52			1.973	12.49
women	0.162	1.52	0.188	1.95	0.168	1.60	0.201	2.08
med skilled	0.346	2.69	0.055	0.49	0.306	2.39	0.009	0.08
high skilled	0.195	0.89	-0.169	-0.84	0.252	1.15	-0.174	-0.85
age24–	1.442	6.76	0.922	7.04	1.439	7.01	0.931	7.09
age50+	-0.113	-0.87	0.237	1.97	-0.093	-0.72	0.266	2.18
couple	0.847	6.15	0.604	5.89	0.845	6.32	0.608	5.91
child6	-0.267	-1.99	-0.099	-0.81	-0.262	-1.97	-0.090	-0.73
migrated	-0.227	-1.77	-0.150	-1.30	-0.220	-1.73	-0.148	-1.28
uq	-0.150	-5.08	-0.076	-3.39	-0.147	-5.06	-0.074	-3.30
non-monetary	-0.217	-1.68	-0.219	-1.86	-0.226	-1.76	-0.229	-1.95
monetary	-0.090	-0.87	-0.036	-0.38	-0.093	-0.91	-0.034	-0.36
social	0.253	1.48	0.265	1.70	0.254	1.50	0.277	1.78
unobs. heterogen.[1]	yes		yes		yes		yes	

[1]Mass points for the terms of unobserved heterogeneity are estimated but not indicated by the program *Sabre*.

models, controlling for interaction effects. Put differently, even if benefit sanctions on average facilitate the flow out of UB II receipt across the estimation sample, the impact on the behavior within distinct sub-groups may be ambiguous. So far, we find no evidence for a contradicting effect, for example that sanctions on young UB II receipients exhibit a positive impact of the transition to employment, whereas the effect upon older UB II recipients turns out to be negative. In particular, the transition of unemployment to employment or out of the labor force within different sub-samples of welfare re-

Table 5 (continued): Sanction equation θ_s

| | 2 Interaction Terms | | | | 4 Interaction Terms | | | |
| | Model IIa | | Model IIb | | Model IIa | | Model IIb | |
Variable	coef	z-stat	coef	z-stat	coef	z-stat	coef	z-stat
lnt	-0.350	-1.57	-0.350	-1.57	-0.350	-1.57	-0.350	-1.57
lnt^2	0.062	1.07	0.062	1.07	0.062	1.07	0.062	1.07
woman	-0.190	-1.60	-0.190	-1.60	-0.190	-1.60	-0.190	-1.60
med skilled	0.170	1.21	0.170	1.21	0.170	1.21	0.170	1.21
high skilled	0.076	0.31	0.076	0.31	0.076	0.31	0.076	0.31
age24–	0.271	1.48	0.271	1.48	0.271	1.48	0.271	1.48
age50+	-0.493	-3.18	-0.493	-3.18	-0.493	-3.18	-0.493	-3.18
couple	-0.014	-0.10	-0.014	-0.10	-0.014	-0.10	-0.014	-0.10
child6	-0.083	-0.55	-0.083	-0.55	-0.083	-0.55	-0.083	-0.55
migrated	-0.252	-1.69	-0.252	-1.69	-0.252	-1.69	-0.252	-1.69
uq	-0.076	-2.22	-0.076	-2.22	-0.076	-2.22	-0.076	-2.22
regional dummies	yes		yes		yes		yes	
Log-Lik	-4825		-4516		-4822		-4514	
cases	3239		3239		3239		3239	
N	150204		150204		150204		150204	

cipients entails different, and probably inconsistent, sanction effects. Unfortunately, the small sample size does not allow a more differentiated analysis.

7   Conclusion

In this paper, we have analyzed the impact of benefit sanctions on transition rates from unemployment into two distinct outcomes: employment and non-employment. In contrast to the majority of European studies on benefit sanctions, we focused on employable welfare recipients, in Germany recipients of the UB II, instead of recipients of unemployment insurance benefits. Unlike previous studies — and due to the regulations that UB II is not granted individually but paid to the entire household — we assumed and treated all employable household members of a so-called 'need unit' as affected. On average, the labor market prospectives of welfare recipients are worse than for UI recipients, so that leaving benefit receipt for non-employment appears as a more appealing option for them than for UI recipients.

Based on a Mixed Proportional Hazard (MPH) model which treats sanctions as endogenous, we

actually identified two distinct effects: unemployed UB II recipients that become affected by a sanction are more likely to enter employment, but are also more likely to leave the labor market, at least temporarily. With our analysis we provide causal evidence that the positive effect of benefit sanctions on employment entry of welfare recipients is at expense of a likewise increased probability to get them off the labor market. In other words, there are two groups of unemployed welfare recipients that respond to benefit sanctions differently. Whereas one group of sanctioned individuals on average exhibit increasing transition rates to employment, the other group becomes more likely to leave the entire labor force. According to job search theory, the positive effect of benefit sanctions on the transition to employment is supposed to arise from enhancing job search efforts and from accepting worse job conditions. Thus, the increased transition rate to employment might be at expense of job quality in terms of lower wages and lower job stability (Arni et al. (2013)). On the oder hand, the increased probability for an exit from labor force is likely driven by an intensified search for alternatives to welfare receipt and employment.

At first glance, the findings of an increased impact on transition out of unemployment coincides with the policy intentions — at least the short-term ones — that predominantly aim to reduce the duration and amount spent on welfare in order to lower both unemployment rates and fiscal costs. Here, welfare policy that aims to push people into employment at any price might be accompanied by a downgrade in occupational skills, unstable employment and low wages, even below the subsistence level. In the long-run, the latter potentially leads to the opposite of the policy's intended outcomes — increased durations of (supplementary) welfare receipt for more and more individuals, and hence increased expenditures for welfare payments.

In the end, future research should target the examination of such likely negative effects to obtain a comprehensive evaluation of the impact of benefit sanctions that goes beyond public labor market policy that merely aims to bring people as quickly as possible from benefit receipt into employment.

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