Income Support, (Un-)Employment and Well-Being

Clemens Hetschko

Freie Universität Berlin

Ronnie Schöb

Freie Universität Berlin, ifo Dresden, CESifo

Tobias Wolf [*]

Freie Universität Berlin

April 2016

Abstract

We investigate the non-pecuniary well-being effect of employment subsidies paid as in-work income support compared to both regular employment and unemployment. We expect that subsidized employment helps to overcome several shortcomings of unemployment. Not complying with the social norm to make one's living, however, may also impose a non-monetary cost on subsidized employees. Our identification strategy covers difference-in-differences approaches to analyze transitions between either unemployment and subsidized employment or regular employment and subsidized employment. We do this by using Entropy Balancing to construct synthetic control groups. The specific German "Labour Market and Social Security" (PASS) panel data allows us to take several potentially confounding factors into account. Our findings suggest that subsidized employment makes people better-off than unemployment does, but it is not of equal value to regular employment. These results are in line with previous research and allow for cautious policy implications regarding the effectiveness of an employment subsidy that is shaped as a social benefit.

JEL Classification Codes: I31, I38

Keywords: life satisfaction, subsidized employment, unemployment, in-work income support, social norms

1. Introduction

Income increases people's consumption opportunities, irrespective of the source of income. Increasing consumption opportunities in turn raises individual welfare. In this paper, we question this generally held view in economics and argue that the source of income does matter for individual well-being. In particular, employed workers who receive supplementary welfare benefits may suffer from being dependent on public income support rather than being able to make their own living.

The main aim of in-work income support is to help the unemployed to overcome joblessness. Previous insights on the well-being effects of unemployment shed light on the potential of such a policy, but likewise point to its possible drawback. Being jobless reduces life satisfaction far beyond the misery caused by the income loss (Winkelmann and Winkelmann 1998, Blanchflower and Oswald 2004, Knabe and Rätzel 2011) as it worsens perceived social status, causes people to violate the social norm to work and leads to a deterioration in self-esteem, or identity utility (cf. Schöb 2013). Thus, even a very generous passive labor market policy that compensated unemployed workers fully for the income loss would fail to restore their overall well-being. Active labor market policy (ALMP) aimed at fostering reemployment therefore seems, at first glance, a more promising policy measure to alleviate unemployment-induced well-being losses. Employment subsidization schemes, such as the US 'Earned Income Tax Credit', the French 'La prime pour l'emploi', the British 'Working Tax Credit' and the German 'Ergänzendes Arbeitslosengeld II' (supplementary unemployment benefits II, UB II in the following) are prominent examples of ALMP. They increase the income of low-paid workers to raise their labor supply while keeping firms' labor costs low and labor demand high. Creating additional jobs for unemployed workers in this way, inter alia, helps them to restore compliance with the norm to work and should thus raise their life satisfaction. It is an unsettled question, however, whether such policy tools allow subsidized workers to fully recover their original level of life satisfaction. This will only be the case if the subsidy does not affect subjective well-being beyond its income effect. When workers' identity not only depends on being employed, but also on adhering to what we term the non-dependency norm, i.e. the norm of making a living by one's own efforts (Elster 1989), an employment subsidy shaped as in-work income support will not suffice to completely remove the misery of

the unemployed. Workers who receive part of their salary in the form of public income support may realize that they live off public assistance instead of making their own living. As a result, they may be less satisfied with their lives than regularly employed workers.

In this study, we assess the role of the non-dependency norm for employees' well-being by analyzing the well-being effects of subsidized employment compared to unemployment and non-subsidized (or 'regular') employment. We examine the well-being of working UB II recipients in Germany, using data of the *Panel Arbeitsmarkt und soziale Sicherung* ('Panel Labor Market and Social Security', in the following: PASS). The panel structure of PASS and its special focus on welfare recipients allows us to follow workers out of in-work income support and into it, entering or coming from either regular employment or unemployment, and to observe the within-person changes in life satisfaction accompanying these transitions. Our identification strategy addresses selection due to both time-invariant unobservable and time-variant observable characteristics by constructing synthetic control groups and utilizing various difference-in-differences designs. Multiple regression analyses enable us to disentangle the monetary effect of transitions into or out of in-work income support from the respective non-monetary effect and to control for potentially confounding factors.

We find that people become better-off when leaving unemployment and starting subsidized employment and that this cannot be solely explained by the associated rise in income. Employed people who leave in-work income support and become regularly employed also experience an increase in life satisfaction, even when controlling for income changes. As these people enjoy all the genuine benefits of employment before and after the change, such as adhering to the work norm, this second finding points to a negative impact of receiving income support. We conclude that subsidized employment shaped as in-work income support prevents the beneficiaries from complying with the non-dependency norm.

We proceed as follows. Section 2 summarizes previous findings on the well-being effects of unemployment and welfare dependency to develop hypotheses for our empirical analyses. Data and sampling are described in Section 3. Our empirical identification strategy is elaborated in Section 4. Section 5 presents our main results and the robustness checks conducted. Finally, Section 6 concludes.

2. Previous literature, hypotheses and contribution

Losing work influences subjective well-being in different ways. It has a strong impact on life satisfaction, but hardly any impact on affective measures of well-being. Thus, unemployment affects the cognitive evaluation of one's whole life, such as future uncertainty or the perception of one's self, rather than the frequency of positive and negative emotions experienced over the course of the day (Knabe et al. 2010). Violating the social norm to work partly explains the harmful impact of losing work on the cognitive component of well-being. The jobless suffer more in regions with relatively low unemployment rates despite the fact that they have better reemployment prospects there. It seems that the social norm to work is all the stronger, the greater the number of people in the immediate vicinity who are able to comply (Clark 2003, Powdthavee 2007, Shields and Wheatley Price 2005, Shields Wheatley Price and Wooden 2009). Similarly, job seekers suffer, in particular, in regions where higher shares of voters support cuts in unemployment benefits (Stutzer and Lalive 2004). Retirement increases unemployed workers' life satisfaction, presumably because it allows them to leave the social category 'working age', whose norm to work they violate, and enter the social category 'retirement age', which does not prescribe being employed (Hetschko, Knabe and Schöb 2014). In line with these findings, we formulate

$$\text{Hypothesis 1: } LS_{Unemployed} < LS_{Subsidized\ employed},$$

where *LS* denotes life satisfaction. Primarily because of the strong role of the social norm to work, we expect Hypothesis 1 to hold even when the difference in income between the two labor market states is controlled for.

Besides violation of the work norm, non-compliance with the norm to make a living by one's own efforts could also explain why people suffer a great deal from unemployment (Chadi 2014). Here, a negative impact of well-being may originate from two kinds of welfare stigma (Moffitt 1983, Stuber and Schlesinger 2006): a negative self-perception as a dependent individual (identity stigma) and negative treatment from others (treatment stigma, see also Besley and Coate 1992). Identity stigma and treatment stigma could explain why many people do not apply for welfare although they are eligible (Riphahn 2001, Whelan 2010, Bruckmeier et al. 2013). Non-take-up behavior, however, might also originate from the individual cost of filing for welfare or lacking knowledge about one's eligibility for welfare. In these cases, being dependent on welfare itself need not reduce utility. It is therefore worth analyzing life

satisfaction in order to directly identify the effect of welfare receipt on workers' well-being. Chadi (2012, 2014) shows that life satisfaction and proxies of violating the non-dependency norm, such as the receipt of diverse transfers, are negatively correlated. This also applies to those employed male workers who receive in-work income support at the individual level.[1] Becoming regularly employed restores job seekers' adherence to both the work norm and the non-dependency norm. In contrast, becoming reemployed thanks to in-work income support, which grants welfare transfers conditional on household neediness (e.g. due to low wage income), ensures adherence to the work norm only. Employed workers subsidized in this way are still welfare-dependent, which could continue to interfere with the individual well-being level due to the stigma of the deviation from the non-dependency norm. Assuming that violating the non-dependency norm affects subsidized employees' well-being negatively, we formulate

$$\text{Hypothesis 2: } LS_{Subsidized\ employed} < LS_{Regularly\ employed}.$$

In order to test these two hypotheses, we provide the first specific inquiry into the well-being effects of in-work income support. This study extends the existing branches of literature on (un-)employment and well-being as well as those on the effects of welfare receipt in several ways. Employing difference-in-differences designs with synthetic control groups, we may approach the true life satisfaction effects of in-work income support much closer than Chadi's (2012, 2014) overviews of empirical relationships of transfer receipt and well-being. In the process, we examine potential differences between transitions into and out of in-work income support. The features of PASS data allow us to test whether either the identity stigma or treatment stigma induced by the non-dependency norm violation explains why subsidized employment reduces life satisfaction compared to regular employment. Finally, our results contribute to explaining non-take-up behavior of potential welfare recipients.

3. Institutional background, data and samples

The German *Sozialgesetzbuch II* (Social Code II) combines guaranteed minimum welfare with in-work income support. Welfare is paid to single persons or joint households ("Bedarfsgemeinschaft")[2] that are unable to generate a well-defined socio-economic

---

[1] Analyses of well-being effects of targeted ALMP programs show similar results since the detrimental effects of being unemployed on well-being can be partly overcome by participating in such programs (Korpi 1997, Krug 2009, Bonin and Rinne 2014).

[2] Persons can qualify for such a joint entitlement in the cases of cohabitation, marriage and dependent children.

subsistence level self-earned income.[3] Up to this level, 'unemployment benefits II' (*Arbeitslosengeld II*, UB II) supplement the household's income.[4] Workers with low income are thus eligible to receive supplementary UB II. As long as the monthly gross labor income is less than 100 euros, UB II entitlements are not reduced at all. Each euro of additionally earned labor income reduces UB II by 80 cents up to a threshold of 1,000 euros per month. From 1,000 to 1,200 euros, UB II is reduced by 90% (1,500 euros if the worker has dependent children). Beyond that, labor income replaces UB II completely. These rules are supposed to encourage workers to accept low-paid jobs. As a result, people can receive welfare benefits even though their total income (welfare benefits plus earnings) exceeds the socio-economic subsistence level.

We make use of PASS data covering about 15,000 individuals living in 10,000 households in Germany who have been surveyed annually since 2006. The panel structure enables us to exploit within-person variation. The survey consists of two parts ('dual sampling'), with one sample representing the general population while the second sample is drawn from register data only on households receiving UB II. As a result, PASS surveys considerably more subsidized workers per year than comparable household surveys. The two parts of the survey do not vary regarding the information included. The data cover subjective well-being, working life, employment biographies and other relevant characteristics. Furthermore, PASS contains many UB II specific questions (see Trappmann et al. 2010, 2013). We utilize all the waves starting from the second wave onwards (2007/08, 2008/09, 2010, 2011, 2012, 2013, 2014). Due to fundamental changes in the questionnaire design we do not make use of the first PASS wave (2006/07).

We distinguish three distinct individual labor market states: regularly employed, subsidized employed and unemployed. For the purpose of our analysis, we define a person as employed if she reports any employment spell (including self-employment) at the time of the interview. Besides this information, we condition being employed on a working time from 15 hours a week to 80 hours and not being registered as unemployed. Subsidized (regular) employees live

---

[3] The level of normal requirements changes on a yearly basis and is 404 euros monthly (January 2016) for the first adult in household and 364 euros for her spouse. Children younger than 6 years give rise to an entitlement of 237 euros, 6-13 year old children 270 euros, 14-17 year old children 306 euros, and 18-25 year old dependent adults 324 euros. Accommodation and heating are paid separately and are set at the city/county level.

[4] When workers become unemployed, they receive unemployment insurance benefits (Arbeitslosengeld I, UB I in the following), which amounts to 60% of the former net labor income (67% in exceptional cases). As long as UB I is not as high as the socio-economic subsistence level, workers get UB II in addition. After a certain period of time, the entitlement for UB I expires (between 6 and 24 months, depending on the age of the recipient and the time he has contributed to the insurance). Henceforth, unemployed workers are only eligible for UB II.

in a UB II receiving household. Unemployed workers are not employed, are registered as unemployed and do not report an employment spell during the time of the interview (not even a tax-free German "mini-job"). We restrict our samples to persons of typical working age (18-65 years) and explicitly exclude pupils, students, workers on parental leave, (early-) retirees, public servants and participants of selective ALMPs (the German 'One-Euro-Jobs', retraining, etc.). Given these restrictions, the PASS waves we use include 29,957 observations of regularly employed workers, 3,435 observations of employees receiving income support and 21,383 observations of unemployed people.

Subjective well-being is measured using a general question on people's life satisfaction, '*In general, how satisfied are you currently with your life on the whole?*', which respondents answer on an eleven-point scale from '0 = very dissatisfied' to '10 = very satisfied'. In addition, we make use of data on the disposable equalized monthly household income, which approximates individual consumption opportunities by accounting for the number of household members and economies of scale in housing.[5] As proxies for household wealth, we introduce indicators for the degree of savings (from savings accounts, shares, building society deposits, and life insurances, but not real estate). Socio-demographic characteristics are gender, age, number of adults and children in household, marital status, immigration status, years of schooling and living in the former East or West Germany. Data on social relations outside the household are included as well. Current health status is represented by being registered as disabled or not, filing for disability or not (as current disability shock), the number of visits to the doctor within the last three months and the report of zero/one or more hospital stays within the last twelve months.

For employed individuals we include information about job characteristics such as gross labor earnings, actual weekly working hours, job type (blue collar / white collar / self-employed) and the duration of the current employment spell. Work strain is considered in a novel way by merging a work strain index ('Arbeitsbelastungsindex', see Kroll 2011) with our data. The scale is generated from 39 items of a job questionnaire and aggregates ergonomic burden, psychological strain, social strain, environmental burden and temporal burden of the current occupation. Based on the International Standard Classification of Occupations (ISCO-88), we assign the resulting work strain value ('1 = lowest strain level' to '10 = highest strain

---

[5] Following the OECD equivalence scale, the disposable household income is divided by a weighted number of the persons living in the same household. While the first person gets a weight of 1, any additional person older than 14 years gets a weight of 0.5, children up to the age of 14 years get a weight of 0.3.

level') to all employees in the sample.[6] Finally, we make use of data on the number of workers' recent personal contacts to the 'Jobcenter' in charge.[7]

4. Methodology

4.1 Difference-in-differences design

We conduct four separate difference-in-differences approaches (DiD) to investigate our two hypotheses (Section 2), according to which subsidized employment yields higher life satisfaction than unemployment (1st hypothesis), but lower life satisfaction than regular employment (2nd hypothesis). Each DiD approach examines within-worker variations in life satisfaction (*LS*) accompanying the transitions from subsidized employment to either unemployment or regular employment and *vice versa*. In doing so, we rule out that stable, but unobserved, heterogeneity between workers confound the life satisfaction effects of the three labor market states. In order to examine whether the respective direction of the transition matters, we analyze all the transitions separately instead of applying a framework that combines all the transitions in one approach. This also allows us to adjust the set of conditioning variables to each test (see Section 4.2).

We group our DiD approaches according to the hypothesis examined. Initially, we focus on 'treated' individuals switching either from unemployment to subsidized employment (Test I.1) or *vice versa* (Test I.2). Subsequently, we track life satisfaction changes of regularly employed individuals who change to subsidized employment (Test II.1) and subsidized employed persons switching to regular employment (Test II.2). The transitions always take place between two PASS interviews, which generally encompass a period of approximately one year. The respective control groups always stay in the initial labor market status. This is necessary to disentangle the treatment effects in life satisfaction (*LS*) from counterfactual changes in *LS*. Figure 1 summarizes the four DiD approaches and assigns the numbers of observations to each treatment and control group.

---

[6] 81% of merged work strain scores are ISCO-88 4-digit level, for 16% of occupations we have information on a 3-digit level and 3% of our work strain information were merged on a 2-digit ISCO-88 code level.

[7] 'Jobcenter' is the official German (!) term. This local merger of social security office and employment agency administers UB II for both employed and unemployed people. In addition, it is supposed to help and incentivize them to overcome welfare dependency.

Figure 1: The different DiD designs
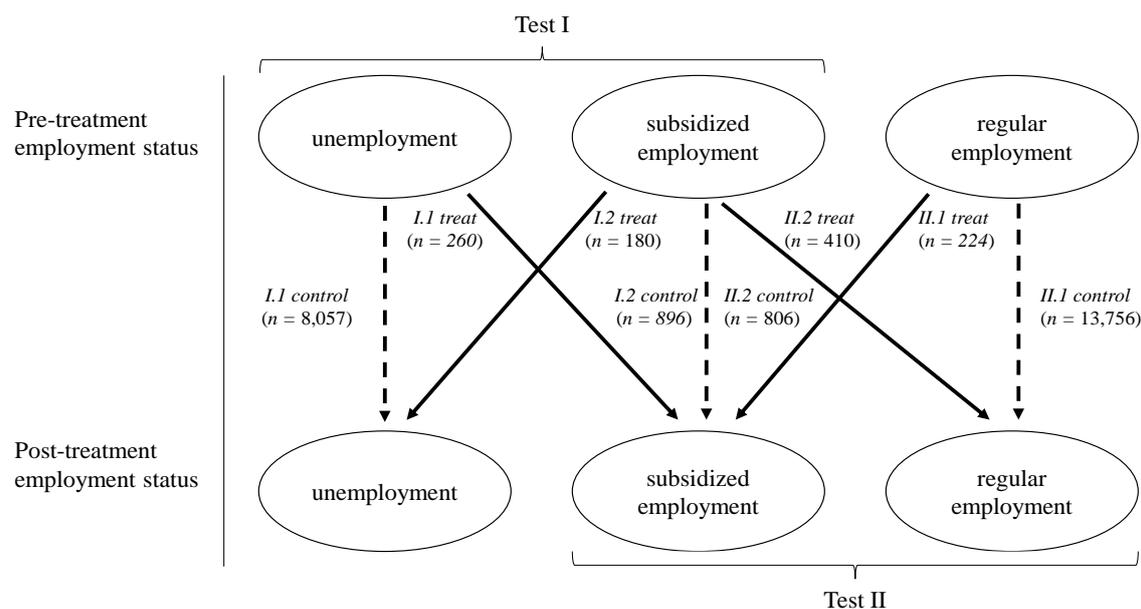
4.2 Entropy balancing

The treatment and control group of each DiD approach are principally comparable because both are in the same pre-treatment labor market status. To increase similarity further, we make use of Entropy Balancing to build synthetic control groups for each treatment group (EB, see Hainmueller 2012). As a non-parametric weighting technique, EB accounts perfectly for non-linear relations between life satisfaction and its covariates as well as addressing selection-into-treatment originating from the covariates. EB weights are assigned to all observations of the control groups so that the statistical moments of the given set of observable pre-treatment characteristics equalize between the treatment and control group. For this purpose, a loss function minimizes the entropy distance of control group individuals' base weights (which equal one for each observation) and EB weights upon the condition that the set of control group covariate moments are as similar as possible to the treatment group moments. In contrast to the similar propensity score weighting technique (see, e.g., Caliendo and Kopeinig 2008), EB weights perfectly balance the control group characteristics with the treatment group.[8] In addition, EB does not rely on propensity scores, which need to be estimated and are thus prone

---

[8] We generated the individual weights on the basis of the first and second moment. Reweighting has been implemented with the Stata package ebalance written by Jens Hainmueller and Yiqing Xu. For a previous application see Marcus (2013).

to errors. As we generate weights for each test separately, we are able to account for different associations between the covariates of the respective DiD approach.

Tables A1-A4 in the Appendix describe characteristics of the treatment and control groups of each DiD approach as well as the results of the respective EB reweighting procedures.[9] If the pre-treatment status is unemployment, a variety of information on workers' pre-treatment financial situation, socio-demographic background as well as objective health are taken into account. Pre-treatment job characteristics add to these sets when the pre-treatment status is either subsidized or regular employment. Tables A1-A4 document that, before reweighting, the treatment and control groups differ in many respects, which could point to selection issues. EB, however, causes the observed differences between treatment and control groups to vanish. Except for test I.2, balancing also reduces the gaps in pre-treatment life satisfaction between treatment and control groups, although life satisfaction is not included in the sets of conditioning variables.

4.3 Regression analyses

Due to the UB II eligibility criteria, changes in income or size of the joint household trigger switches out of and into subsidized employment. If these changes themselves affect well-being, they will confound the genuine effects of switching labor market states. To eliminate such sources of bias, we conduct multiple regression analyses based on the EB-reweighted control groups. The underlying econometric model explains the individual *i'*s change in life satisfaction between the pre-treatment PASS interview and the post-treatment PASS interview ($\Delta LS = LS - LS_{pre}$) by being part of the treatment group (dummy *TREAT*), which varies from the first to the fourth DiD approach as described above. Any life event leading into or out of subsidized employment must be reflected by an increase or decrease in household income or household size because these two criteria determine the eligibility for income support. For test I our econometric model therefore considers the change in log-point household income ($\Delta \log (y) = \log (y) - \log (y_{pre})$) accompanying the transition as well as two dummy variables for changes in household size (*SIZEUP, SIZEDOWN*). Considering $\Delta \log (y)$ also allows us to disentangle the non-monetary effect of switching labor market states (e.g. norm effects) from the monetary changes that originate from those transitions. Wave dummies (*W*) account for time effects. The basic version of the model finally includes the average change in life satisfaction (α) of the

---

[9] The data allow us to balance on the first and second moment. Cardinal and nominal covariates are balanced on mean and variance, whereas categorical variables need only be balanced on the first moment.

reference group and an individual error term ε:

$$(1) \qquad \Delta LS_i = \alpha + \beta TREAT_i + \gamma(\Delta \ln(y_i)) + \delta SIZEUP_i + \eta SIZEDOWN_i + \xi W_i + \varepsilon_i .$$

Tests II.1 and II.2 are based on samples of workers who are employed at both the pre-treatment and the post-treatment PASS interview. Here, we can expand the model with further controls concerning occupational changes between the two points in time. In particular, job mobility (new job: *NJ*, see Chadi and Hetschko 2015) and changes in working hours ($\Delta h = h - h_{pre}$, see Rätzel 2012, Wunder and Heineck 2013) might alter well-being and could thus confound the genuine effects of switching between subsidized and regular employment. We also control for varying working conditions as measured by changes in work strain $\Delta s = s - s_{pre}$.

$$(2) \qquad \begin{aligned} \Delta LS_i &= \alpha + \beta TREAT_i + \gamma(\Delta \ln(y_i)) + \delta SIZEUP_i + \eta SIZEDOWN_i \\ &\quad + \theta NJ_i + \kappa(\Delta s_i) + \lambda(\Delta h_i) + \xi W_i + \varepsilon_i. \end{aligned}$$

EB weighting and the within-individual regressions consider various and very important sources of selection and potentially confounding factors, but are not necessarily all-embracing. Thus, our approach cannot ultimately claim causal inference.

5. Results

5.1 Do the unemployed benefit from subsidized employment?

We track individuals who experience a switch from unemployment to subsidized employment (test I.1) or vice versa (test I.2). Figure 2 depicts the average life satisfaction levels of the treatment group before and after the switch and of the balanced control group, which continues to stay in the respective initial labor market status. Workers who transition from unemployment to subsidized employment experience a strong increase in life satisfaction. This change significantly exceeds the respective change in life satisfaction of the balanced control group by 0.697 points ($p < 0.01$; without balancing, this DiD would be 0.682, $p < 0.01$). The opposite transition (Test I.2) yields a corresponding pattern. Subsidized workers who become unemployed experience a drop in life satisfaction whereas the well-being level of the control group remains quite stable. The difference in the life satisfaction change between treatment and control group is -0.277 ($p < 0.05$; without balancing, this DiD would be -0.315, $p < 0.05$). In sum, our mean analyses suggest finding a job (losing work) restores (decreases) workers' life satisfaction even though the new (old) job is (was) subsidized.

Figure 2. Average changes in life satisfaction between subsidized jobs and unemployment
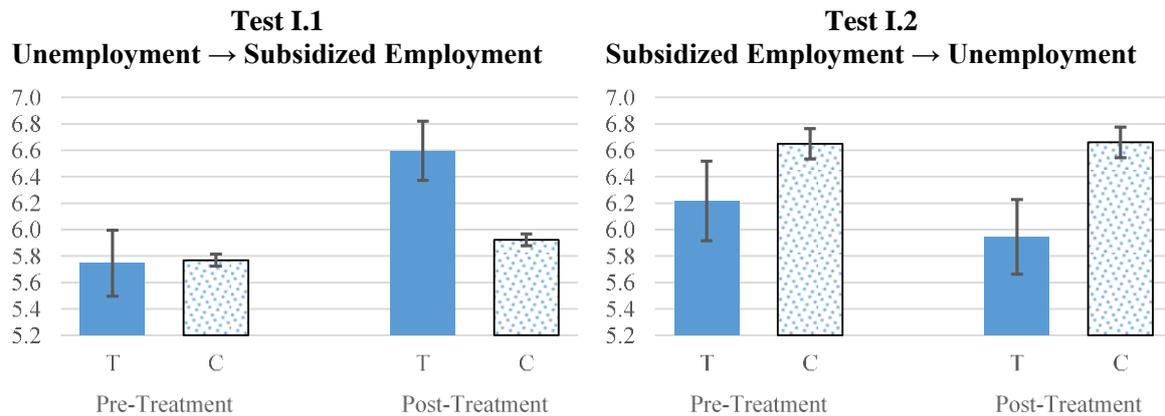
Test I.1
Unemployment → Subsidized Employment

Test I.2
Subsidized Employment → Unemployment

Source. PASS 2007-2014.
Note: bars illustrate the average life satisfaction level of the respective treatment groups (T) and control groups (C). Whiskers denote 95% confidence intervals.

As explained in Section 4.3, multiple OLS regression analyses allow us to disentangle the monetary component of the well-being effect of transitions between labor market states from the non-monetary component. In addition, the true life satisfaction effect of the transition will be better approached when well-being effects of coincident changes in the UB II eligibility criteria are controlled for. According to columns 1 and 2 of Table 1, changes in disposable household income and household size in the empirical model hardly affect the DiD estimate of switching from unemployment to subsidized employment. The effect remains substantially and highly statistically significant. Columns 3 and 4 show that leaving subsidized employment and entering unemployment reduces life satisfaction compared to remaining in subsidized employment, while controlling for changes in income and household size barely affects this result. Altogether, tests I.1 and I.2 provide strong support for our first hypothesis. Unemployment is accompanied by lower well-being than subsidized employment. The benefits of working, such as complying with the social norm to work, seem to render a subsidized job more satisfying than having no job at all, although subsidized employees do not adhere to the norm of making one's own living. Our results thus suggest in-work income support to be a suitable instrument for restoring the well-being of the unemployed if it fosters their reemployment opportunities. Besides these main insights, we find that life satisfaction does not relate significantly to changes in household size. Furthermore, mainly based on the results of test I.1, disposable income increases life satisfaction.

Table 1. DiD unemployment and subsidized employment

| Dependent variable: Δ LS	Test I.1. Unemployment → Subsidized Employment		Test I.2. Subsidized Employment → Unemployment	
	1	2	3	4
treatment	0.699***	0.638***	−0.312*	−0.296*
	(0.116)	(0.118)	(0.165)	(0.171)
Δ disposable income (log)		0.425***		0.136
		(0.156)		(0.231)
(+) person in household		0.039		−0.043
		(0.345)		(0.349)
(−) person in household		0.126		−0.070
		(0.209)		(0.389)
Constant	0.338***	0.345***	−0.164	−0.171
	(0.129)	(0.133)	(0.222)	(0.223)
wave controls	yes	yes	yes	yes
R²	0.036	0.042	0.013	0.014
N	8,317	8,317	1,076	1,076

Source. PASS 2007-2014

Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level. Robust standard errors in parentheses. The control group consists of individuals who are still unemployed (columns 1 and 2) and individuals who remain in subsidized employment (columns 3 and 4). Both control groups have been reweighted by pre-treatment characteristics from the categories income and wealth, socio-demographic characteristics and health status (for the details see Tables A1 and A2 in the Appendix). With respect to leaving unemployment (columns 1 and 2), EB is additionally conducted with previous unemployment duration. Regarding leaving subsidized employment (columns 3 and 4), EB also accounts for previous employment duration. The constant states a change in life satisfaction of a control group individual without any change in disposable household income or household size.

5.2 Is subsidized employment equivalent to regular employment?

Next, we follow workers from regular employment into subsidized employment (test II.1) and from subsidized employment to regular employment (test II.2). To begin with, Figure 3 allows us to derive descriptive results from mean analyses. On average, transitioning from regular employment to subsidized employment reduces satisfaction with life while staying regularly employed leaves well-being almost unaffected. The DiD amounts to −0.238 points ($p < 0.01$; without balancing it would be −0.148, $p = 0.1$). Becoming a regular worker after having been subsidized employed increases well-being. The difference to the change in life satisfaction of people who stay regularly employed is 0.345 ($p < 0.05$; without balancing, 0.295, $p < 0.05$).

Figure 3. Average changes in life satisfaction between subsidized and regular jobs
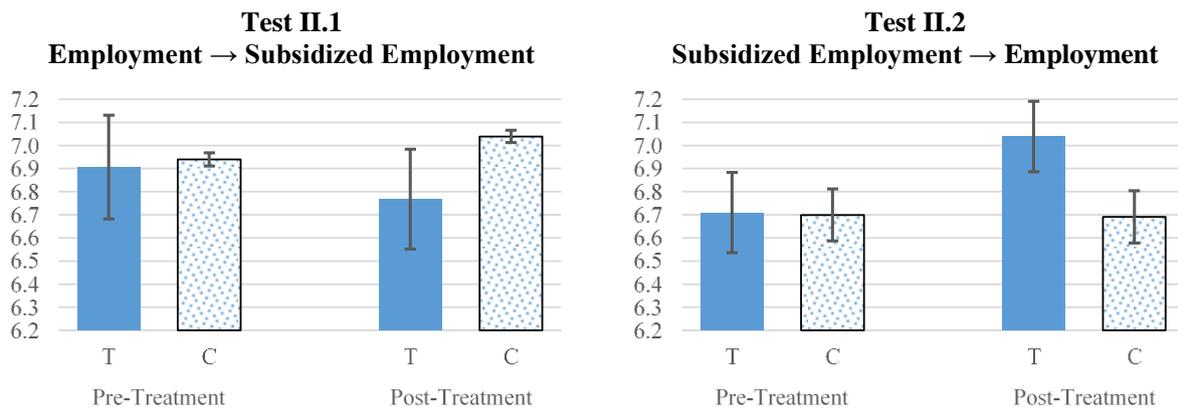
Test II.1
Employment → Subsidized Employment

Test II.2
Subsidized Employment → Employment

Source. PASS 2007-2014.
Note: bars illustrate the average life satisfaction level of the respective treatment groups (T) and control groups (C). Whiskers denote 95% confidence intervals.

In the next step, we run multiple regression analyses considering changes in household size, disposable income and occupational characteristics (see table 2). For test II.1, adding these controls reduces the effect size only slightly, but at the cost of statistical significance (columns 1-3). Controls for test II.2 also reduce the coefficient of leaving in-work income support, but it continues to be statistically significant (columns 4-6). In sum, the empirical analyses on transitions between subsidized employment and regular employment provide some evidence in support of hypothesis 2. The fact that subsidized employees do not adhere to the non-dependency norm could explain why they enjoy lower well-being than regular workers.

In addition, we find some evidence for a positive role of income in workers' well-being and for a honeymoon effect of starting a new job (test II.2). The life satisfaction question is answered enthusiastically in particular immediately after the beginning of new employment (3 months after beginning a new employment spell).[10] In addition, overall well-being decreases with a decline in work strain.

---

[10] Interestingly, the effect is stronger compared to the recent study by Chadi and Hetschko (2015). An important difference in the methodologies might be that low-paid workers are oversampled in our database (because of the PASS' focus on UB II), whereas Chadi and Hetschko (2015) analyze representative German panel data. Perhaps the honeymoon effect is stronger among workers who receive relatively low wages.

Table 2. DiD regular employment and subsidized employment

Dependent variable: Δ LS	Test II.1: Regular employment → Subsidized employment			Test II.2: Subsidized employment → Regular employment		
	1	2	3	4	5	6
treatment	−0.229*	−0.172	−0.185	0.341***	0.282**	0.233**
	(0.125)	(0.133)	(0.134)	(0.111)	(0.113)	(0.113)
Δ disposable income (log)		0.262	0.265		0.385***	0.418***
		(0.160)	(0.161)		(0.132)	(0.132)
(+) person in household		−0.280	−0.279		0.137	0.166
		(0.242)	(0.245)		(0.381)	(0.381)
(−) person in household		−0.206	−0.196		−0.012	0.006
		(0.274)	(0.274)		(0.206)	(0.205)
new job (< 4 months)			0.109			0.580***
			(0.305)			(0.216)
new job (4 - 12 months)			0.122			0.150
			(0.187)			(0.161)
Δ change in work strain			0.053			−0.129**
			(0.070)			(0.060)
Δ change in hours per week			−0.004			0.003
			(0.007)			(0.009)
constant	0.172	0.129	0.134	−0.181	−0.234	−0.256
	(0.162)	(0.157)	(0.157)	(0.193)	(0.206)	(0.196)
wave controls	yes	yes	yes	yes	yes	yes
R²	0.013	0.020	0.020	0.017	0.025	0.038
N	13,980	13,980	13,980	1,211	1,211	1,211

Source. PASS 2007-2014.

Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level. Robust standard errors in parentheses. The control group consists of individuals which remain regularly employed (col. 1-3) and individuals which remain in subsidized employment (columns 4-6). The control groups have been reweighted by pre-treatment characteristics from the categories income and wealth, socio-demographic characteristics, health status and job characteristics (for details see Appendix A3 and A4). The constant states a change in life satisfaction of a control group individual that does not experience any change in disposable household income, household size, work strain or working hours and does not switch jobs.

5.3 Regular employment, unemployment and the non-dependency norm

So far, our results indicate $LS_{unemployed} < LS_{subsidized\ employed}$ and $LS_{subsidized\ employed} < LS_{regularly\ employed}$. For reasons of consistency, we should expect $LS_{unemployed} < LS_{regularly\ employed}$ from a similar analysis of the transitions between regular employment and unemployment. Applying such an additional 'test III', we can also further elaborate the impact of the non-dependency norm. Not all of the unemployed necessarily violate this norm. In addition to those who can rely on statutory unemployment insurance benefits (UB I), there are others who are supported by family members since they live in households with too high an income to be eligible to receive welfare in form of UB II. In these cases, the unemployed workers do not live off welfare benefits and may thus not feel they violate the non-dependency norm. We, therefore, conjecture that the well-being effect of transitioning from regular employment to unemployment is more detrimental for UB II recipients than for those workers who will not receive UB II when unemployed. By the same logic, we expect that leaving unemployment for a regular job will increase life satisfaction more if workers have

received UB II while unemployed compared to workers who have not. Table 3 displays the results for both transitions (tests III.1 and III.2). Becoming unemployed as a regular worker is detrimental in general. The pure change in life satisfaction has almost the same magnitude as for subsidized workers who become unemployed (see Table 3, column 1). In column 2, being a welfare recipient when unemployed is indicated by the interactions. The reduction in life satisfaction is quantitatively less severe for the non-dependent unemployed ($p < 0.06$).

Table 3. DiD unemployment and regular employment

Dependent variable: Δ LS	Regular employment → Unemployment		Unemployment → Regular employment	
	1	2	3	4
Treatment	−0.459*** (0.084)		0.839*** (0.075)	
Treatment * UB I / no transfers		−0.368*** (0.091)		
Treatment * UB II		−0.661*** (0.152)		
Treatment * UB I / no transfers (in $t{-}1$)				0.664*** (0.106)
Treatment * UB II (in $t{-}1$)				0.946*** (0.090)
Δ disposable income (log)	0.256** (0.104)	0.228** (0.105)	0.370*** (0.103)	0.347*** (0.102)
(+) person in household	0.176 (0.184)	0.165 (0.184)	0.102 (0.164)	0.096 (0.163)
(−) person in household	0.120 (0.150)	0.108 (0.149)	−0.152 (0.153)	−0.139 (0.154)
Constant	−0.189 (0.125)	−0.187 (0.125)	0.283*** (0.093)	0.272*** (0.092)
Wave controls	yes	yes	yes	yes
R^2	0.036	0.039	0.073	0.075
N	14,454	14,454	8,663	8,663

Source. PASS 2007-2014.
Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level. Robust standard errors in parentheses. Control groups have been reweighted by the following characteristics: disposable household income per capita (OECD weighting scale), cash savings, age, number of adults in household, number of children in household, number of close contacts outside household, years of schooling, sex, marital status, migratory background, German region, disability status, treatment in hospital and doctor consultations. For switching from unemployment (columns 1 and 2), EB has also considered pre-treatment unemployment duration. For switching from regular employment (columns 3 and 4), we additionally condition on gross earnings, work strain, working hours per week and employment type as well as pre-treatment employment duration. The control group consists of individuals which are still regularly employed (columns 1 and 2) and individuals which remain unemployed (columns 3 and 4). The constant states a change in life satisfaction of a control group individual without any change in disposable household income or household size. We differentiate between individuals becoming unemployed and receiving UB or no transfers (column 2) and individuals becoming unemployed receiving UB II.

Switching from unemployment to regular employment increases life satisfaction. The effect seems stronger than for the transition to a subsidized job (see Table 1). For those leaving pre-treatment UB II receipt, the rise in life satisfaction is significantly larger than for formerly unemployed workers who have lived off other sources of income. Altogether, these results are

consistent with our main results as they imply $LS_{unemployed} < LS_{regularly\ employed}$. With respect to the unemployed, our findings also underline the notion of a non-dependency norm and its expected negative role in workers' well-being.

5.4 Identity stigma and treatment stigma

Based on previous research, we have argued that identity stigma and treatment stigma could explain a negative influence of being unable to comply with the non-dependency norm on workers' life satisfaction (Section 2). Active labor market policy means that Jobcenters try to incentivize transfer recipients to overcome welfare dependency. For that purpose, the Jobcenter are to make frequent appointments, send requests and contact recipients by phone. By not answering these requests appropriately recipients take the risk of being sanctioned by way of benefit deductions. Thus, frequent calls of the Jobcenter makes welfare dependency very salient to subsidized workers. They might feel stigmatized as being unable to make their own living due to such treatment (Stuber and Schlesinger 2006), which could explain the well-being cost of subsidized employment compared to regular jobs. In the following, we test this notion by incorporating whether subsidized workers had contact with the Jobcenter or not.[11]

The information about contacts to the Jobcenter is available for all the PASS waves, except wave 7. In the course of test I.1 (transition from unemployment to subsidized employment), we add a further control variable accounting for the qualitative change in personal Jobcenter contacts. This control ($\Delta JobCen$) equals 1 if no pre-treatment contacts to Jobcenter are reported before the transition, but there are some afterwards. In the reverse case, the variable is −1. It is 0 if there is no change in the contact.[12]

As columns 1 and 2 of Table 4 reveal, there is a close resemblance, based on the data that allow us to construct $\Delta JobCen$, to the original treatment effect for the transition from unemployment to subsidized employment. In column 3, we consider $\Delta JobCen$ as well as an interaction of $\Delta JobCen$ and the treatment dummy. It turns out that the change in life satisfaction of workers who stay unemployed decreases in $\Delta JobCen$. Becoming subsidized employed might strengthen this effect, although the interaction effect is not statistically significant. If anything, $\Delta JobCen$ seems to lower the positive treatment effect of entering subsidized employment. With the same extension, test I.2 yields consistent findings. However, we do not report these results as the interaction effect relies on less than 30 observations.

---

[11] Of course, contacts can also be initiated by the welfare recipients. Personal contacts depend on duration of UB II receipt, household context and the discretionary decisions of the Jobcenters' case managers.

[12] Estimations accounting for the change in *overall* Jobcenter contacts would lead to the same conclusions.

We cannot conduct the same analysis for test II since regular employees do not report Jobcenter contact at all. However, in the case of test II.1 we can utilize the fact that some workers get in contact with the Jobcenter when becoming subsidized employed while others do not. Columns 4 and 5 of Table 4 facilitate a comparison between the treatment coefficients based on the whole sample (from Table 2) and a reduced sample including data about Jobcenter contacts. Both effects are negative, though not statistically significant. In column 6, we exclude 45 workers who become subsidized employees and do not report getting in contact with the Jobcenter. This enlarges the negative treatment effect, which is now statistically significant. Thus, the transition from regular employment to subsidized employment is clearly negative for life satisfaction if accompanied by Jobcenter contacts. A similar analysis for test II.2 is not feasible as all workers who transition from subsidized employment to regular employment had previous contact with the Jobcenter.

Table 4: The role of individual contacts to Jobcenter

Dependent variable: Δ LS	Test I.1 Unemployment → Subsidized employment			Test II.1 Regular employment → Subsidized employment		
	1	2	3	4	5	6
Treatment	0.638***	0.584***	0.609***	−0.185	−0.161	−0.431**
	(0.118)	(0.152)	(0.150)	(0.134)	(0.160)	(0.173)
Change in Jobcenter contacts			−0.188**			
			(0.092)			
Treatment × change in Jobcenter contacts			−0.186			
			(0.376)			
Δ disposable income (log)	0.425***	0.491***	0.473**	0.267*	0.417**	0.318*
	(0.156)	(0.186)	(0.186)	(0.161)	(0.180)	(0.177)
(+) person in household	0.039	0.232	0.252	−0.279	−0.297	−0.119
	(0.345)	(0.493)	(0.474)	(0.246)	(0.350)	(0.386)
(−) person in household	0.126	−0.111	−0.118	−0.191	0.075	0.139
	(0.209)	(0.277)	(0.277)	(0.273)	(0.228)	(0.223)
new job (< 4 months)				0.109	0.146	0.022
				(0.306)	(0.366)	(0.274)
new job (4 - 12 months)				0.122	0.250	0.304
				(0.187)	(0.220)	(0.220)
Δ Change in work strain				0.053	0.064	0.084
				(0.070)	(0.081)	(0.090)
Δ Change in hours per week				−0.004	−0.007	−0.007
				(0.007)	(0.008)	(0.008)
Constant	0.344***	0.363***	0.334**	0.134	0.092	0.228
	(0.133)	(0.137)	(0.136)	(0.158)	(0.159)	(0.167)
wave controls [1]	yes	yes	yes	yes	yes	yes
R^2	0.042	0.042	0.046	0.020	0.027	0.040
N	8,317	4,928	4,928	13,980	11,165	11,120

Source: PASS 2007-2014.
Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level. Robust standard errors in parentheses. Control groups are reweighted by EB (see Tables 1, 2, A1 and A3 for detailed descriptions). [1]The wave controls include all waves in columns 1 and 4, from 2 to 6 in columns 2 and 3 as well as from 2 to 6 plus wave 8 in columns 5 and 6. Column 1 (4) repeats column 2 from Table 1 (column 3 from Table 2).

Altogether, our analyses of Jobcenter contacts point to treatment stigma. This could explain why subsidized employees suffer from not complying with the non-dependency norm and report lower life satisfaction than regular employees.

5.5 Robustness checks

Our empirical strategy accounts for selection on observables by employing entropy balancing. To test the validity of this reweighting procedure, we also conducted propensity score reweighting of the control group with the same sets of pre-treatment conditioning variables for our four main tests. This yields similar point estimates (in sign and magnitude) in the four main regression analyses. Our results thus do not seem to be sensitive to the weighting procedure applied.

Up to here, we have not made use of our outcome variable for reweighting observations of the control groups. Hence, the pre-treatment life satisfaction between treatment and control comes closer but does not completely equalize. Adding pre-treatment life satisfaction to the set of conditioning variables for EB solves this potential issue and strengthens the size and significance of our main results.

One necessary condition for unbiased DiD estimates is that the life satisfaction of the treatment group and that of the control group follow a common trend. We can analyze this issue by extending the investigation period to the second-last pre-treatment year ($t-2$). Figure A1 in the Appendix shows that all the control groups follow the same trends in life satisfaction as the treatment groups until the pre-treatment PASS interview ($t-1$).

6. Concluding remarks

In-work income support helps workers to overcome the extraordinary misery of unemployment. However, workers may still feel dependent on public support as they remain unable to make their own living. Our results support both views. The transition from unemployment into subsidized employment increases life satisfaction by more than what is explainable by the associated change in income. Bringing people back to work thus allows them to regain the non-monetary benefits of working, such as complying with the social norm to work again. The fact that the transition from subsidized employment into regular employment also yields an improvement in life satisfaction which does not originate completely from the accompanying change in income implies that subsidized employment does not fully remove the loss of well-

being caused by losing work. Being employed but having to rely on income support leaves people dependent on public transfers and they thus violate the non-dependency norm.

We consider our findings to be a lower bound of the negative impact of the non-dependency norm on employees' well-being. Our results show a potential impact the non-dependency norm has on those people who actually receive income support when working. We do not detect this detrimental effect on the large share of entitled individuals who do not take up UB II and forego money in order to adhere to the non-dependency norm. However, our results can explain why these workers do not apply for welfare. The monetary effect of the subsidy may not compensate for the well-being loss caused by non-compliance with the norm to make a living by one's own effort.

Our findings imply that ALMP measures are beneficial. They offset, at least partly, the harm done by involuntary unemployment. However, in-work income support fails to make supported workers as well off as those who are regularly employed. This will be desirable if this policy is primarily designed as a stepping stone to bring involuntarily unemployed people back into regular work. ALMP then incorporates a non-monetary incentive to overcome welfare-dependency in the long run. If, however, it turns out that in-work income support becomes a permanent alimentation of a stable group of working poor, such a redistribution scheme will come at a non-negligible well-being cost for the beneficiaries. A cautious policy recommendation would then be to apply a better designed policy that eliminates the detrimental effect of norm violation while coming at similar cost for tax payers and yielding similar allocative effects on reemployment probabilities. In particular, it seems necessary to replace individually determined income support by general income redistribution schemes such as a negative income tax. In the same vein, reducing social security contributions at the lower end of the wage distribution can diminish perceived dependence on the welfare state and the negative stigma effects from non-dependency norm violation.

References

Besley, Timothy and Stephen Coate (1992): "Understanding welfare stigma: taxpayer resentment and statistical discrimination", *Journal of Public Economics* 48(2), pp. 165–183.

Blanchflower, David G and Andrew J Oswald (2004): "Well-being over time in Britain and the USA", *Journal of Public Economics* 88(7–8), pp. 1359–1386.

Bonin, Holger and Ulf Rinne (2014): "'Beautiful Serbia' - objective and subjective outcomes of active labour market policy in a transition economy", *Economics of Transition* 22(1), pp. 43–67.

Bruckmeier, Kerstin, Johannes Pauser, Ulrich Walwei, and Jürgen Wiemers (2013): "Simulationsrechnungen zum Ausmaß der Nicht-Inanspruchnahme von Leistungen der Grundsicherung", *IAB Forschungsbericht* 5.

Caliendo, Marco and Sabine Kopeinig (2008): "Some Practical Guidance for the Implementation of Propensity Score Matching", *Journal of Economic Surveys* 22(1), pp. 31–72.

Chadi, Adrian (2012): "Employed but still unhappy? On the Relevance of the Social Work Norm", *Schmollers Jahrbuch: Journal of Applied Social Science Studies* 123(353), pp. 1–26.

Chadi, Adrian (2014): "Regional unemployment and norm-induced effects on life satisfaction", *Empirical Economics* 46(3), pp. 1111–1141.

Chadi, Adrian and Clemens Hetschko (2015): "How Job Changes Affect People's Lives – Evidence from Subjective Well-being Data", *SOEPpapers* 747-2015.

Clark, Andrew E (2003): " "Unemployment as a Social Norm: Psychological Evidence from Panel Data",", *Journal of Labor Economics* 21(2), pp. 323–351.

Elster, Jon (1989): "Social Norms and Economic Theory", *Journal of Economic Perspectives* 3(4), pp. 99–117.

Hainmueller, Jens (2012): "Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies", *Political Analysis* 20, pp. 25–46.

Hetschko, Clemens, Andreas Knabe, and Ronnie Schöb (2014): "Changing Identity: Retiring from Unemployment", *The Economic Journal* 124(575), pp. 149–166.

Knabe, Andreas and Steffen Rätzel (2011): "Quantifying the psychological costs of unemployment: the role of permanent income", *Applied Economics* 43(21), pp. 2751–2763.

Knabe, Andreas, Steffen Rätzel, Ronnie Schöb, and Joachim Weimann (2010): "Dissatisfied with life but having a good day: Time-use and well-being of the unemployed", *Economic Journal* 120(547), pp. 867–889.

Korpi, Tomas (1997): "Is utility related to employment status? Employment, unemployment, labor market policies and subjective well-being among Swedish youth", *Labour Economics* 4(2), pp. 125–147.

Kroll, L (2011): "Konstruktion und Validierung eines allgemeinen Index für die Arbeitsbelastung in beruflichen Tätigkeiten auf Basis von ISCO-88 und KldB-92", *Methoden, Daten, Analysen (mda)* 5(1), pp. 69–90.

Krug, Gerhard (2009): *Paradoxe Wirkung von Niedriglohnzuschüssen. Zum Einfluss der Reziprozitätsnorm auf die Stabilität finanziell geförderter Beschäftigung*, Bertelsmann: Bielefeld.

Marcus, Jan (2013): "The effect of unemployment on the mental health of spouses – Evidence from plant closures in Germany", *Journal of Health Economics* 32(3), pp. 546–558.

Moffitt, Robert (1983): "An economic model of welfare stigma", *The American Economic Review* 73(5), pp. 1023–1035.

Powdthavee, Nattavudh (2007): "Are there geographical variations in the psychological cost of unemployment in South Africa?", *Social Indicators Research* 80(3), pp. 629–652.

Rätzel, Steffen (2012): "Labour Supply, Life Satisfaction, and the (Dis)Utility of Work", *The Scandinavian Journal of Economics* 114(4), pp. 1160–1181.

Riphahn, Regina T (2001): "Rational Poverty or Poor Rationality? The Take-up of Social Assistance Benefits", *Review of Income and Wealth* 47(3), pp. 379–398.

Schöb, Ronnie (2013): "Unemployment and Identity", *CESifo Economic Studies* 59(1), pp. 149–180.

Shields, Michael A and Stephen Wheatley Price (2005): "Exploring the economic and social determinants of psychological well-being and perceived social support in England", *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 168(3), pp. 513–537.

Shields, Michael, Stephen Wheatley Price, and Mark Wooden (2009): "Life satisfaction and the economic and social characteristics of neighbourhoods", *Journal of Population Economics* 22(2), pp. 421–443.

Stuber, Jennifer and Mark Schlesinger (2006): "Sources of stigma for means-tested government programs", *Social Science & Medicine* 63(4), pp. 933–945.

Stutzer, Alois and Rafael Lalive (2004): "The Role of Social Work Norms in Job Searching and Subjective Well-Being", *Journal of the European Economic Association* 2(4), pp. 696–719.

Trappmann, Mark, Jonas Beste, Arne Bethmann, and Gerrit Müller (2013): "The PASS panel survey after six waves", *Journal for Labour Market Research* 46(4), pp. 275–281.

Trappmann, Mark, Stefanie Gundert, Claudia Wenzig, and Daniel Gebhardt (2010): "PASS – A Household Panel Survey for Research on Unemployment and Poverty", *Schmollers Jahrbuch - Journal of Applied Social Science Studies* 130, pp. 609–622.

Whelan, Stephen (2010): "The take-up of means-tested income support", *Empirical Economics* 39(3), pp. 847–875.

Winkelmann, Liliana and Rainer Winkelmann (1998): "Why Are the Unemployed So Unhappy? Evidence from Panel Data", *Economica* 65(257), pp. 1–15.

Wunder, Christoph and Guido Heineck (2013): "Working time preferences, hours mismatch and well-being of couples: Are there spillovers?", *Labour Economics* 24, pp. 244–252.

Appendix

Table A1: Summary Statistics Test I.1

	Scale	Treatment	Control	Difference	Control (Entropy Balanced)
Number of observations:		N = 260	N = 8,057		N = 8,057
		mean / share (std. dev.)	mean / share (std. dev.)	Control – Treatment	mean / share (std. dev.)
Life satisfaction (t-1)					
Life satisfaction (mean)	0 - 10	5.75 (2.04)	5.59 (2.15)	-0.15	5.77 (2.07)
Income and Wealth (t = -1)					
Equivalence income (OECD scale) (mean)	€	738.58 (193.03)	715.13 (262.66)	-23.45	738.09 (193.14)
Savings < 1000 € (share)	%	86.5	86.2	-0.3	86.5
Savings < 5000 € (share)	%	8.5	8.5	0.0	8.5
Savings > 5000 € (share)	%	4.2	4.5	0.3	4.2
Socio-demographic characteristics (t = -1)					
Age (mean)	18-64	40.38 (10.66)	45.34 (11.74)	4.97***	40.35 (10.64)
Adults in household (mean)	1-10	1.55 (0.80)	1.49 (0.67)	-0.06	1.55 (0.80)
Children in household (mean)	0-7	1.06 (1.19)	0.67 (1.08)	-0.39***	1.06 (1.19)
Close contacts outside household (mean)	1-99	6.57 (7.92)	7.22 (7.86)	0.65	6.56 (7.91)
Years of schooling (mean)	7-21	11.40 (2.18)	11.14 (2.37)	-0.25*	11.39 (2.18)
Months in unemployment (mean)	0-428	38.24 (45.05)	54.93 (50.60)	16.68***	38.21 (45.03)
Gender: male (share)	%	38.8	45.5	6.7**	38.8
Marital status: single (share)	%	42.7	36.8	5.9*	42.7
Marital status: married (share)	%	28.5	27.7	0.7	28.5
Marital status: divorced (share)	%	26.9	32.8	5.9**	26.9
Marital status: widowed (share)	%	1.5	2.4	0.8	1.5
Immigrant (1st – 3rd generation) (share)	%	30.0	26.0	-4.0	30.0
Region: West-Germany (share)	%	60.4	62.0	1.6	60.3
Health status (t = -1)					
Disability: Officially registered	%	6.5	16.7	4.3***	6.5
Disability: Currently applying for registration	%	2.7	5.0	2.3*	2.7
Hospital stay (12 months)	%	13.5	19.9	6.4**	13.5
Number of doctoral consultations (3 months)	0-90	2.66 (4.90)	3.55 (6.07)	0.89***	2.66 (4.90)

Source: PASS 2007-2014

*Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level.*

Table A2: Summary Statistics Test I.2

	Scale	Treatment	Control	Difference	Control (Entropy Balanced)
Number of observations:		N = 180 mean / share (std. dev.)	N = 896 mean / share (std. dev.)	Control – Treatment	N = 896 mean / share (std. dev.)
Life satisfaction (t= -1)					
Life satisfaction (mean)	0-10	6.21 (2.04)	6.64 (1.73)	0.42***	6.71 (1.71)
Income and Wealth (t= -1)					
Equivalence income[1] (OECD scale) (mean)	€	844.53 (710.96)	840.36 (219.46)	-4.17	./.
Savings < 1000 € (share)	%	87.8	83.7	-4.1	87.8
Savings < 5000 € (share)	%	10.6	12.3	1.7	10.6
Savings > 5000 € (share)	%	1.7	3.7	2.0	1.7
Socio-demographic characteristics (t= -1)					
Age (mean)	18-63	41.99 (11.04)	42.94 (9.98)	0.94	41.99 (10.58)
Adults in household (mean)	1-10	1.89 (1.15)	1.63 (0.73)	-0.26***	1.89 (1.31)
Children in household (mean)	0-7	1.16 (1.34)	1.09 (1.09)	-0.07	1.16 (1.17)
Close contacts outside household (mean)	1-99	7.72 (8.06)	7.20 (7.61)	-0.52	7.72 (8.29)
Years of schooling (mean)	7-21	11.16 (2.09)	11.55 (2.30)	0.38**	11.16 (2.14)
Gender: male (share)	%	43.3	33.0	-10.3***	43.3
Marital status: single (share)	%	28.3	29.4	1.0	28.3
Marital status: married (share)	%	37.8	38.5	0.7	37.8
Marital status: divorced (share)	%	31.7	30.9	-0.8	31.7
Marital status: widowed (share)	%	2.2	0.9	-1.3	2.2
Immigrant (1st – 3rd generation) (share)	%	27.2	27.8	0.6	27.2
Region: West-Germany (share)	%	53.3	59.8	6.5	53.3
Health status (t= -1)					
Disability: Officially registered	%	7.2	6.1	-1.1	7.2
Disability: Currently applying for registration	%	2.8	1.7	-1.1	2.8
Hospital stay (12 months)	%	12.8	11.7	-1.1	12.8
Number of doctoral consultations (3 months)	0-90	3.04 (4.68)	2.35 (4.43)	-0.64*	3.04 (8.74)
Job characteristics (t= -1)					
Months in current employment spell (mean)	0-499	29.32 (60.66)	57.09 (76.08)	27.76***	29.33 (38.07)

Source: PASS 2007-2014

Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level.[1] Variable was skipped due to non-convergence of EB algorithm on the second moment.

Table A3: Summary Statistics Test II.1

	Scale	Treatment	Control	Difference	Control (Entropy Balanced)
Number of observations:		N = 224 mean / share (std. dev.)	N = 13,756 mean / share (std. dev.)	Control – Treatment	N = 13,756 mean / share (std. dev.)
Life satisfaction (t= -1)					
Life satisfaction (mean)	*0-10*	6.91 (1.71)	7.41 (1.45)	0.50***	6.94 (1.70)
Income and Wealth (t= -1)					
Monthly gross earnings (mean)	€	1,248.13 (653.40)	2,479.30 (1,924.71)	1,231.17***	1246.41 (652.99)
Equivalence income (OECD scale) (mean)	€	966.64 (368.90)	1666.11 (1526.56)	699.47***	965.31 (369.09)
Savings < 1000 € (share)	%	75.4	31.2	-44.2***	75.3
Savings < 5000 € (share)	%	18.3	22.8	4.5	18.3
Savings > 5000 € (share)	%	5.4	43.2	37.9***	5.4
Socio-demographic characteristics (t= -1)					
Age (mean)	18-64	41.08 (10.42)	43.30 (10.26)	2.22***	41.02 (10.41)
Adults in household (mean)	1-10	1.70 (0.77)	1.83 (0.67)	0.13**	1.69 (0.77)
Children in household (mean)	0-8	0.97 (1.05)	0.87 (1.01)	-0.11	0.97 (1.05)
Close contacts outside household (mean)	1-99	8.70 (10.30)	7.93 (7.49)	-0.78	8.69 (10.29)
Years of schooling (mean)	7-21	11.44 (2.03)	12.73 (2.70)	1.30***	11.42 (2.03)
Gender: male (share)	%	41.5	50.3	8.8***	41.5
Marital status: single (share)	%	30.8	29.5	-1.3	30.8
Marital status: married (share)	%	32.1	53.4	21.2***	32.1
Marital status: divorced (share)	%	33.5	15.0	18.5***	33.5
Marital status: widowed (share)	%	3.1	1.7	-1.4	3.1
Immigrant (1st – 3rd generation) (share)	%	24.6	18.7	-5.8**	24.5
Region: West-Germany (share)	%	54.5	72.0	17.6***	54.4
Health status (t= -1)					
Disability: Officially registered	%	5.8	7.2	1.4	5.8
Disability: Currently applying for registration	%	1.3	1.3	-0.0	1.3
Hospital stay (12 months)	%	9.4	10.4	1.0	9.4
Number of doctoral consultations (3 months)	0-70	1.82 (2.50)	2.09 (3.48)	0.27	1.82 (2.50)
Job characteristics (t= -1)					
Work strain (mean)	1-10	6.63 (2.45)	5.54 (2.80)	-1.09***	6.62 (2.44)
Hours (per week)	15-80	36.06 (10.90)	40.31 (10.77)	4.25***	36.01 (10.89)
Months in current employment spell (mean)	0-647	51.94 (77.67)	98.97 (106.57)	47.03***	51.87 (77.62)
Employment Type: Blue collar-worker (share)	%	33.0	23.0	-10.0***	33.0
Employment Type: White collar-worker (share)	%	57.6	68.2	10.8***	57.5
Employment Type: Self-employed (share)	%	9.4	8.7	-0.7	9.4

Source: PASS 2007-2014
*Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level.*

Table A4: Summary Statistics Test II.2

	Scale	Treatment	Control	Difference	Control (Entropy Balanced)
Number of observations:		N = 410	N = 806		N = 806
		mean / share (std. dev.)	mean / share (std. dev.)	Control – Treatment	mean / share (std. dev.)
Life satisfaction (t = -1)					
Life satisfaction (mean)	*0-10*	6.71	6.64	-0.07	6.70
		(1.79)	(1.71)		(1.63)
Income and Wealth (t= -1)					
Monthly gross earnings (mean)	€	1143.09	953.51	-189.57***	1142.68
		(528.93)	(474.78)		(528.84)
Equivalence income (OECD scale) (mean)	€	877.92	838.84	-39.08***	877.61
		(238.88)	(207.84)		(238.84)
Savings < 1000 € (share)	%	78.3	83.9	5.6**	78.3
Savings < 5000 € (share)	%	16.3	12.4	-3.9*	16.3
Savings > 5000 € (share)	%	4.6	3.5	-1.2	4.6
Socio-demographic characteristics (t= -1)					
Age (mean)	19-63	40.36	42.70	2.33***	40.35
		(10.28)	(9.92)		(10.27)
Adults in household (mean)	1-10	1.69	1.62	-0.07	1.69
		(0.71)	(0.74)		(0.71)
Children in household (mean)	0-6	1.06	1.14	0.09	1.06
		(1.03)	(1.11)		(1.02)
Close contacts outside household (mean)	1-99	7.26	7.28	0.02	7.26
		(6.19)	(7.86)		(6.19)
Years of schooling (mean)	7-21	11.53	11.52	-0.01	11.53
		(2.03)	(2.28)		(2.03)
Gender: male (share)	%	37.6	31.5	-6.0**	37.6
Marital status: single (share)	%	32.4	29.7	-2.8	32.4
Marital status: married (share)	%	35.4	38.1	2.7	35.4
Marital status: divorced (share)	%	30.2	31.0	0.8	30.2
Marital status: widowed (share)	%	0.1	0.1	0.0	0.1
Immigrant (1st – 3rd generation) (share)	%	22.2	28.3	6.1**	22.2
Region: West-Germany (share)	%	58.5	59.9	1.4	58.5
Health status (t= -1)					
Disability: Officially registered	%	6.1	5.5	-0.6	6.1
Disability: Currently applying for registration	%	2.7	1.9	-0.8	2.7
Hospital stay (12 months)	%	9.0	11.8		9.0
Number of doctoral consultations (3 months)	0-90	2.17	2.37	0.20	2.17
		(5.41)	(4.59)		(5.40)
Job characteristics (t= -1)					
Work strain (mean)	1-10	6.67	6.90	0.23*	6.66
		(2.38)	(2.23)		(2.38)
Hours (per week)	15-80	34.26	32.34	-1.92***	34.25
		(11.09)	(11.74)		(11.09)
Months in current employment spell (mean)	0-499	46.19	56.93	10.75**	46.17
		(67.41)	(74.64)		(67.40)
Employment Type: Blue collar-worker (share)	%	32.9	32.6	-0.3	32.9
Employment Type: White collar-worker (share)	%	57.3	55.5	-1.9	57.3
Employment Type: Self-employed (share)	%	9.5	11.7	2.2	9.5

Source: PASS 2007-2014

*Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level.*

Figure A1. Time trends in life satisfaction

Test I.1

Test I.2

Test II.1

Test II.2
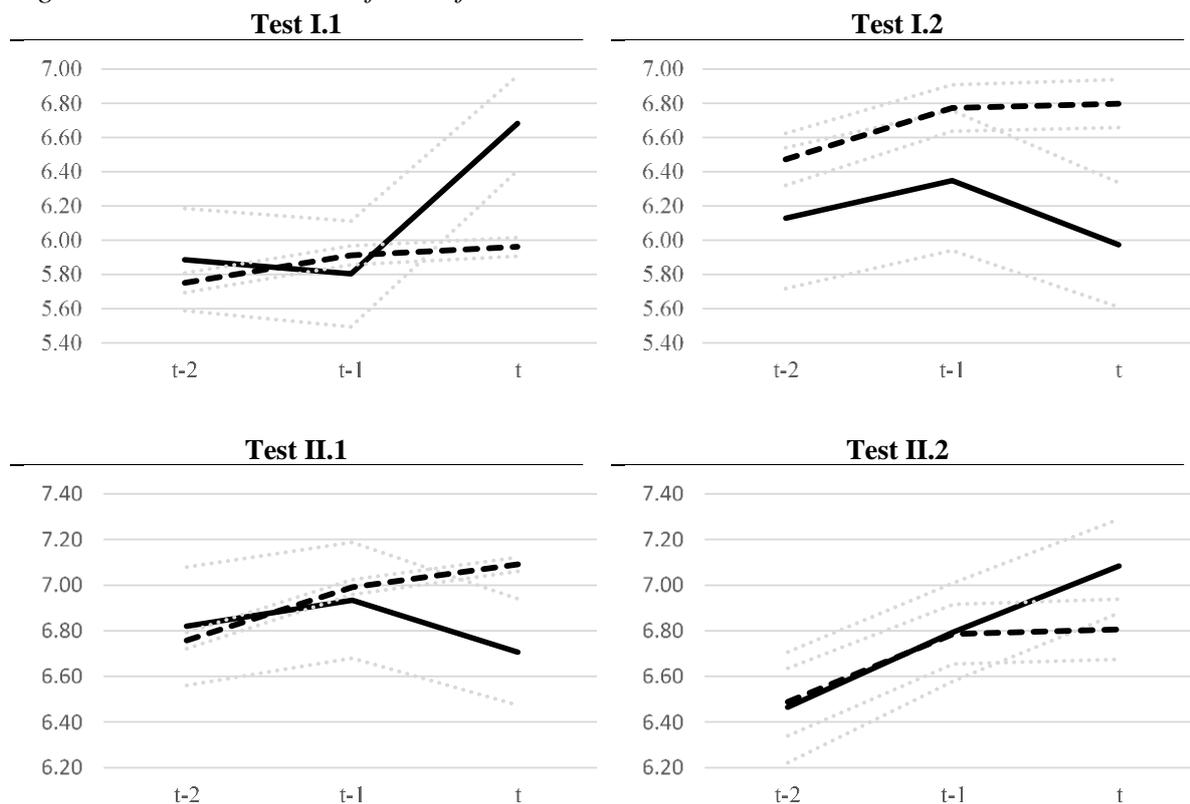
Source. PASS 2007-2014.

Note. Solid lines denote treatment group trends, dashed lines denote control group trends. Dotted lines represent 95% confidence interval. At t the treated individuals change labor market status while control group individuals remain in the initial status. All of the control groups are reweighted using EB.