



UNIVERSITÄT HOHENHEIM



FZID Discussion Papers

CC Health Care Management

Discussion Paper 88-2014

JOB INSECURITY, EMPLOYABILITY, AND HEALTH: AN ANALYSIS FOR GERMANY ACROSS GENERATIONS

**Steffen Otterbach
Alfonso Sousa-Poza**

Discussion Paper 88-2014

**Job Insecurity, Employability, and Health:
An Analysis for Germany across Generations**

Steffen Otterbach
Alfonso Sousa-Poza

Download this Discussion Paper from our homepage:
<https://fzid.uni-hohenheim.de/71978.html>

ISSN 1867-934X (Printausgabe)
ISSN 1868-0720 (Internetausgabe)

Die FZID Discussion Papers dienen der schnellen Verbreitung von
Forschungsarbeiten des FZID. Die Beiträge liegen in alleiniger Verantwortung
der Autoren und stellen nicht notwendigerweise die Meinung des FZID dar.

FZID Discussion Papers are intended to make results of FZID research available to the public
in order to encourage scientific discussion and suggestions for revisions. The authors are solely
responsible for the contents which do not necessarily represent the opinion of the FZID.

Job Insecurity, Employability, and Health: An Analysis for Germany across Generations

STEFFEN OTTERBACH* and ALFONSO SOUSA-POZA*

Abstract:

In this paper, we use 12 waves of the German Socio-Economic Panel to examine the relationship between job insecurity, employability and health-related well-being. Our results indicate that being unemployed has a strong negative effect on life satisfaction and health. They also, however, highlight the fact that this effect is most prominent among individuals over the age of 40. A second observation is that job insecurity is also associated with lower levels of life satisfaction and health, and this association is quite strong. This negative effect of job insecurity is, in many cases, exacerbated by poor employability.

Keywords: Job insecurity, employment, employability, well-being, health, Germany

JEL Classification: J21, J22

* University of Hohenheim, Institute for Health Care & Public Management, Fruwirthstr. 48, D-70599 Stuttgart, Germany.

Corresponding author: Steffen Otterbach (steffen.otterbach@uni-hohenheim.de)

The data used in this publication were made available by the German Socio-Economic Panel Study at the German Institute for Economic Research (DIW), Berlin. This paper was presented at the research seminar of the Department of Health Systems Management at the Ben Gurion University in Beer-Sheva, Israel. The authors would like to thank the seminar participants, as well as Jan Goebel at the DIW, for valuable comments and discussion.

1 Introduction

The widespread belief in many industrialized countries that job insecurity has been rising in recent decades is also reflected in the clear upward trend in media attention to this topic in the past few years. Suggested causes for this apparent increase in instability include an increase in flexible work arrangements, a rise in the number of small and medium-sized firms, an increase in (part-time) female employment, technological progress (especially increased use of IT and Internet communication in the past decade), a severe recession in the 1990s, and globalization. In fact, although it remains unclear whether this perceived trend actually exists (e.g., Bergmann and Mertens, 2011, p. 421), a large body of literature documents the negative effects of insecurity on health and general well-being (e.g., Astell-Burt and Feng, 2013; Catalano, 1991). It also provides some evidence of job insecurity's heterogeneous effects across different regions and socio-economic groups, which could be attributable to employability. Put simply, good job prospects may mediate job insecurity's negative effects on well-being.

Despite the importance of this observation, little empirical evidence exists on employability's role in such a context, with the possible exception of Green (2011), who shows that an increase in men's employability from 0 to 100% reduces the detrimental effect of job insecurity by more than half. This observation is important because, as Green (2011) emphasizes, knowing the relation between job insecurity, employability, and well-being stands at the centre of the European debate over 'flexicurity' (European Commission, 2007), which combines increases in market flexibility (and thus possibly job insecurity) with measures to enhance employability (e.g., training). This debate also applies to Germany's turn-of-the-century Hartz Reforms (i.e., the German government's Agenda 2010), which increased market flexibility (e.g., by reducing unemployment benefits and forcing the unemployed to accept any type of legal job)

while simultaneously trying to enhance employability (e.g., by increasing the number of job centres, supporting further vocational education from the German Federal Labour Agency, and introducing new types of employment).

The aim of this paper is to analyse the effect that job insecurity and employability have on health and general well-being in what we believe is the first such study for Germany and one of only a few that directly analyse the interplay of job insecurity and employability (see also Green, 2011). An additional study goal is to assess the effects of job insecurity, employability, and unemployment on health and well-being for different age groups, a little researched issue despite anecdotal evidence that these effects differ across the life course, with particularly severe unemployment and insecurity effects among the young and the old. For younger workers, the effects apparently stem from loss of human capital and corresponding effects on future earnings, while older workers tend to suffer re-employment difficulties. Finally, our analysis, being based on panel data, helps remedy the dearth of longitudinal studies on the effects of job insecurity and unemployment on well-being (Cheng and Chan, 2008).

As in many previous studies, our results indicate that being unemployed has a strong negative effect on both life satisfaction and health. They also, however, highlight the fact that this effect is, in general, most prominent among individuals over the age of 40. A second observation is that job insecurity is also associated with lower levels of life satisfaction and health, and this association is quite strong (up to half the size of being unemployed). These negative effects of job insecurity are, in many cases, exacerbated by poor employability.

The paper proceeds as follows: Section 2 reviews the relevant research, section 3 describes the data and methodology, section 4 presents the results, and section 5 outlines the conclusions.

2 Previous Research

Since research on job insecurity gained momentum in the 1970s and 1980s, when many western economies faced hitherto unknown high unemployment rates, numerous studies have examined the 'nature, causes and consequences of this increasingly important phenomenon' (Greenhalgh and Rosenblatt, 1984, p. 438). This growing research interest is also well documented in a number of literature reviews and meta-analyses on job insecurity. Cheng and Chan (2008), for example, after reviewing 133 studies on how age, tenure, and gender moderate job insecurity's consequences, provide evidence that the negative relation between job insecurity and both physical and psychological health is more pronounced among older employees and employees with longer tenure than among younger employees and those with shorter tenure. They also replicate an earlier meta-analytic study by Sverke et al. (2002), which shows that job insecurity not only has adverse consequences for employees' health but also for their well-being at work, job involvement, organizational commitment, work performance, and turnover intentions. The psychological literature, which sees job security as a stress factor, confirms its detrimental effect on health and well-being (Green, 2011; Cheng and Chan, 2008; Sverke et al., 2002).

Many of these and more recent studies, however, especially those in occupational psychology, can be criticized on the grounds of small and cross-sectional samples that often encompass only males in specific occupational groups. Thus, both Sverke et al. (2002, p. 259) and Cheng and Chan (2008, p. 291) detect a lack of longitudinal studies on the long-term consequences of job security and emphasize the importance of identifying the potential moderating effects on such consequences. Sverke et al. (2002), for instance, point to the need for further study on whether personality traits like positive and negative affectivity or neuroticism; personal dispositions like individual-specific need for security, centrality of work, or

employability; and demographic factors like age and family situation have buffering or aggravating effects on job insecurity's consequences.

In a recent literature review De Witte et al. (2012) investigate the role of mediators which possibly extenuate or aggravate the relationship between job insecurity and its various consequences. One possible mediator could be workers' employability, i.e. an employee's (self-perceived) chance of finding another job in the future. Good employability prospects could attenuate the negative consequences of job insecurity. For example, using a cross-sectional sample of 639 Belgian employees, Silla et al. (2009) show that good employment prospects can mitigate the negative effect of job insecurity on life satisfaction. Interestingly, however, employability appears to have no moderating effect on psychological distress (Silla et al., 2009, p. 747). Further evidence from a similar cross-sectional sample of 559 Belgian employees underscores employability's importance for workers' well-being and suggests that employability can either serve as a means of securing jobs or can buffer the potential negative consequences of job insecurity (de Cuyper et al., 2008, p. 501). Berntson and Marklund (2007), using two waves of the National Working Life Cohort in Sweden, also show that self-perceived employability is positively related to overall health and mental well-being one year after the initial observation.

In fact, employability is of great importance for both employees and the unemployed, as demonstrated by Green's (2011) analysis of longitudinal and nationally representative data for Australia. Specifically, this author shows that perceiving one's own labour market prospects as good substantially reduces the detrimental effects of job insecurity and unemployment on life satisfaction and mental health. Knabe and Rätzel (2011), using panel data from the GSOEP, further demonstrate that both bad re-employability opportunities for the unemployed and job insecurity for the employed have detrimental effects on life satisfaction. Whilst Clark et

al. (2001) in their study (which is also based on GSOEP data) indicate large negative effects of having experienced past unemployment on wellbeing (so-called scarring effects), Knabe and Rätzl (2011) demonstrate that this effect is diluted and becomes negligible by taking into account the fear of future unemployment and its negative effect on wellbeing (so-called scarring effect).

Additional studies by Clark (2003) and Clark et al. (2010), based on longitudinal data from the BHPS and GSOEP, respectively, focus on the social norm effects of unemployment. That is, whereas numerous psychological and economic studies suggest that being unemployed substantially decreases individual well-being (Clark and Oswald, 1994; Winkelmann and Winkelmann, 1998; Blanchflower and Oswald, 2004; Kassenboehmer and Haisken-DeNew, 2009; Flint et al., 2013), there is also strong evidence that the unemployment of others has an external effect on both the employed and the unemployed. Specifically, aggregate unemployment is negatively related to the employed but positively related to the unemployed, and these effects are more distinct among men than women (Clark, 2003, p. 345f; Clark et al., 2010, p. 60). According to Luechinger et al.'s (2010) comparison of German private sector and public sector workers, this negative relation between regional unemployment rates and worker happiness is mainly driven by economic insecurity and job insecurity. A similar 'fear-of-unemployment effect' is identified by di Tella et al. (2003) using data on 12 European countries and the U.S. from the Eurobarometer and General Social Survey, respectively (p. 823). These authors thus conclude that the total loss from a typical economic downturn – including psychological costs – is far beyond the pure monetary costs such as decreased GDP, diminished income, and increased unemployment.

Recent studies on the health consequences of fixed-term employment versus permanent employment also pinpoint job insecurity as an important mediating factor. For example, Virtanen et al. (2005), in their literature review, find a link between

temporary employment and psychological morbidity. This relation, however, is influenced by contextual factors such as job insecurity, the unemployment rate, and the share of temporary employed workers within a country (p. 619). Waenerlund et al. (2011) using Swedish cohort data, also conclude that the relation between temporary employment and both self-assessed health and psychological distress is partly captured by potential mediators like job insecurity, high job strain, and low cash margin (p. 536). In later work, Virtanen et al. (2011) analyse the impact of job insecurity on such health measures as self-assessed health, sleep quality, and mental health to determine whether job insecurity's negative effects on health are stronger among temporary or permanent workers. Interestingly, they find that such detrimental effects are independent of work contract type (p. 570).

Job security, therefore, has become an important part of the implicit psychological contract between employer and employee, which is seen as a fundamental parameter of the modern employer-employee relationship (Sok et al., 2013). Traditionally, in any such contract, the employer offers salary, advancement opportunities, job security, and other working conditions in exchange for workers' skills, productivity, job performance, and organizational commitment (Ye et al., 2012). Many modern employer-employee relationships, however, are characterized by a lack of job security, meaning that employability has become an essential part of a new type of psychological contract under which employees engage in high levels of job performance and flexibility despite low levels of job security. Yet at the same time, employees expect an employer's support in advancing their employability (de Cuyper et al., 2008, p. 491).

In this paper, we contribute to this literature by analysing the effect of job insecurity on subjective well-being and different measures of individual health. In particular, we explicitly take into account the interaction between job insecurity and

employability (as in Green, 2011) and the impacts of individual and aggregate unemployment.

3 Data and Methodology

In our extension of the previous literature, we employ data from the German Socio-Economic Panel (GSOEP)¹, one of the most widely used long-running panel studies in Europe. The GSOEP, repeated annually since 1984, currently encompasses about 12,000 households with approximately 21,000 individuals and is representative of the German population. In addition to self-reported variables that describe respondents' overall life satisfaction and overall health (including health satisfaction and self-assessed health status), the GSOEP also contains physical and mental health scale scores based on a specific version of the SF-12v2TM questionnaire. These SF-12v2TM indicators, basically a subset of the SF-36v2TM Health Survey, have been collected at two-year intervals since 2002 and are considered a generally reliable and internationally applicable tool for measuring health-related quality of life.²

In this study, we analyse individuals aged 20 to 65 years who are either employed (full or part-time) or registered as unemployed, thereby excluding the economically inactive population. Both unemployed and employed respondents provide information about their individual employability. More specifically, they are asked whether it would be easy (1), difficult (2), or impossible (3) to find a new job if they were looking for one (unemployed) or to find a job that is at least as good as their current one if they lost their job today (employed)³. In a first step, we assign category (1) responses to the respective questions to a dummy variable 'good prospects' and

¹ For further information on the GSOEP, see Wagner et al. (2007).

² For further information on the GSOEP-specific version of the SF-12v2 questionnaire and the computation of the physical and mental health scale scores, see Andersen et al. (2007).

³ See Appendix Table A.1 for an overview of these and the outcome variables with respect to question format and coding.

categories (2) and (3) to a dummy variable 'bad prospects' for the unemployed and employed. In addition, we dichotomize the responses to a question asking employed respondents whether they are very concerned (1), somewhat concerned (2), or not concerned at all (3) about their job security into 'low job security', for (1) and (2), versus 'high job security', for (3). We are especially interested in whether employability – that is, having good or bad prospects – interacts with employment status and job security. In particular, we explore whether good prospects attenuate the potentially adverse effects of unemployment on well-being and whether interaction between job security and bad prospects affects life satisfaction and the health measures under analysis.

Because the GSOEP data also enable the linking of respondents' residences to regional and spatial indicators, we use unemployment rates and GDP per capita – both on the 400+ counties level (*Kreise* and *kreisfreie Städte*) – as control variables.⁴ By adding in a large variation of these macro-variables over both space and time, we can probe for spill-over effects on individual well-being, such as social stigma or social norm effects.

Due to data availability our analysis of the dependent variables life satisfaction, health satisfaction and self-assessed health is carried out using an unbalanced panel for the years 1997, and 1999 to 2009. Physical and mental health scale scores are available and analysed for the years 2002, 2004, 2006, and 2008. Individuals are observed for an average period of 5.1 years (life satisfaction, health satisfaction and self-assessed health) and 2.5 years (physical and mental-health scale scores). Accepting Ferrer-i-Carbonell and Frijters's (2004) claim that it makes little difference whether variables of general satisfaction are treated as ordinal or cardinal, we estimate fixed-effects models that treat the dependent variables as cardinal. We also, however,

⁴ In principle, the German counties resemble the statistical nomenclature of the European Union on the NUTS 3 level but are not necessarily congruent. For further information on GSOEP regional data, see Knies and Spiess (2007).

pay serious attention to these authors' emphasis on controlling for time-invariant unobserved factors, especially in studies in which the outcomes and exposures are based on self-reports.

In this present study, both the life satisfaction and self-reported health variables, as well as the individual perceptions of employability and job security, are based on subjective self-reported data and could thus be influenced by unobserved personal traits like positive or negative affectivity, extrovertism, neuroticism, or hardiness (Brief et al.,1988; Watson et al,1988). Hence, to hold the influences of these unobserved third factors constant, we control for unobserved heterogeneity and estimate fixed-effects models of the following form:

$$Y_{it} = \alpha + \beta_1 UE_{it} + \beta_2 (UE_{it} \times GP_{it}) + \beta_3 LowJS_{it} + \beta_4 (LowJS_{it} \times BP_{it}) + \beta_5 (HighJS_{it} \times BP_{it}) + \gamma'X_{it} + \eta'Z_{kt} + \mu_i + \varepsilon_{it}$$

where Y_{it} denotes individual i 's overall life satisfaction or health related well-being at time t , UE_{it} is a dummy variable for being unemployed, and $(UE_{it} \times GP_{it})$ is an interaction term of being unemployed and having good prospects for finding an appropriate position. $LowJS_{it}$ is a dummy variable indicating low job security/job insecurity in terms of being very or somewhat concerned about job security. $(LowJS_{it} \times BP_{it})$ is an interaction term between respondents' being exposed to job insecurity and having bad prospects for finding an appropriate position were they to lose their current job. Likewise, $(HighJS_{it} \times BP_{it})$ is an interaction term between having a secure job and bad prospects for finding as good a job in case of job loss. X_{it} is a set of standard control variables used in the well-being literature: net household income per capita, being married, the number of children, a dummy variable indicating whether a person in need of care is living in the household, a dummy variable for whether respondents own the

accommodation they live in, and the grade of disability. This variable vector also includes dummy variables for age categories and years. Z_{kt} is a set of macro-variables – local unemployment rates and GDP per capita on the county level – while μ_{it} , captures unobserved individual-specific effects and ε_{it} is a disturbance term. All models are estimated for men and women separately and standard errors are clustered at the county and year level. To assess whether the impact of unemployment, low job security, or employability on life satisfaction and health varies across age, we also run the regression models separately for different age groups.

4 Results

Our initial descriptive analysis illustrates the distribution of the sample by labour force status; that is, the categories resulting from the (interacted) dummy variable specification of our regression models (see table 1). Table 2 reports the group-specific means of the dependent variables according to these categories.

Table 1: Absolute and relative frequency distributions of labour force status

Labour force status	TOTAL		MEN		WOMEN	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Unemployed						
Unemployed x good prospects	346	0,27	198	0,29	148	0,25
Unemployed x bad prospects	9.098	7,17	4.626	6,82	4.472	7,58
Employed						
Low job security x good prospects	7.517	5,93	4.214	6,21	3.303	5,6
Low job security x bad prospects	57.996	45,73	32.017	47,18	25.979	44,06
High job security x good prospects	15.551	12,26	8.021	11,82	7.530	12,77
High job security x bad prospects	36.317	28,64	18.780	27,68	17.537	29,74
Total	126.825	100	67.856	100	58.969	100

Table 2: Means and grouped means of dependent variables by labour force status

	TOTAL		MEN		WOMEN	
	Mean	SE	Mean	SE	Mean	SE
Life satisfaction	6,99	0,00	6,98	0,01	6,99	0,01
Unemployed x good prospects	6,77	0,10	6,61	0,15	6,99	0,14
Unemployed x bad prospects	5,60	0,02	5,42	0,03	5,78	0,03
High job security x good prospects	7,63	0,01	7,66	0,02	7,60	0,02
High job security x bad prospects	7,45	0,01	7,47	0,01	7,42	0,01
Low job security x good prospects	7,06	0,02	7,05	0,02	7,07	0,03
Low job security x bad prospects	6,74	0,01	6,75	0,01	6,73	0,01
Number of observations	126.825		67.856		58.969	
Health satisfaction	6,94	0,01	6,97	0,01	6,92	0,01
Unemployed x good prospects	7,29	0,12	7,16	0,16	7,47	0,17
Unemployed x bad prospects	6,20	0,02	6,19	0,04	6,22	0,03
High job security x good prospects	7,50	0,02	7,60	0,02	7,40	0,02
High job security x bad prospects	7,14	0,01	7,15	0,01	7,12	0,01
Low job security x good prospects	7,17	0,02	7,20	0,03	7,14	0,03
Low job security x bad prospects	6,76	0,01	6,78	0,01	6,73	0,01
Number of observations	126.778		67.830		58.948	
Self-assessed health	3,55	0,00	3,57	0,00	3,53	0,00
Unemployed x good prospects	3,69	0,05	3,65	0,07	3,75	0,08
Unemployed x bad prospects	3,22	0,01	3,23	0,02	3,22	0,01
High job security x good prospects	3,80	0,01	3,87	0,01	3,74	0,01
High job security x bad prospects	3,61	0,00	3,63	0,01	3,58	0,01
Low job security x good prospects	3,70	0,01	3,73	0,01	3,66	0,01
Low job security x bad prospects	3,49	0,00	3,50	0,00	3,47	0,01
Number of observations	126.813		67.847		58.966	
Physical health scale	50,93	0,05	51,31	0,07	50,51	0,08
Unemployed x good prospects	52,55	0,82	52,19	1,17	53,07	1,07
Unemployed x bad prospects	47,46	0,20	47,40	0,29	47,53	0,28
High job security x good prospects	53,25	0,14	54,03	0,19	52,43	0,22
High job security x bad prospects	51,32	0,09	51,73	0,13	50,89	0,14
Low job security x good prospects	52,86	0,20	53,31	0,26	52,31	0,31
Low job security x bad prospects	50,59	0,08	50,93	0,10	50,19	0,12
Number of observations	45.431		24.063		21.368	
Mental health scale	48,81	0,06	49,79	0,07	47,70	0,08
Unemployed x good prospects	47,53	0,89	47,01	1,24	48,30	1,23
Unemployed x bad prospects	46,36	0,21	47,32	0,29	45,37	0,29
High job security x good prospects	50,60	0,16	51,60	0,20	49,54	0,23
High job security x bad prospects	50,79	0,10	51,85	0,13	49,70	0,15
Low job security x good prospects	47,96	0,23	49,15	0,30	46,46	0,34
Low job security x bad prospects	47,74	0,08	48,75	0,11	46,52	0,13
Number of observations	45.431		24.063		21.368	

Table 3: Life satisfaction, health satisfaction, and self-assessed health: fixed-effects regression models

Dependent variable	M E N			W O M E N		
	Life satisfaction coef/se	Health satisfaction coef/se	Self-assessed health coef/se	Life satisfaction coef/se	Health satisfaction coef/se	Self-assessed health coef/se
Unemployed	-1,069*** (0,036)	-0,280*** (0,040)	-0,140*** (0,017)	-0,777*** (0,038)	-0,189*** (0,043)	-0,105*** (0,018)
Unemployed x good prospects	0,602*** (0,130)	0,305** (0,133)	0,105* (0,061)	0,673*** (0,122)	0,398*** (0,150)	0,189*** (0,066)
Low job security	-0,196*** (0,026)	-0,138*** (0,031)	-0,059*** (0,013)	-0,222*** (0,029)	-0,078** (0,036)	-0,021 (0,015)
Low job security x bad prospects	-0,109*** (0,024)	-0,010 (0,028)	-0,023** (0,011)	-0,041 (0,028)	-0,058* (0,032)	-0,044*** (0,014)
High job security x bad prospects	-0,030 (0,019)	-0,002 (0,024)	-0,009 (0,011)	-0,040** (0,020)	0,001 (0,026)	-0,011 (0,011)
BIP	0,001 (0,002)	0,001 (0,002)	0,001* (0,001)	-0,000 (0,002)	-0,001 (0,002)	0,001 (0,001)
U-rate	-0,010** (0,004)	-0,007* (0,005)	-0,003 (0,002)	-0,014*** (0,004)	0,003 (0,005)	-0,001 (0,002)
Number of observations	67.856	67.830	67.847	58.969	58.948	58.966
F	82,152	68,290	71,724	54,391	41,250	43,866
R ²	0,119	0,049	0,073	0,094	0,030	0,029

Note: ***p<0.01, **p<0.05, *p<0.1

Standard errors are clustered around counties and years.

The control variables are household income per capita, being married, number of children, a dummy variable indicating whether someone is a care giver for other persons in the household, a dummy variable indicating whether respondent lives in own house, disability status, age categories, and wave dummies.

One notable insight from the fixed effects models (summarized in table 3) is that unemployment has a highly significant negative impact on life satisfaction, health satisfaction, and self-assessed health for both men and women. We also find significant positive coefficients for the interaction term between being unemployed and having good prospects; that is, the negative effect of unemployment is significantly attenuated if the unemployed have good prospects for future employability. Low job security, in terms of employees being very or somewhat concerned about their job security, also has a significant negative effect on these outcome variables. The negative coefficient for the dummy variable low job security, however, is only insignificant with respect to health satisfaction in the female sample. This negative effect of job insecurity is aggravated by the interaction term between low job security and bad employability prospects in case of job loss. This aggravating effect is significant for the outcome variables life satisfaction and health satisfaction in the male sample and with respect to health satisfaction and self-assessed health in the female sample. Interestingly, the regional unemployment rate is significant and negative for life satisfaction in both the male and female samples but for health satisfaction only in the male sample. Regional GDP per capita as a welfare indicator is insignificant for all outcomes except for self-assessed health in the male sample.

The results of our multivariate analysis with respect to the outcome variables physical and mental health scale scores are listed in table 4. The negative impact of unemployment on both the physical and mental health scale scores is highly significant for the male sample but is only significant with respect to mental health in the female sample. Nevertheless, in terms of males' physical health and females' mental health, we find a significant positive effect of being unemployed and having good employability prospects, which attenuates the negative effect of being unemployed. Low job security is only significant and negative for male and female mental health, and there is an

Table 4: Physical health and mental health scale scores: fixed-effects regression models

Dependent variable	M E N		W O M E N	
	Physical health coef/se	Mental health coef/se	Physical health coef/se	Mental health coef/se
Unemployed	-1,018*** (0,267)	-1,357*** (0,332)	0,093 (0,285)	-2,109*** (0,369)
Unemployed x good prospects	1,915*** (0,720)	-0,476 (1,016)	-0,114 (0,895)	2,607** (1,049)
Low job security	-0,066 (0,198)	-1,031*** (0,271)	-0,255 (0,262)	-0,928*** (0,336)
Low job security x bad prospects	-0,107 (0,182)	0,090 (0,228)	-0,101 (0,238)	-0,591* (0,310)
High job security x bad prospects	0,116 (0,171)	0,021 (0,203)	-0,144 (0,195)	-0,290 (0,227)
BIP	0,007 (0,011)	0,003 (0,016)	-0,003 (0,016)	0,017 (0,020)
U-rate	0,035 (0,031)	0,001 (0,042)	0,005 (0,033)	-0,008 (0,046)
Number of observations	24.063	24.063	21.368	21.368
F	27,885	4,583	16,922	6,865
R ²	0,105	0,029	0,037	0,027

Note: ***p<0.01, **p<0.05, *p<0.1

Standard errors are clustered around counties and years.

The control variables are household income per capita, being married, number of children, a dummy variable indicating whether someone is a care giver for other persons in the household, a dummy variable indicating whether respondent lives in own house, disability status, age categories, and wave dummies.

additional significant negative effect for the interaction term between low job security and bad employability prospects in the female sample.

Table 5 reports the results for whether the effects of unemployment, job insecurity, and employability on life satisfaction and health vary across generations; more specifically, for the regression models run for four age categories (20-29, 30-39, 40-49, and 50-65) and for males and females separately. One important finding from this analysis is that unemployment has a significantly negative effect on life satisfaction throughout all age groups. For both men and women, the attenuating effect of being unemployed and having good prospects for finding a new job is positive, although only significant for respondents aged 20 to 49. The significance of this attenuating effect

disappears, however, for respondents aged between 50 and 65. Likewise, with respect to life satisfaction, low job security has a significantly negative effect throughout all age categories and in both the male and female samples. The aggravating effect of the interaction between job insecurity and bad employability prospects in case of job loss, however, is only significant and negative for certain age groups; namely, male employees aged 30 to 65 and female employees aged 40 to 49.

We also find notable age differences with respect to health. For instance, unemployment has a significantly negative effect on the outcome variable health satisfaction in age groups 20-29, 40-49, and 50-65 in the male sample and in age groups 40-49 and 50-65 in the female sample. This health effect, however, is insignificant for 20- to 29-year-old unemployed men and also for unemployed women aged 20-29 and 30-39. Interestingly, the significantly positive interaction effect of being unemployed and having good employability prospects dilutes the negative effect of unemployment only for men aged 40-49. Moreover, low job security is only significant and negative for young (20-29) and middle-aged (40-49) male employees and for females aged 30-39. Being exposed to low job security and having bad prospects, however, has a significantly negative effect for women aged 40-49. The interaction between high job security and bad employability prospects, on the other hand, is significantly negative only for the age group 40-49 in both men and women, and significantly positive only for 30- to 39-year-old men.

In terms of self-assessed health, unemployment has a significantly negative impact only from age 40 and above in men and from 30 and above in women. The results also identify a significantly positive and attenuating effect for the unemployed of having good prospects, which manifests in the age categories 20-29 and 40-49 in men and 30-39 in women. These same age groups in the male sample (20-29 and 40-49) experience a significantly negative impact of job insecurity on self-assessed health,

Table 5: Life satisfaction, health satisfaction, and self-assessed health: fixed-effects regression models by age category

Life satisfaction

Age category	M E N				W O M E N			
	20-29 coef/se	30-39 coef/se	40-49 coef/se	50-65 coef/se	20-29 coef/se	30-39 coef/se	40-49 coef/se	50-65 coef/se
Unemployed	1,133*** (0,082)	-1,158*** (0,077)	-0,990*** (0,078)	-0,967*** (0,069)	-0,795*** (0,089)	-0,769*** (0,078)	-1,071*** (0,076)	-0,486*** (0,076)
Unemployed x good prospects	1,026*** (0,198)	0,648*** (0,229)	0,577* (0,323)	-0,129 (0,335)	0,605*** (0,212)	0,512** (0,224)	1,149*** (0,278)	0,476 (0,469)
Low job security	0,185*** (0,052)	-0,133*** (0,040)	-0,215*** (0,051)	-0,234*** (0,088)	-0,291*** (0,057)	-0,190*** (0,050)	-0,160*** (0,059)	-0,222** (0,108)
Low job security x bad prospects	-0,071 (0,053)	-0,112*** (0,037)	-0,099** (0,046)	-0,142* (0,084)	0,045 (0,054)	-0,021 (0,045)	-0,123** (0,054)	-0,032 (0,102)
High job security x bad prospects	0,037 (0,049)	-0,003 (0,033)	-0,050 (0,039)	-0,118*** (0,041)	-0,027 (0,048)	-0,010 (0,039)	-0,065* (0,037)	-0,077 (0,049)
Number of observations	9.417	18.747	20.356	19.336	9.281	15.220	18.907	15.561

Health satisfaction

Age category	M E N				W O M E N			
	20-29 coef/se	30-39 coef/se	40-49 coef/se	50-65 coef/se	20-29 coef/se	30-39 coef/se	40-49 coef/se	50-65 coef/se
Unemployed	-0,157* (0,084)	-0,030 (0,082)	-0,352*** (0,086)	-0,324*** (0,085)	0,041 (0,106)	-0,101 (0,086)	-0,232*** (0,085)	-0,186** (0,091)
Unemployed x good prospects	0,250 (0,197)	0,140 (0,275)	0,465* (0,265)	-0,038 (0,312)	0,244 (0,256)	0,435 (0,278)	0,485 (0,339)	0,039 (0,527)
Low job security	0,178*** (0,062)	-0,054 (0,047)	-0,199*** (0,062)	-0,167 (0,111)	-0,078 (0,072)	-0,111* (0,062)	-0,057 (0,067)	-0,005 (0,123)
Low job security x bad prospects	0,079 (0,057)	-0,030 (0,044)	-0,006 (0,053)	0,017 (0,104)	0,030 (0,064)	0,026 (0,055)	-0,143** (0,062)	-0,186 (0,113)
High job security x bad prospects	0,039 (0,058)	0,074* (0,039)	-0,085* (0,047)	-0,054 (0,060)	0,067 (0,066)	0,011 (0,049)	-0,081* (0,045)	-0,047 (0,065)
Number of observations	9.417	18.734	20.345	19.334	9.273	15.218	18.901	15.556

Table 5 (continued)

Self-assessed health

Age category	M E N				W O M E N			
	20-29 coef/se	30-39 coef/se	40-49 coef/se	50-65 coef/se	20-29 coef/se	30-39 coef/se	40-49 coef/se	50-65 coef/se
Unemployed	-0,044 (0,036)	-0,017 (0,036)	-0,197*** (0,036)	-0,182*** (0,035)	-0,015 (0,042)	-0,107*** (0,037)	-0,172*** (0,034)	-0,089** (0,037)
Unemployed x good prospects	0,199** (0,098)	-0,102 (0,116)	0,282** (0,130)	-0,131 (0,144)	-0,025 (0,098)	0,424*** (0,121)	0,254 (0,207)	-0,116 (0,150)
Low job security	-0,065** (0,027)	-0,030 (0,020)	-0,077*** (0,025)	-0,045 (0,048)	-0,033 (0,030)	-0,041 (0,028)	-0,035 (0,030)	0,073 (0,052)
Low job security x bad prospects	0,004 (0,025)	-0,021 (0,018)	-0,021 (0,023)	-0,043 (0,044)	-0,010 (0,027)	-0,036 (0,024)	-0,075*** (0,027)	-0,144*** (0,049)
High job security x bad prospects	0,003 (0,026)	0,014 (0,019)	-0,024 (0,020)	-0,033 (0,025)	0,002 (0,028)	-0,023 (0,021)	-0,063*** (0,020)	-0,028 (0,027)
Number of observations	9.417	18.741	20.361	19.328	9.275	15.220	18.909	15.562

Note: ***p<0.01, **p<0.05, *p<0.1

Standard errors are clustered around counties and years

The control variables are household income per capita, being married, number of children, a dummy variable indicating whether someone is a care giver for other persons in the household, a dummy variable indicating whether respondent lives in own house, disability status, and wave dummies.

but this effect is insignificant for women. The interaction between job insecurity and bad prospects, on the other hand, is significantly negative for employed women aged 40 and above. Women's self-assessed health at age 40-49 is also significantly negatively influenced by having bad employability prospects even when the current job is secure (interaction term). Overall, it is important to note that there is no significant attenuating effect for the unemployed having good employability prospects at age 50+. This finding holds for all three outcome variables – life satisfaction, health satisfaction, and self-assessed health – and for both the male and female samples.

We next analyse the physical and mental health scale scores (see table 6). In contrast to the above analysed outcome variables, we do not include an interaction term of being unemployed and having bad employability prospects due to small cells with less than 20 observations in this category and in some of the age groups.

In terms of physical health, we find a significantly negative relation between unemployment and the physical health scale score for men aged 50+ but identify no significant effect on this score of either job security or employability. In terms of mental health, unemployment has a significantly negative impact on the mental health scale score for men aged 40-49 and 50-65 and for women age 30 and over. With respect to low job insecurity, we find significantly negative effects on mental health in men aged 20-29 and 30-39 and women aged 20-29. Bad employability prospects interacted with high job security also seem to have a significantly detrimental effect on mental health for women aged between 40 and 49.

Table 6: Physical and mental health scale scores: fixed-effects regression models by age category

Physical health

Age category	M E N				W O M E N			
	20-29 coef/se	30-39 coef/se	40-49 coef/se	50-65 coef/se	20-29 coef/se	30-39 coef/se	40-49 coef/se	50-65 coef/se
Unemployed	-0,495 (0,578)	0,305 (0,497)	-0,017 (0,578)	-2,548*** (0,561)	-0,120 (0,624)	0,842 (0,578)	1,077* (0,574)	-0,371 (0,638)
Low job security	-0,137 (0,506)	0,084 (0,336)	-0,570 (0,416)	0,420 (0,750)	-0,411 (0,584)	0,071 (0,497)	0,052 (0,520)	-0,806 (0,873)
Low job security x bad prospects	-0,459 (0,452)	0,000 (0,305)	0,171 (0,355)	-0,758 (0,672)	-0,057 (0,507)	-0,306 (0,467)	-0,574 (0,495)	0,505 (0,824)
High job security x bad prospects	0,156 (0,433)	0,171 (0,326)	-0,405 (0,344)	0,203 (0,362)	-0,110 (0,442)	-0,454 (0,396)	-0,300 (0,330)	0,079 (0,485)
Number of observations	3.161	6.169	7.482	7.251	3.170	5.221	7.006	5.971

Mental health

Age category	M E N				W O M E N			
	20-29 coef/se	30-39 coef/se	40-49 coef/se	50-65 coef/se	20-29 coef/se	30-39 coef/se	40-49 coef/se	50-65 coef/se
Unemployed	0,405 (0,759)	-0,930 (0,668)	-2,201*** (0,720)	-1,922*** (0,658)	0,047 (1,033)	-1,732** (0,728)	-3,365*** (0,678)	-2,012*** (0,745)
Low job security	-1,253** (0,630)	-1,085** (0,488)	-0,560 (0,557)	-0,949 (0,821)	-1,590** (0,768)	-1,018 (0,634)	0,007 (0,622)	-0,494 (1,077)
Low job security x bad prospects	0,651 (0,590)	0,463 (0,412)	-0,575 (0,503)	0,006 (0,783)	0,510 (0,706)	-0,528 (0,589)	-1,687*** (0,598)	-0,359 (1,034)
High job security x bad prospects	-0,717 (0,586)	0,313 (0,426)	0,089 (0,433)	0,066 (0,409)	0,277 (0,627)	0,074 (0,495)	-0,704* (0,368)	0,081 (0,561)
Number of observations	3.161	6.169	7.482	7.251	3.170	5.221	7.006	5.971

Note: ***p<0.01, **p<0.05, *p<0.1

Standard errors are clustered around counties and years

The control variables are household income per capita, being married, number of children, a dummy variable indicating whether someone is a care giver for other persons in the household, a dummy variable indicating whether respondent lives in own house, disability status, and wave dummies.

5 Conclusions

How then does job insecurity affect well-being? This question has received much public attention, especially in light of the turbulent economic crisis of the last decade and the continuing liberalization of markets. Yet the large body of literature on job insecurity's effects on health includes very few longitudinal studies. Moreover, recent evidence seems to indicate that the negative effects of job insecurity are particularly susceptible to a worker's employability, motivating this present analysis of the nexus between job insecurity, employability, and well-being. To our knowledge, ours is the first study to address this issue with a focus on health across generations, a particularly important aspect given that insecurity, employability, and health all have a strong age dimension.

Specifically, using data from 12 waves of the German Socio-Economic Panel (GSOEP), we analyse the relation between job insecurity, employability and well-being (life satisfaction and health) to reveal three important findings: First, as in past studies, we observe a strong effect of unemployment on both life satisfaction and health. Not only does unemployment affect life satisfaction in all age groups, there is also a clear age effect with regards to health; that is, unemployment among individuals older than 40 has a particularly strong effect on nearly all health measures, and in particular, those for mental health. We therefore conjecture that the health effects of unemployment observed in much of the extant research can be attributed to older individuals.

In addition, we document a predominantly negative association between job insecurity and (health-related) well-being, an effect that is enhanced by the presence of poor employability prospects. And as shown above, this effect is quite substantial. This finding is similar to that of Green (2011).

Finally, by using local unemployment rates in over 400 counties to assess whether unemployment levels exert some form of externality (social norm effect) on workers' subjective well-being and health, we show that once job insecurity is

controlled for, unemployment rates do indeed have a negative effect on life satisfaction. This effect, however, is small and does not translate into negative effects on health.

Overall, therefore, our study supports the (predominantly cross-sectional) literature showing that job insecurity affects not only life satisfaction but also health. In particular, our finding that employability has an attenuating effect on the negative consequences of job insecurity implies that promoting employability could have beneficial health implications. Hence, in the face of an ageing population and corresponding increases in retirement age, public and corporate policies aimed at enhancing workers' employability throughout the life course seem especially important. One example of such a focus is the EU's European Employment Strategy (first adopted by the Member States in 1997 and promoted by the Lisbon Strategy), which supports employability by fostering of skill development (implementation of life-long learning) and the reduction of age discrimination (i.e., increasing the employment prospects of older workers).

The limitations of our study also highlight the prospects for future research. First, whereas our use of longitudinal data helps fill a methodological void, determining clear causal links is challenging and an aspect that extant studies on the association between insecurity and health fail to address. In our opinion, a quasi-experimental design (such as that used in Schmitz, 2011) is probably the only feasible approach to identifying exact causality mechanisms. A further interesting avenue for future research would be to assess the long-term health effects of job insecurity and employability. As shown in other research areas (e.g., Kim and Moen, 2002, on the health effects of retirement), short-term health effects need not always translate into long-term impacts. Finally, evidence based on more objective and differentiated health

measures (e.g., diagnosed hypertension or depression) could provide a better understanding of how insecurity and employability affect health.

References

- Andersen, Hanfried H., Mühlbacher, Axel, Nübling, Matthias, Schupp, Jürgen, and Wagner, Gert G.** (2007), Computation of standard values for physical and mental health scale scores, *Schmollers Jahrbuch*, 127 (1), pp. 171-182.
- Astell-Burt, Thomas and Feng, Xiaoqi (2013)**, Health and the 2008 economic recession: Evidence from the United Kingdom. *PLoS ONE*, 8(2), e56674 doi: 10.1371/journal.pone.0056674.
- Bergmann, Annette and Mertens, Antje** (2011), Job stability trends, lay-offs, and transitions to unemployment in West Germany, *Labour*, 25 (4), pp. 421-446.
- Berntson, Erik and Marklund, Staffan** (2007), The relationship between perceived employability and subsequent health, *Work & Stress*, 21 (3), pp. 279-292.
- Blanchflower, David G. and Oswald, Andrew J.** (2004), Well-being over time in Britain and the USA, *Journal of Public Economics*, 88 (2004), pp. 1359-1386.
- Brief, Arthur P., Burke, Michael J., George, Jennifer M., Robinson, Brian S., and Webster, Jane** (1988), Should negative affectivity remain an unmeasured variable in the study of job stress?, *Journal of Applied Psychology*, 73 (2), pp. 193-198.
- Catalano, Ralph (1991)**, The health effects of economic insecurity. *American Journal of Public Health*, 81(9), pp. 1148-1152.
- Cheng, Grand H.-L. and Chan, Darius K.-S.** (2008), Who suffers more from job insecurity? A meta-analytic review, *Applied Psychology*, 57 (2), pp. 272-303.
- Clark, Andrew, Knabe, Andreas, and Rätzl, Steffen** (2010), Boon or bane? Others' unemployment, well-being and job insecurity, *Labour Economics*, 17, pp. 52-67.
- Clark, Andrew E., Georgellis, Yannis, and Sanfey, Peter** (2001), The psychological impact of past unemployment, *Economica*, 68, pp. 221-241.
- Clark, Andrew E. and Oswald, Andrew J.** (1994), Unhappiness and unemployment, *Economic Journal*, 104 (424), pp. 648-659.
- De Cuyper, Nele, Bernhard-Oettel, Claudia, Berntson, Erik, De Witte, Hans, and Alarco, Barbara** (2008), Employability and employees' well-being: mediation by job insecurity, *Applied Psychology: An International Review*, 57 (3), pp. 488-509.

- De Witte, Hans, De Cuyper, Nele, Elst, Tinne V., Vanbelle, Els, and Niesen, Wendy** (2012), Job insecurity: review of the literature and a summary of recent studies from Belgium, *Romanian Journal of Applied Psychology*, 14 (1), pp. 11-17.
- Di Tella, Rafael, MacCulloch, Robert J., and Oswald, Andrew J.** (2003), The macroeconomics of happiness, *Review of Economics and Statistics*, 85 (4), pp. 809-827.
- European Commission** (2007), Towards common principles of flexicurity: More and better jobs through flexibility and security, COM(2007) 359 final, Brussels.
- Ferrer-i-Carbonell, Ada and Frijters, Paul** (2004), How important is methodology for the estimates of the determinants of happiness?, *Economic Journal*, 114, pp. 641-659.
- Flint, Ellen, Bartley, Mel, Shelton, Nicola, and Sacker, Amanda** (2013), Do labour market status transitions predict changes in psychological well-being?, *Journal of Epidemiology and Community Health*, doi:10.1136/jech-2013-202425 pp.
- Green, Francis** (2011), Unpacking the misery multiplier: How employability modifies the impacts of unemployment and job insecurity on life satisfaction and mental health, *Journal of Health Economics*, 30, pp. 265-276.
- Greenhalgh, Leonard and Rosenblatt, Zehava** (1984), Job insecurity: toward conceptual clarity, *Academy of Management Review*, 9, pp. 438-448.
- Kassenboehmer, Sonja and Haisken DeNew, John P.** (2009), You're fired! The causal negative effect of entry unemployment on life satisfaction, *Economic Journal*, 119 (536), pp. 448-462.
- Kim, Jungmeen E. and Moen, Phyllis** (2002), Retirement transitions, gender, and psychological well-being: a life-course, ecological model. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 57 (3), pp. 212-222.
- Knabe, Andreas and Rätzl, Steffen** (2011), Scaring or scarring? The psychological impact of past unemployment and future unemployment risk, *Economica*, 78, pp. 283-293.
- Kniess, Gundi and Spiess, Katharina** (2007), Regional data in the German Socio-Economic Panel Study (SOEP), DIW Data Documentation, 17.

- Luechinger, Simon, Stutzer, Alois, and Meier, Stephan** (2010), Why does unemployment hurt the employed? Evidence from the life satisfaction gap between the public and the private sector, *Journal of Human Resources*, 45 (4), pp.998-1045.
- Schmitz, Hendrik** (2011), Why are the unemployed in worse health? The causal effect of unemployment, *Labour Economics*, 18 (1), pp. 71-78.
- Silla, Inmaculada, De Cuyper, Nele, Gracia, Francisco J., Peiro, José M., and De Witte, Hans** (2009), Job insecurity and well-being: moderation by employability, *Journal of Happiness Studies*, 10 (6), pp. 739-751.
- Sok, Jenny, Blomme, Rob, and Tromp, Debbie** (2013), The use of the psychological contract to explain self-perceived employability, *International Journal of Hospitality Management*, 34, pp. 274-284.
- Sverke, Magnus, Hellgren, Johnny, and Näswall, Katharina** (2002), No security: a meta-analysis and review of job insecurity and its consequences, *Journal of Occupational Health Psychology*, 7 (3), pp. 242-264.
- Virtanen, Pekka, Janlert, Urban, and Hammarström, Anne** (2011), Exposure to temporary employment and job insecurity: a longitudinal study of the health effects, *Occupational and Environmental Medicine*, 68, pp. 570-574.
- Virtanen, Marianna, Kivimäki, Mika, Joensuu, Matti, Virtanen, Pekka, Elovainio, Marko, and Vahtera, Jussi** (2005), Temporary employment and health: a review, *International Journal of Epidemiology*, 34, pp. 610-622.
- Waenerlund, Anna-Karin, Virtanen, Pekka, and Hammarström, Anne** (2011), Is temporary employment related to health status? Analysis of the northern Swedish cohort, *Scandinavian Journal of Public Health*, 39, pp. 533-539.
- Wagner, Gert G., Frick, Joachim R., and Schupp, Jürgen** (2007), The German Socio-Economic Panel Study (SOEP): scope, evolution and enhancements, *Schmollers Jahrbuch*, 127 (1), pp. 139-169.
- Watson, David, Clark, Lee A., and Carey, Greg** (1988), Positive and negative affectivity and their relation to anxiety and depressive disorders, *Journal of Abnormal Psychology*, 97 (3), pp. 346-353.

Winkelmann, Liliana and Winkelmann, Rainer (1998), Why are the unemployed so unhappy? Evidence from panel data, *Economica*, 65, pp. 1-15.

Ye, Jun, Cardon, Melissa S., and Rivera, Efrain (2012), A mutuality perspective of psychological contracts regarding career development and job security, *Journal of Business Research*, 65, pp. 294-301.

Appendix

Table A.1: Overview of dependent and selected independent variables		
Variable	Question format	Coding scheme
Life satisfaction	How satisfied are you with your life, all things considered?	11-point scale [completely dissatisfied (0) to completely satisfied (10)]
Health satisfaction	How satisfied are you with... your health?	11-point scale [totally unhappy (0) to totally happy (10)]
Self-assessed health¹	How would you describe your current health?	5-point scale [bad (1) to very good (5)]
Physical health score scale	12-item summary scale	[0 (bad) to 100 (good)]
Mental health score scale	12-item summary scale	[0 (bad) to 100 (good)]
Job security	What is your attitude towards the following areas – are you concerned about them? ... <i>If you are employed:</i> Your job security	3-point scale [very concerned (1), somewhat concerned (2), not concerned at all (3)]
Employment prospects (unemployed)	If you were currently looking for a new job: Would it be easy, difficult or almost impossible to find an appropriate position?	3-point scale [easy (1), difficult (2), almost impossible (3)]
Employment prospects (employed)	If you lost your job today, would it be easy, difficult or almost impossible for you to find a new position which is at least as good as your current one?	3-point scale easy (1), difficult (2), almost impossible (3)]

¹ Variables are recoded

FZID Discussion Papers

Competence Centers:

IK:	Innovation and Knowledge
ICT:	Information Systems and Communication Systems
CRFM:	Corporate Finance and Risk Management
HCM:	Health Care Management
CM:	Communication Management
MM:	Marketing Management
ECO:	Economics

Download FZID Discussion Papers from our homepage: <https://fzid.uni-hohenheim.de/71978.html>

Nr.	Autor	Titel	CC
01-2009	Julian P. Christ	NEW ECONOMIC GEOGRAPHY RELOADED: Localized Knowledge Spillovers and the Geography of Innovation	IK
02-2009	André P. Slowak	MARKET FIELD STRUCTURE & DYNAMICS IN INDUSTRIAL AUTOMATION	IK
03-2009	Pier Paolo Saviotti and Andreas Pyka	GENERALIZED BARRIERS TO ENTRY AND ECONOMIC DEVELOPMENT	IK
04-2009	Uwe Focht, Andreas Richter, and Jörg Schiller	INTERMEDIATION AND MATCHING IN INSURANCE MARKETS	HCM
05-2009	Julian P. Christ and André P. Slowak	WHY BLU-RAY VS. HD-DVD IS NOT VHS VS. BETAMAX: THE CO-EVOLUTION OF STANDARD-SETTING CONSORTIA	IK
06-2009	Gabriel Felbermayr, Mario Larch, and Wolfgang Lechthaler	UNEMPLOYMENT IN AN INTERDEPENDENT WORLD	ECO
07-2009	Steffen Otterbach	MISMATCHES BETWEEN ACTUAL AND PREFERRED WORK TIME: Empirical Evidence of Hours Constraints in 21 Countries	HCM
08-2009	Sven Wydra	PRODUCTION AND EMPLOYMENT IMPACTS OF NEW TECHNOLOGIES – ANALYSIS FOR BIOTECHNOLOGY	IK
09-2009	Ralf Richter and Jochen Streb	CATCHING-UP AND FALLING BEHIND KNOWLEDGE SPILLOVER FROM AMERICAN TO GERMAN MACHINE TOOL MAKERS	IK

Nr.	Autor	Titel	CC
10-2010	Rahel Aichele and Gabriel Felbermayr	KYOTO AND THE CARBON CONTENT OF TRADE	ECO
11-2010	David E. Bloom and Alfonso Sousa-Poza	ECONOMIC CONSEQUENCES OF LOW FERTILITY IN EUROPE	HCM
12-2010	Michael Ahlheim and Oliver Frör	DRINKING AND PROTECTING – A MARKET APPROACH TO THE PRESERVATION OF CORK OAK LANDSCAPES	ECO
13-2010	Michael Ahlheim, Oliver Frör, Antonia Heinke, Nguyen Minh Duc, and Pham Van Dinh	LABOUR AS A UTILITY MEASURE IN CONTINGENT VALUATION STUDIES – HOW GOOD IS IT REALLY?	ECO
14-2010	Julian P. Christ	THE GEOGRAPHY AND CO-LOCATION OF EUROPEAN TECHNOLOGY-SPECIFIC CO-INVENTORSHIP NETWORKS	IK
15-2010	Harald Degner	WINDOWS OF TECHNOLOGICAL OPPORTUNITY DO TECHNOLOGICAL BOOMS INFLUENCE THE RELATIONSHIP BETWEEN FIRM SIZE AND INNOVATIVENESS?	IK
16-2010	Tobias A. Jopp	THE WELFARE STATE EVOLVES: GERMAN KNAPPSCHAFTEN, 1854-1923	HCM
17-2010	Stefan Kirn (Ed.)	PROCESS OF CHANGE IN ORGANISATIONS THROUGH eHEALTH	ICT
18-2010	Jörg Schiller	ÖKONOMISCHE ASPEKTE DER ENTLOHNUNG UND REGULIERUNG UNABHÄNGIGER VERSICHERUNGSVERMITTLER	HCM
19-2010	Frauke Lammers and Jörg Schiller	CONTRACT DESIGN AND INSURANCE FRAUD: AN EXPERIMENTAL INVESTIGATION	HCM
20-2010	Martyna Marczak and Thomas Beissinger	REAL WAGES AND THE BUSINESS CYCLE IN GERMANY	ECO
21-2010	Harald Degner and Jochen Streb	FOREIGN PATENTING IN GERMANY, 1877-1932	IK
22-2010	Heiko Stüber and Thomas Beissinger	DOES DOWNWARD NOMINAL WAGE RIGIDITY DAMPEN WAGE INCREASES?	ECO
23-2010	Mark Spoerer and Jochen Streb	GUNS AND BUTTER – BUT NO MARGARINE: THE IMPACT OF NAZI ECONOMIC POLICIES ON GERMAN FOOD CONSUMPTION, 1933-38	ECO

Nr.	Autor	Titel	CC
24-2011	Dhammika Dharmapala and Nadine Riedel	EARNINGS SHOCKS AND TAX-MOTIVATED INCOME-SHIFTING: EVIDENCE FROM EUROPEAN MULTINATIONALS	ECO
25-2011	Michael Schuele and Stefan Kirn	QUALITATIVES, RÄUMLICHES SCHLIEßEN ZUR KOLLISIONSERKENNUNG UND KOLLISIONSVERMEIDUNG AUTONOMER BDI-AGENTEN	ICT
26-2011	Marcus Müller, Guillaume Stern, Ansgar Jacob and Stefan Kirn	VERHALTENSMODELLE FÜR SOFTWAREAGENTEN IM PUBLIC GOODS GAME	ICT
27-2011	Monnet Benoit Patrick Gbakoua and Alfonso Sousa-Poza	ENGEL CURVES, SPATIAL VARIATION IN PRICES AND DEMAND FOR COMMODITIES IN CÔTE D'IVOIRE	ECO
28-2011	Nadine Riedel and Hannah Schildberg-Hörisch	ASYMMETRIC OBLIGATIONS	ECO
29-2011	Nicole Waidlein	CAUSES OF PERSISTENT PRODUCTIVITY DIFFERENCES IN THE WEST GERMAN STATES IN THE PERIOD FROM 1950 TO 1990	IK
30-2011	Dominik Hartmann and Atilio Arata	MEASURING SOCIAL CAPITAL AND INNOVATION IN POOR AGRICULTURAL COMMUNITIES. THE CASE OF CHÁPARRA - PERU	IK
31-2011	Peter Spahn	DIE WÄHRUNGSKRISEUNION DIE EURO-VERSCHULDUNG DER NATIONALSTAATEN ALS SCHWACHSTELLE DER EWU	ECO
32-2011	Fabian Wahl	DIE ENTWICKLUNG DES LEBENSSTANDARDS IM DRITTEN REICH – EINE GLÜCKSÖKONOMISCHE PERSPEKTIVE	ECO
33-2011	Giorgio Triulzi, Ramon Scholz and Andreas Pyka	R&D AND KNOWLEDGE DYNAMICS IN UNIVERSITY-INDUSTRY RELATIONSHIPS IN BIOTECH AND PHARMACEUTICALS: AN AGENT-BASED MODEL	IK
34-2011	Claus D. Müller-Hengstenberg and Stefan Kirn	ANWENDUNG DES ÖFFENTLICHEN VERGABERECHTS AUF MODERNE IT SOFTWAREENTWICKLUNGSVERFAHREN	ICT
35-2011	Andreas Pyka	AVOIDING EVOLUTIONARY INEFFICIENCIES IN INNOVATION NETWORKS	IK
36-2011	David Bell, Steffen Otterbach and Alfonso Sousa-Poza	WORK HOURS CONSTRAINTS AND HEALTH	HCM
37-2011	Lukas Scheffknecht and Felix Geiger	A BEHAVIORAL MACROECONOMIC MODEL WITH ENDOGENOUS BOOM-BUST CYCLES AND LEVERAGE DYNAMICS	ECO
38-2011	Yin Krogmann and Ulrich Schwalbe	INTER-FIRM R&D NETWORKS IN THE GLOBAL PHARMACEUTICAL BIOTECHNOLOGY INDUSTRY DURING 1985–1998: A CONCEPTUAL AND EMPIRICAL ANALYSIS	IK

Nr.	Autor	Titel	CC
39-2011	Michael Ahlheim, Tobias Börger and Oliver Frör	RESPONDENT INCENTIVES IN CONTINGENT VALUATION: THE ROLE OF RECIPROCITY	ECO
40-2011	Tobias Börger	A DIRECT TEST OF SOCIALLY DESIRABLE RESPONDING IN CONTINGENT VALUATION INTERVIEWS	ECO
41-2011	Ralf Rukwid and Julian P. Christ	QUANTITATIVE CLUSTERIDENTIFIKATION AUF EBENE DER DEUTSCHEN STADT- UND LANDKREISE (1999-2008)	IK

Nr.	Autor	Titel	CC
42-2012	Benjamin Schön and Andreas Pyka	A TAXONOMY OF INNOVATION NETWORKS	IK
43-2012	Dirk Foremny and Nadine Riedel	BUSINESS TAXES AND THE ELECTORAL CYCLE	ECO
44-2012	Gisela Di Meglio, Andreas Pyka and Luis Rubalcaba	VARIETIES OF SERVICE ECONOMIES IN EUROPE	IK
45-2012	Ralf Rukwid and Julian P. Christ	INNOVATIONSPOTENTIALE IN BADEN-WÜRTTEMBERG: PRODUKTIONSCLUSTER IM BEREICH „METALL, ELEKTRO, IKT“ UND REGIONALE VERFÜGBARKEIT AKADEMISCHER FACHKRÄFTE IN DEN MINT-FÄCHERN	IK
46-2012	Julian P. Christ and Ralf Rukwid	INNOVATIONSPOTENTIALE IN BADEN-WÜRTTEMBERG: BRANCHENSPEZIFISCHE FORSCHUNGS- UND ENTWICKLUNGSAKTIVITÄT, REGIONALES PATENTAUFKOMMEN UND BESCHÄFTIGUNGSSTRUKTUR	IK
47-2012	Oliver Sauter	ASSESSING UNCERTAINTY IN EUROPE AND THE US - IS THERE A COMMON FACTOR?	ECO
48-2012	Dominik Hartmann	SEN MEETS SCHUMPETER. INTRODUCING STRUCTURAL AND DYNAMIC ELEMENTS INTO THE HUMAN CAPABILITY APPROACH	IK
49-2012	Harold Paredes- Frigolett and Andreas Pyka	DISTAL EMBEDDING AS A TECHNOLOGY INNOVATION NETWORK FORMATION STRATEGY	IK
50-2012	Martyna Marczak and Víctor Gómez	CYCLICALITY OF REAL WAGES IN THE USA AND GERMANY: NEW INSIGHTS FROM WAVELET ANALYSIS	ECO
51-2012	André P. Slowak	DIE DURCHSETZUNG VON SCHNITTSTELLEN IN DER STANDARDSETZUNG: FALLBEISPIEL LADESYSYSTEM ELEKTROMOBILITÄT	IK
52-2012	Fabian Wahl	WHY IT MATTERS WHAT PEOPLE THINK - BELIEFS, LEGAL ORIGINS AND THE DEEP ROOTS OF TRUST	ECO
53-2012	Dominik Hartmann und Micha Kaiser	STATISTISCHER ÜBERBLICK DER TÜRKISCHEN MIGRATION IN BADEN-WÜRTTEMBERG UND DEUTSCHLAND	IK
54-2012	Dominik Hartmann, Andreas Pyka, Seda Aydin, Lena Klauß, Fabian Stahl, Ali Santircioglu, Silvia Oberegelsbacher, Sheida Rashidi, Gaye Onan und Suna Erginkoç	IDENTIFIZIERUNG UND ANALYSE DEUTSCH-TÜRKISCHER INNOVATIONSNETZWERKE. ERSTE ERGEBNISSE DES TGIN- PROJEKTES	IK
55-2012	Michael Ahlheim, Tobias Börger and Oliver Frör	THE ECOLOGICAL PRICE OF GETTING RICH IN A GREEN DESERT: A CONTINGENT VALUATION STUDY IN RURAL SOUTHWEST CHINA	ECO

Nr.	Autor	Titel	CC
56-2012	Matthias Strifler Thomas Beissinger	FAIRNESS CONSIDERATIONS IN LABOR UNION WAGE SETTING – A THEORETICAL ANALYSIS	ECO
57-2012	Peter Spahn	INTEGRATION DURCH WÄHRUNGSUNION? DER FALL DER EURO-ZONE	ECO
58-2012	Sibylle H. Lehmann	TAKING FIRMS TO THE STOCK MARKET: IPOS AND THE IMPORTANCE OF LARGE BANKS IN IMPERIAL GERMANY 1896-1913	ECO
59-2012	Sibylle H. Lehmann, Philipp Hauber, Alexander Opitz	POLITICAL RIGHTS, TAXATION, AND FIRM VALUATION – EVIDENCE FROM SAXONY AROUND 1900	ECO
60-2012	Martyna Marczak and V́ctor Ǵmez	SPECTRAN, A SET OF MATLAB PROGRAMS FOR SPECTRAL ANALYSIS	ECO
61-2012	Theresa Lohse and Nadine Riedel	THE IMPACT OF TRANSFER PRICING REGULATIONS ON PROFIT SHIFTING WITHIN EUROPEAN MULTINATIONALS	ECO

Nr.	Autor	Titel	CC
62-2013	Heiko Stüber	REAL WAGE CYCLICALITY OF NEWLY HIRED WORKERS	ECO
63-2013	David E. Bloom and Alfonso Sousa-Poza	AGEING AND PRODUCTIVITY	HCM
64-2013	Martyna Marczak and Víctor Gómez	MONTHLY US BUSINESS CYCLE INDICATORS: A NEW MULTIVARIATE APPROACH BASED ON A BAND-PASS FILTER	ECO
65-2013	Dominik Hartmann and Andreas Pyka	INNOVATION, ECONOMIC DIVERSIFICATION AND HUMAN DEVELOPMENT	IK
66-2013	Christof Ernst, Katharina Richter and Nadine Riedel	CORPORATE TAXATION AND THE QUALITY OF RESEARCH AND DEVELOPMENT	ECO
67-2013	Michael Ahlheim, Oliver Frör, Jiang Tong, Luo Jing and Sonna Pelz	NONUSE VALUES OF CLIMATE POLICY - AN EMPIRICAL STUDY IN XINJIANG AND BEIJING	ECO
68-2013	Michael Ahlheim and Friedrich Schneider	CONSIDERING HOUSEHOLD SIZE IN CONTINGENT VALUATION STUDIES	ECO
69-2013	Fabio Bertoni and Tereza Tykvová	WHICH FORM OF VENTURE CAPITAL IS MOST SUPPORTIVE OF INNOVATION? EVIDENCE FROM EUROPEAN BIOTECHNOLOGY COMPANIES	CFRM
70-2013	Tobias Buchmann and Andreas Pyka	THE EVOLUTION OF INNOVATION NETWORKS: THE CASE OF A GERMAN AUTOMOTIVE NETWORK	IK
71-2013	B. Vermeulen, A. Pyka, J. A. La Poutré, A. G. de Kok	CAPABILITY-BASED GOVERNANCE PATTERNS OVER THE PRODUCT LIFE-CYCLE	IK
72-2013	Beatriz Fabiola López Ulloa, Valerie Møller, Alfonso Sousa-Poza	HOW DOES SUBJECTIVE WELL-BEING EVOLVE WITH AGE? A LITERATURE REVIEW	HCM
73-2013	Wencke Gwozdz, Alfonso Sousa-Poza, Lucia A. Reisch, Wolfgang Ahrens, Stefaan De Henauw, Gabriele Eiben, Juan M. Fernández-Alvira, Charalampos Hadjigeorgiou, Eva Kovács, Fabio Lauria, Toomas Veidebaum, Garrath Williams, Karin Bammann	MATERNAL EMPLOYMENT AND CHILDHOOD OBESITY – A EUROPEAN PERSPECTIVE	HCM
74-2013	Andreas Haas, Annette Hofmann	RISIKEN AUS CLOUD-COMPUTING-SERVICES: FRAGEN DES RISIKOMANAGEMENTS UND ASPEKTE DER VERSICHERBARKEIT	HCM

75-2013	Yin Krogmann, Nadine Riedel and Ulrich Schwalbe	INTER-FIRM R&D NETWORKS IN PHARMACEUTICAL BIOTECHNOLOGY: WHAT DETERMINES FIRM'S CENTRALITY-BASED PARTNERING CAPABILITY?	ECO, IK
76-2013	Peter Spahn	MACROECONOMIC STABILISATION AND BANK LENDING: A SIMPLE WORKHORSE MODEL	ECO
77-2013	Sheida Rashidi, Andreas Pyka	MIGRATION AND INNOVATION – A SURVEY	IK
78-2013	Benjamin Schön, Andreas Pyka	THE SUCCESS FACTORS OF TECHNOLOGY-SOURCING THROUGH MERGERS & ACQUISITIONS – AN INTUITIVE META- ANALYSIS	IK
79-2013	Irene Prostopolow, Andreas Pyka and Barbara Heller-Schuh	TURKISH-GERMAN INNOVATION NETWORKS IN THE EUROPEAN RESEARCH LANDSCAPE	IK
80-2013	Eva Schlenker, Kai D. Schmid	CAPITAL INCOME SHARES AND INCOME INEQUALITY IN THE EUROPEAN UNION	ECO
81-2013	Michael Ahlheim, Tobias Börger and Oliver Frör	THE INFLUENCE OF ETHNICITY AND CULTURE ON THE VALUATION OF ENVIRONMENTAL IMPROVEMENTS – RESULTS FROM A CVM STUDY IN SOUTHWEST CHINA –	ECO
82-2013	Fabian Wahl	DOES MEDIEVAL TRADE STILL MATTER? HISTORICAL TRADE CENTERS, AGGLOMERATION AND CONTEMPORARY ECONOMIC DEVELOPMENT	ECO
83-2013	Peter Spahn	SUBPRIME AND EURO CRISIS: SHOULD WE BLAME THE ECONOMISTS?	ECO
84-2013	Daniel Guffarth, Michael J. Barber	THE EUROPEAN AEROSPACE R&D COLLABORATION NETWORK	IK
85-2013	Athanasios Saitis	KARTELLBEKÄMPFUNG UND INTERNE KARTELLSTRUKTUREN: EIN NETZWERKTHEORETISCHER ANSATZ	IK

Nr.	Autor	Titel	CC
86-2014	Stefan Kirn, Claus D. Müller-Hengstenberg	INTELLIGENTE (SOFTWARE-)AGENTEN: EINE NEUE HERAUSFORDERUNG FÜR DIE GESELLSCHAFT UND UNSER RECHTSSYSTEM?	ICT
87-2014	Peng Nie, Alfonso Sousa-Poza	MATERNAL EMPLOYMENT AND CHILDHOOD OBESITY IN CHINA: EVIDENCE FROM THE CHINA HEALTH AND NUTRITION SURVEY	HCM
88-2014	Steffen Otterbach, Alfonso Sousa-Poza	JOB INSECURITY, EMPLOYABILITY, AND HEALTH: AN ANALYSIS FOR GERMANY ACROSS GENERATIONS	HCM