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BECOMING (UN)EMPLOYED AND LIFE SATISFACTION: ASYMMETRIC EFFECTS AND POTENTIAL OMITTED VARIABLE BIAS IN EMPIRICAL HAPPINESS STUDIES

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Becoming (Un)employed and Life Satisfaction: Asymmetric Effects and Potential Omitted Variable Bias in Empirical Happiness Studies

Abstract: Becoming unemployed has negative effects on life satisfaction; a transition from unemployment to employment, however, has stronger positive effects in absolute terms. The asymmetry of the non-pecuniary effect indicates a potential "omitted variable bias" in previous empirical happiness studies.

Key words: Happiness; Life Satisfaction; Asymmetric Effect; Labour Status; Employment; Unemployment
JEL classification:*I31, J01, Z13*
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1 Introduction

The significantly negative effects of "involuntary" loss of one's job on happiness have been documented multiple times.[1] This study challenges the usual implicit assumption that a transition from employment to unemployment and the transition from unemployment to employment have effects on happiness of the same absolute size, as supported by descriptive statistics of e.g. Winkelmann and Winkelmann (1998) or Grün et al. (2010). Our parametric analyses, which indicate an asymmetry, also control for changes in income in order to isolate potential pecuniary and non-pecuniary costs. We also control for other usual determinants as well as for gender-specific differences (Winkelmann and Winkelmann, 1995).

[1] Cf. Blanchflower and Oswald (2004), Powdthavee (2009) and Stutzer (2004).

To operationalise happiness, we apply the single-item measurement of the "Socio-Economic Panel"[2] and follow the trends of most of the literature, which interprets the general life satisfaction as a separately measurable category (Diener et al., 1999) and assumes that individuals are best placed to judge their "happiness" (Stutzer and Frey, 2010).

2 Data and Empirical Strategy

We use the LONG Beta-Version 2010 of the "Socio-Economic Panel (SOEP)" for the following analysis, a population-representative panel survey conducted in Germany.[3]

The primary data set consists of fourteen transitions (1994 to 1995 and 2007 to 2008).[4] For the respective starting year, hereinafter designated as t, only such entities have been selected as were reported as either in full-time employment or unemployed both at the start of the survey and a year later (hereinafter "t+1").[5] We restrict the analysis to persons aged between 20 and 65.

We generate as an endogenous variable $\triangle$HAPP the annual change in the SOEP variable "general life satisfaction", which ranges from 0 ("completely dissatisfied") to 10 ("completely satisfied"). By differentiating, a range of values arises from -10 to +10 (Grün et al., 2010).

We establish our estimates using a pooled cross-section, controlling for different sample sizes in the SOEP by means of longitudinal and cross-sectional weighting. Against the background of the single-peaked distribution of the endogenous var-

[2] The question is: "In conclusion, we would like to ask you about your satisfaction with your life in general. Please answer according to following scale: 0 means "completely dissatisfied", 10 means "completely satisfied". How satisfied are you with your life, all things considered?", http://panel.gsoep.de/soepinfo2009/

[3] See: http://www.diw.de/en/diw_02.c.238121.en/changes_in_the_soep_data_set.html

[4] The analysis is for the period 1994 to 2008, because this is the only period where all necessary variables are available.

[5] For both points in time, therefore, people without jobs, part-time workers and the self-employed have been excluded.

iable, we estimate OLS models like most of the relevant studies (Ferrer-i-Carbonell and Frijters, 2004). To test the robustness of the estimates, we use "ordered logit estimates".

The set of exogenous variables includes initially the variables frequently tested as being significant for life satisfaction, such as household income, health, number of children and partnership (Stutzer, 2004), which are used for changes in the same way as the endogenous variable.[6] We also control for changes in uncertainties about the future with the variables "own and overall economic situation".

The operationalisation of the variable "change in employment status" between the periods t and t+1 yields four manifestations *Employed – Employed, Unemployed – Unemployed, Employed → Unemployed* and *Unemployed → Employed*, with the latter two being at the centre of this study. The reference category is *Employed – Employed*.

3 Results

Figure 1 shows the distribution of change in general life satisfaction at the transition from t to t+1 for the four types of employment status. The distributions of changes in life satisfaction of the subpopulations of Employed – Employed and Unemployed – Unemployed are relatively symmetrical around zero, although the continuously employed exhibit significantly less change in their life satisfaction than the continuously unemployed. Among the continuously unemployed, there are both more positive and more negative changes in life satisfaction.

The transition from employment into unemployment is associated with a right-skewed distribution ($\cup$ = -0.264), that is, with more (probability) mass in the negative range. People who move from unemployment to full-time employment are characterised by a left-skewed distribution with increased mass in the positive range ($\cup$ = 0.185).

[6] Concerning changes in household income, the equivalence-weighted monthly net household income in t is compared to that in t+1, and the growth rate is calculated.

Fig. 1 Change in Life Satisfaction by Labour Status. Pooled Cross-Section, 1994 to 2008, With Two Transitions Each.

Source: Own analysis, calculation and illustration, LONG Beta-Version SOEP (2010).

Table 1 summarises the regression results. Our estimates on the influence of variables not in the foreground are consistent with results from other studies. Thus, health has a significantly positive impact on life satisfaction (Knabe and Rätzel, 2010). The influence of marital status or non-marital unions shows significant effects (Ferrer-i-Carbonell and Frijters, 2004). We found no significant effect on happiness resulting from the number of children, which, at least, matches the findings of most of the relevant studies (Luechinger, 2010).

As far as the central object of the study is concerned, the change in employment status, Employed → Unemployed, as expected, has a significantly negative effect on life satisfaction (β = -0.554), generally confirming the results of most of the other relevant studies. Previously job-seeking individuals who start full-time employment in t+1 (Unemployed → Employed with β = 0.719) exhibit significantly positive effects in terms of changes in their life satisfaction. In absolute terms the latter effect is significantly larger, constituting an asymmetry between leaving

and joining the labour market.[7] This effect is the non-pecuniary effect of the transition to unemployment or employment, because the study controls for the (significant) influence of net household income.

Model B tests whether changes in income also have asymmetric effects on happiness, but we do not find such evidence.[8] The asymmetric non-pecuniary effects of the change of employment status (measured by the difference of the absolute size of the coefficients of the change in employment status) remain fully intact.

Furthermore we test for the changes in the (perceived) "own economic situation" and "overall economic situation". Both variables are significant, the first determinant being more influential.

Model C tests for gender-specific differences. First, it should be noted that a positive change in health has a slightly significant larger positive effect for women. Finding a partner is significantly more positive for women; however, no significant differences were found in connection with the loss of a partner. We did not find gender-specific differences for the other variables (not reported in Table 1).

In the gender-specific version of the "ordered logit estimation", the asymmetric effect between Employment → Unemployment and Unemployment → Employment on happiness remains exclusively for women.

[7] For the asymmetric effects of the OLS models A, B and C, see the significant f-tests between employed–unemployed and unemployed–employed (see Table 1).

[8] The f-tests in the OLS models B and C between the income associated with the transition to unemployment and the transition to employment show no significant results.

Table 1: Determinants of Change of Happiness; Regression Results

Models	*OLS*			*Ordered-Logit*		
	A	B	C	A	B	C
Employment status t → t+1						
Employed – Employed	----------Ref.----------			----------Ref.----------		
Unemployed – Unemployed	-0.001	-0.001	-0.019	-0.014	-0.019	-0.019
	[0.026]	[0.025]	[0.036]	[0.035]	[0.036]	[0.050]
Employed → Unemployed	-0.554***	-0.439***	-0.487***	-0.706***	-0.573***	-0.650***
	[0.055]	[0.059]	[0.071]	[0.069]	[0.077]	[0.089]
Unemployed → Employed	0.719***	0.555***	0.560***	0.907***	0.699***	0.694***
	[0.062]	[0.067]	[0.080]	[0.085]	[0.093]	[0.111]
Employed → Unemployed * Female			0.151			0.247*
			[0.112]			[0.144]
Unemployed → Employed * Female			-0.014			0.019
			[0.127]			[0.162]
Δ **HHInc.** *t → t+1* (growth rate)	0.214***	0.122***	0.123***	0.247***	0.159***	0.160***
	[0.036]	[0.043]	[0.043]	[0.048]	[0.054]	[0.054]
Unempl. →Unempl. * Δ HHInc. (growth rate)		0.091	0.088		0.062	0.057
		[0.092]	[0.091]		[0.131]	[0.130]
Empl. →Unempl. * Δ HHInc. (growth rate)		0.540***	0.522***		0.644**	0.617**
		[0.176]	[0.177]		[0.271]	[0.272]
Unempl. →Empl. * Δ HHInc. (growth rate)		0.318**	0.321***		0.403***	0.404***
		[0.123]	[0.123]		[0.152]	[0.152]
Δ **Health** *t → t+1*	0.371***	0.357***	0.337***	0.470***	0.457***	0.439***
	[0.016]	[0.016]	[0.017]	[0.020]	[0.020]	[0.022]
△ Health * Female			0.059*			0.056
			[0.036]			[0.048]
Δ **Own Economic Situation** *t → t+1*		0.282***	0.283***		0.350***	0.351***
		[0.019]	[0.019]		[0.024]	[0.024]
Δ **Overall Economic Situation** *t → t+1*		0.058***	0.059***		0.079***	0.081***
		[0.016]	[0.017]		[0.022]	[0.022]
Δ **Children** *t → t+1* (ref.: no or negative change)						
Positive Change	0.039	0.018	-0.003	0.030	0.005	-0.018
	[0.089]	[0.091]	[0.096]	[0.103]	[0.105]	[0.111]
Δ **Partnership** *t → t+1* (ref. no change)						
Positive Change	0.372***	0.362***	0.281***	0.443***	0.436***	0.302***
	[0.057]	[0.057]	[0.073]	[0.074]	[0.075]	[0.095]
Positive Change * Female			0.213*			0.356**
			[0.116]			[0.145]
Negative Change	-0.170***	-0.159***	-0.112	-0.185**	-0.170**	-0.108
	[0.064]	[0.064]	[0.089]	[0.086]	[0.087]	[0.127]
Negative Change * Female			-0.108			-0.137
			[0.127]			[0.169]
Year Dummies (1994/95,..., 2007/08)	----------Yes----------			----------Yes----------		
Constant	----------Yes----------			----------No----------		
Adjusted R^2/LR index (Pseudo R^2)	0.0525	0.0685	0.0690	0.0153	0.0201	0.0203
F-Statistic/ Probability (LR stat.)	47.26***	53.57***	41.47***	0.000	0.000	0.000
N	----------67,357----------			----------67,357----------		
Test (Empl. – Unempl. = Unempl – Empl.)	201.38***	141.00***	89.72***	-	-	-
Test (Unempl. * Δ HHInc. = Empl. * Δ HHInc.)	-	1.21	0.98	-	-	-

Notes: Dependent variable: △ life satisfaction between t and t+1; robust variance estimator with clustering for persons; robust standard errors in brackets; coefficients of the models, with error probability in parentheses: ***p<0.01 - **p<0.05 - *p<0.1; cross and section weights for all waves; weighted household net income by the modified OECD scale.

Source: Own analysis, calculation and illustration, LONG Beta-Version SOEP, 2010.

We note that the loss of a job can be associated with significantly smaller non-pecuniary losses in life satisfaction than the corresponding gains realised when moving from unemployment to employment. Empirical research which does not control for such asymmetries has a potential omitted variable bias, with the consequence of possibly underestimating the effects of Unemployment → Employment on life satisfaction.

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