

**Unemployment and  
well-being in Europe.  
The effect of country  
unemployment rate,  
work ethics and family ties**

Małgorzata MIKUCKA

L'European Values Study (EVS) est une enquête réalisée au Luxembourg en 2008 auprès d'un échantillon représentatif de la population résidente composé de 1610 individus âgés de 18 ans ou plus.

Au niveau national, cette enquête fait partie du projet de recherche VALCOS (Valeurs et Cohésion sociale), cofinancé par le FNR dans le cadre du programme VIVRE. Au niveau international, elle est partie intégrante d'une enquête réalisée dans 45 pays européens qui a pour objectif d'identifier et d'expliquer en Europe les dynamiques de changements de valeurs, et d'explorer les valeurs morales et sociales qui sous-tendent les institutions sociales et politiques européennes ([www.europeanvaluesstudy.eu](http://www.europeanvaluesstudy.eu)).

Plus d'infos : <http://valcos.ceps.lu>.



*CEPS/INSTEAD Working Papers are intended to make research findings available and stimulate comments and discussion. They have been approved for circulation but are to be considered preliminary. They have not been edited and have not been subject to any peer review.*

*The views expressed in this paper are those of the author(s) and do not necessarily reflect views of CEPS/INSTEAD. Errors and omissions are the sole responsibility of the author(s).*

# **Unemployment and well-being in Europe. The effect of country unemployment rate, work ethics and family ties.\***

**Małgorzata Mikucka**  
CEPS/Instead, Luxembourg

January 2011

## **Abstract**

Subjective well-being literature shows that higher unemployment rate corresponds to lower psychological cost of own unemployment. The goal of the paper is to deepen the understanding of this regularity by investigating the role played by the work ethics and the strength of family ties. I analyze the European Values Study data (2008) for 36 countries using multilevel regression methodology.

First, starting from the “stigma hypothesis” I postulate that higher unemployment rate is associated with weaker work values, which correspond to less social pressure and feeling of guilt, in turn lowering the psychological cost of own unemployment. This is only partly supported by the data: whereas stronger work values lower the well-being of unemployed, the country work ethics has no effect.

According to the second hypothesis, stronger family ties raise the well-being of the unemployed. This prediction is confirmed: people living in countries with stronger family ties and those declaring stronger norms for family support suffer less from being unemployed. However, the strength of family ties does not mediate the link between unemployment rate and effect of own unemployment. Moreover, weaker family ties contribute to lower well-being of unemployed in western Europe.

*Keywords:* well-being; unemployment; work ethics; work values; “stigma hypothesis”; family ties; inter-family support

*JEL classification codes:* A13 ; J60

---

\*This research is part of the VALCOS project supported by the Luxembourg 'Fonds National de la Recherche' (contract FNR/VIVRE/06/01/09) and by core funding for CEPS/INSTEAD from the Ministry of Higher Education and Research of Luxembourg. Małgorzata Mikucka is supported by an AFR Grant (n°PDR 2010-1) from the Luxembourg 'Fonds National de la Recherche' cofunded under the Marie Curie Actions of the European Commission (FP7-COFUND).

# 1 Introduction

Starting from the work of Eisenberg and Lazarsfeld (1938), unemployment focuses particular attention of researchers working on well-being. It is known that experiencing unemployment is associated with systematically lower levels of well-being (Helliwell, 2003, Lucas et al., 2004, Pittau et al., 2010), and analyses of longitudinal data demonstrated the causal character of this link (Clark, 2003, Clark and Oswald, 1994, Gerlach and Stephan, 1996, Winkelmann and Winkelmann, 1998). This led to the conclusion - fundamental from a policy point of view - that unemployment is predominately involuntary.

Negative effect of unemployment on well-being exceeds the consequences of fall of income (Brereton et al., 2008, Helliwell and Putnam, 2004, Winkelmann and Winkelmann, 1998), which presumably reflects loss of psychological benefits associated with work, such as prestige and social recognition, opportunities for social interaction and building networks<sup>1</sup>, weaker time structure leading to drop of motivation and losing sense of purpose in life, and increased levels of family stress. In fact, unemployed are found to suffer more often from anxiety, depression, loss of confidence and reduced self-esteem (Theodossiou, 1998).

The psychological cost of unemployment depends on the context. Literature shows (Bonini, 2008, Clark, 2003, Shields and Price, 2005) that the negative effect of unemployment on well-being is weaker in countries or regions where the unemployment rate is higher<sup>2</sup>. On the other hand, higher unemployment rate lowers the well-being of employed persons<sup>3</sup>, presumably because of their lower job security (Luechinger et al., 2008).

The link between unemployment rate and the psychological cost of individual unemployment is not well documented yet. This paper aims at deepening the understanding of this relationship by exploring the impact of norms in two domains. First, I focus on individual work values and country work ethics. I check if the weakening of values can explain why in low-unemployment countries unemployed suffer less. Second, I investigate the effect of family ties, which can alleviate the negative effect of own unemployment on well-being. Similarly,

---

<sup>1</sup>However, the study by Winkelmann (2009) has found no evidence that social capital and social activities moderate the negative effect of unemployment on well-being.

<sup>2</sup>On the regional level the effect is weaker. For example, Pittau et al. (2010) found no relationship between unemployment rate at regional level and the negative effect of unemployment on well-being.

<sup>3</sup>As shown by Clark et al. (2009), the divide goes not only between unemployed and employed, but also between people with less and more stable jobs.

I test if the strength of family ties (which can be stronger in high-unemployment countries) contributes to understanding the link between unemployment rate and the well-being of unemployed.

The paper is organized as follows. I start with a brief literature review and formulating hypotheses; then I move to description of the data and statistical method used. Analysis starts with inspection of descriptive results. Subsequently I estimate a set of multilevel models to formally test the hypotheses, and check the robustness of the results. I conclude with summary and discussion.

## **2 Hypotheses**

The fact that higher unemployment rate makes the unemployed *less unhappy* is surprising. After all, in regions and periods of high unemployment these already disadvantaged members of the society have especially large difficulties with finding a new job. The phenomenon is explained by a shift of standards of what is considered appropriate and normal. The literature refers to the term “stigma effect”: where the unemployment rate is higher, staying without job becomes less stigmatizing (Warr and Jackson, 1987). This mechanism is also observed concerning unemployment of “relevant others” (Clark, 2003): having an unemployed person in the family increases the well-being of unemployed and decreases it for the employed. Apparently, with many unemployed around, people without work constitute a smaller deviation from the “normal” behavior.

This explanation refers to the shift of norms (Shields and Price, 2005), however the nature of norms that come into play was so far not explicitly investigated. Using data that measure work values, I explore the issue in more detail. I focus on the question if individual work values and country work ethics affect well-being of unemployed and if they can be considered factors mediating the effect of personal unemployment on well-being.

The idea that societies (countries, religious groups) differ in terms of “work ethics” stems from Max Weber (1958). Also newer literature suggests large differences across countries and cultures (Arslan, 2001a,b). The consequences may be socially substantial. Weber’s (1958) work indicates work ethics as a source of economic success of protestant countries. Some other results suggest that it may influence also the effect of unemployment on well-being.

People of protestant denomination (associated by Weber (1958) with stronger work ethics) experience higher drop of well-being due to unemployment (van Hoorn and Maseland, 2008).

On the level of individual (for clarity, I will use the term “work values” referring to individual level, and “work ethics” - at country level), it may be defined as an internal motivation to work. Individuals with weak work values have a higher disutility cost of working and a higher willingness to live off unemployment benefits as long as possible. On the other hand, people with strong work values would enjoy working and would feel guilty exploiting benefits provided by the government (Michau, 2009)<sup>4</sup>. In order to stress the individual character of this factor, in remaining of the text I will refer to the terms “work values” when speaking about work ethics at the level of an individual.

**Hypothesis 1. Social pressure: the effect of work ethics** I expect that work values of an individual, as well as work ethics of the country of inhabitation may affect how difficult the experience of unemployment is. Unemployed with strong work values may suffer psychologically due to departing from the desired behavior, and they may experience stronger feeling of guilt. Similarly, strong work ethics in the country may create social pressure that makes undergoing unemployment more difficult. The effect of social pressure refers specifically to the “social stigma”: in a society where everybody believes that work is an important obligation, being unemployed may cause more criticism, maybe even ostracism that would worsen the situation of unemployed.

However, work values and ethics may be just one of the factors coming into play. Another aspect of norms that may be of importance here is related to family life and intergenerational support.

People who experience negative events in life often receive support from others, which may have a protective effect on their well-being (Kalmijn, 2010, Lin et al., 1979). Social support may be especially important for the unemployed, both in terms of economic help and

---

<sup>4</sup>Interestingly, Michau (2009) indicates that prevalence of given type of ethics in population influences implemented policy solutions. Predominance of high work ethics would be associated with low risk of exploiting the system, which in turn leads to generous unemployment benefits. Contrary to that, if the work ethics is predominantly low, cost of generous unemployment insurance would be too high to implement it, which would lead voters to approve a replacement ration sufficiently low to induce everybody to work.

emotional support. Such help is first expected from from one's family (Eggebeen and Davey, 1998), therefore the large cross-country differences in the norms of intergenerational support can help understand the cross-country differences in psychological cost of unemployment<sup>5</sup>.

Norms of within-family support may be declared directly. It may be also captured by behavior. One of important elements of the intergenerational support is co-residence of parents and children - this may serve as an indicator of the norm of within family support. As shown by Kalmijn and Saraceno (2008), the norm of intergenerational support is stronger in southern and eastern European countries, where also young people longer co-reside with their parents (Aassve et al., 2002). Moreover, the co-residence itself may also serve as a source of economic and emotional support both for the unemployed and his/ her family.

**Hypothesis 2. Within-family support network** I expect that people declaring stronger norms of intergenerational support would suffer less from unemployment. Similarly, I expect that the well-being of the unemployed will be higher in countries where the intergenerational support, as well as the norms of such support, are stronger.

### 3 Data and method

#### 3.1 Data

The data come from the fourth edition of the European Values Study (EVS) (EVS Foundation/Tilburg University, 2010) conducted in years 2008-2009 in 39 European countries and regions. EVS is a cross-sectional survey program dating back to 1981 and a rich source of information on beliefs, attitudes and opinions of European citizens on a wide range of topics, such as family, work, religion, politics, society and others.

I use data for 36 countries<sup>6</sup>, which sums up to over 53 600 individuals. The range of countries is particularly wide, including:

- post communist countries: both central-eastern (Czech, Hungary, Poland, Slovakia and Slovenia) and southern (Albania, Bulgaria, Romania, Bosnia and Herzegovina, Serbia

---

<sup>5</sup>For an example of similar analysis concerning the psychological cost of divorce see Kalmijn (2010).

<sup>6</sup>The database contains information for 39 countries and regions, however country/region level statistics for Northern Cyprus, Northern Ireland and Kosovo are hardly available, therefore I excluded them from the analysis.

- and Montenegro),
- former Soviet Union, including the European (Russian Federation, Belarus, Ukraine, Estonia, Latvia, Lithuania and Moldavia) and Caucasian countries (Armenia, Azerbaijan and Georgia),
  - Mediterranean (Malta, Cyprus, Greece, Spain and Portugal),
  - western continental (Austria, Belgium, France, Germany, Ireland, Luxembourg, Netherlands and Switzerland), and
  - Scandinavian (Denmark and Finland).

Table 1: Sample characteristics including unemployment rate.

	% of unemployed in the sample	Unemployment rate <sup>a</sup>		N
		men	women	
Albania	18.8	19.3	33.7	1534
Azerbaijan	16.7	24.9	16.9	1505
Austria	2.3	4.5	3.5	1510
Armenia	17.0	27.0	35.8	1500
Belgium	6.6	11.6	10.5	1509
Bosnia Herzegovina	26.7	32.2	47.6	1512
Bulgaria	9.2	11.4	18.0	1500
Belarus	3.6	7.5	3.4	1500
Cyprus	3.3	4.4	7.6	1000
Czech Republic	3.7	4.8	8.5	1821
Denmark	1.8	2.5	3.1	1507
Estonia	2.8	7.2	3.4	1518
Finland	5.5	8.8	7.7	1134
France	4.6	7.2	8.9	1501
Georgia	34.7	46.6	60.6	1500
Germany	11.2	18.0	18.7	2075
Greece	4.3	6.4	11.2	1498
Hungary	8.3	14.9	12.2	1513
Ireland	7.1	14.1	8.9	1013
Latvia	6.3	13.4	7.8	1506
Lithuania	4.5	8.0	7.1	1500
Luxembourg	2.9	4.7	5.2	1610
Malta	4.3	6.5	14.7	1500
Moldavia	18.5	34.2	27.8	1551
Montenegro	28.2	31.2	40.5	1516
Netherlands	1.2	2.9	1.7	1554
Poland	7.5	11.4	14.7	1510
Portugal	7.6	9.7	17.9	1553
Romania	2.7	6.9	4.0	1489
Russian Federation	4.6	9.5	5.8	1504
Serbia	21.0	27.9	36.9	1512
Slovak Republic	5.9	7.9	13.5	1509
Slovenia	4.1	6.2	8.7	1366
Spain	7.9	11.2	15.2	1500
Switzerland	1.9	3.4	2.6	1272
Ukraine	7.8	15.1	13.1	1507

Source: *European Values Study, 2008*

<sup>a</sup> % of unemployed in the economically active population

Sample size per country varies between over 2 000 for Germany and about 1 000 (Cyprus and Ireland). For details on sample size and composition in particular countries see table 1).



## 3.2 Measurement of the dependent variable

**Subjective well-being** The dependent variable in the analysis is the self-assessed well-being. EVS contains two indicators of it:

1. happiness (“*Taking all things together, would you say you are: very happy / quite happy / not very happy / not at all happy*”) and
2. life satisfaction (“*All things considered, how satisfied are you with your life as a whole these days? (1) dissatisfied - (10) satisfied*”).

Both these variables were proved reliable indicators of psychological well-being. For instance, it has been shown that national-level happiness correlates with hypertension and with prevalence of heart diseases in a country (Blanchflower and Oswald, 2008). Moreover, individuals who declare to be happier have lower levels of salivary cortisol (stress hormone), reduced fibrinogen stress responses, and lower heart rate (Steptoe and Wardle, 2005); their areas of the brain associated with processing of pleasure are more active (Urry et al., 2004), and their neurological response to negative information is weaker (van Reekum et al., 2007). Self-ratings of subjective well-being were also proved to correlate with judgments made by a third person (Schneider and Schimmack, 2009), to be stable for individuals (Kahneman and Krueger, 2006, Schimmack et al., 2010), and to associate with satisfaction with particular domains of life (Schimmack et al., 2010).

It is also recognized that self-assessment of well-being fluctuates day-by-day under the influence of random events (such as finding a coin or the weather) (Kahneman and Krueger, 2006), and (on a social level) depends on propensity toward positivity in responding (Diener et al., 2000). This however does not undermine the reliability of these measures. Happiness may affect behavior even if it is triggered by random events. More importantly however, despite above mentioned randomness, judgments of well-being systematically differ along individual and social-level factors (such as prosperity, equality, social security, political freedom), which supports the claim that they well reflect living conditions faced by individuals (Ouweneel and Veenhoven, 1991).

*Happiness* and *life satisfaction* are regarded as separate but close measures of the same phenomenon. Helliwell and Putnam (2004) consider life satisfaction a better tool for assessing effects of stable characteristics of social context, but note that their central results do not

change when happiness measure is used. On the other hand, Peiró (2006) considers happiness and life satisfaction two distinct spheres of well-being, of which the second one depends more on economic factors. Taking this into account and following the example of Kalmijn (2010), I use both indicators to construct my dependent variable. Correlation between them is  $.51^7$  for sample including all countries<sup>8</sup>.

After re-coding (so that higher values of both measures indicate higher well-being), I standardize both variables (because they have different metrics) and sum them. The resulting variable is recoded into percentile scores, which makes it (and the later obtained regression coefficients) easier to interpret (because 99 means the highest, and 1 - the lowest possible level of well-being). Obtained variable ranges from 1 to 94, and has the mean of 46.7. Switching from standardized values to percentile scores reduces also the skewness on the left side of the distribution.

Acknowledging that the measure used in analysis is not a standard one, I further validate obtained results with the use of happiness and life satisfaction variables.

### **3.3 Measurement of the independent individual-level variables**

**Employment status** I code employment status as a set of dummy variables. I distinguish five employment categories:

1. unemployment,
2. employment (including full-time (30 hours or more per week), part-time (less than 30 hours per week), and self-employment)
3. housewife not otherwise employed,
4. retired and
5. other not employed (containing students, disabled, military service and otherwise not-classified situations).

Here, the most important categories are unemployment and employment (the reference category).

---

<sup>7</sup>After reversing the scale of *happiness*.

<sup>8</sup>But within particular countries it ranges between  $.08$  for Azerbaijan and  $.71$  in Finland, which suggests that using each of three possible measures in countries such as Azerbaijan may give different results.

**Work-related values** Work values in EVS are captured by a set of five statements measuring values of a respondent on a 5-points Likert scale from “agree strongly” to “disagree strongly”. These are:

1. *To fully develop your talents you need to have a job,*
2. *It is humiliating to receive money without having to work for it,*
3. *People who don't work turn lazy,*
4. *Work is a duty towards society and*
5. *Work should always come first, even if it means less spare time.*

Factor analysis performed on these statements (both orthogonal and oblique model) provided solution with one factor (with loadings of about .5-.58), therefore I account for a single dimension of values by calculating the average of the above mentioned statements. The variable is recoded so that lower values indicate weaker values.

**Inter-family support** As a proxy of the inter-family support I use co-residence with parents. It is a dummy variable, which takes the value of 1 if the respondent lives in the same household with his/her parents, 0 - if not. The questionnaire does not make it clear if the partner's parents were also classified as “parents”.

**Norms of inter-family support** The variable is constructed on the basis of following questions:

1. *“Which of these two statements do you tend to agree with? (a) Regardless of what the qualities and faults of one's parents are, one must always love and respect them; (b) One does not have the duty to respect and love parents who have not earned it by their behavior and attitudes.”*
2. *“Which of the following statements best describes your views about parents' responsibilities to their children? (a) Parents' duty is to do their best for their children even at the expense of their own well-being; (b) Parents have a life of their own and should not be asked to sacrifice their own well-being for the sake of their children.”*
3. *“Which of the following statements best describes your views about responsibilities of adult children towards their parents when their parents are in need of long-term care?”*

*(a) Adult children have the duty to provide long-term care for their parents even at the expense of their own well-being; (b) Adult children have a life of their own and should not be asked to sacrifice their own well-being for the sake of their parents”*

For each individual I compute a sum of answers supporting the inter-family obligations (answers “a”): higher values indicate stronger norm of the inter-family support.

In the model I also include a list of individual-level control variables.

**Age** Age is measured in years. I also include age squared, to allow for the U-shaped relationship between age and well-being.

**Married** I control only for the effect of being married vs. not being married, i.e. I don’t distinguish between never married, widowed, divorced, separated or persons in registered partnership.

**Having children** I control for presence of any children in the household of the respondent<sup>9</sup>.

**Being a parent** This variable includes also cases when the child does not live with the respondent.

**Married and having children** Combination of being married and having children may have an effect on well-being, therefore I include a dummy variable taking the value of 1 for respondents who are married, have children and live with some children in their households.

**Education** With two dummy variables I control for having secondary or tertiary education, as opposed to having vocational, primary or lower education.

**Social trust** I construct the measure of social trust as an average of two variables (*“Do you think that most people would try to take advantage of you if they got the chance, or would they*

---

<sup>9</sup>The data does not allow checking if the child in the household is a child of the respondent, his/her grandchild, relative or other person.

*try to be fair?”* and *“Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?”*), of which both use 10-points answering scale. The correlation between the variables is .49, and higher values designate higher level of trust.

**Health problems** I control for declared level of health problems, utilizing answers to the question: *“All in all, how would you describe your state of health these days? Would you say it is (1) very good . . . (5) very poor?”* Higher values indicate more health problems.

Because endogeneity of self-declared health may be a problem, I validate the robustness of final results by excluding this variable from the model.

**Household income** In EVS income is coded as an ordinal variable which assigns to each respondent only the information on the income range to which the respondent belongs, so that exact value of income is not known<sup>10</sup>. To construct the measure of income, I use the country-specific variables<sup>11</sup>. First, I replace the category codes with the categories' middle values (separately for each country) and then make them comparable with the use of PPP exchange rates, so that resulting values are expressed in international PPP dollars<sup>12</sup>. In regression, I use income in the logarithmic form, which I subsequently center around the country mean.

As usually, for considerable percentage of respondents (over 40% in Malta, Portugal and Ireland, over 30% in Denmark) the information on household income is missing. In order to include also these respondents in the analysis, I substitute missing values with country mean and mark answers “don't know” and “refusal” with two separate dummy variables. This way of dealing with missingness certainly lowers the reliability of the income variable. Alternative solutions might be either to completely ignore the level of income, or to perform analysis on strongly narrowed sample with non-missing income. Ignoring the income level, which is a strong predictor of well-being, might lead to acquiring biased estimates; similar consequences might have performing the analysis on non-randomly selected sample. For this reason I use

---

<sup>10</sup>The question in EVS questionnaire is as follows: *“Here is a list of incomes and we would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, after taxes and other deductions.”*

<sup>11</sup>A common variable (unified for all countries, with all income ranges expressed in Euro) is available, however it offers very poor representation of income differences in poorer countries. For this reason I use a set of country-specific variables.

<sup>12</sup>Because at the time of writing the paper PPP exchange rates were available only for 2005 (and data come from 2008/9), before PPP conversion I also deflate the incomes to the 2005 values.

the income variable with imputed missing values. Considering its weaknesses, I perform two robustness checks of the final model: first, excluding the income variable; second, limiting sample to respondents who provided information on income (in the second case I exclude from the analysis countries, where percentage of missing income information exceeds 30%).

### **3.4 Measurement of the country-level variables**

**Unemployment rate** I include information on the overall country unemployment rate.

**Work ethics in a country** Work ethics in a country is defined as the average of individual work values of the citizens.

**Strength of family ties** I use two measures to capture strength of family ties. The first one refers to co-residence and is the country percentage of unemployed aged 18-50 who live with their parents.

**The norm of inter-family support** This is the second variable relating to the strength of family ties in a country. It is constructed as an average of the norm of within-family support declared by respondents in a country (see individual measurement of declared importance of the family).

In the analysis I also account for two country-level control variables.

**GDP** Although Easterlin (1974) found little evidence on the link between GDP and happiness (neither cross-nationally nor in time-trends) which initiated discussion on the “Easterlin paradox”, part of the literature shows a positive relationship between the two (Hessami, 2010, Stevenson and Wolfers, 2008). Therefore I control the level of national income by using country’s GDP (data for year 2007, corrected by PPP).

**Region** I include a dummy variable marking countries of former Soviet Union, which are known to experience systematically lower levels of subjective well-being (Kalmijn, 2010).

Table 2: Means and standard deviations of variables used in the analysis

	<i>mean</i>	<i>sd</i>	<i>min</i>	<i>max</i>	<i>count</i>
subjective well-being, percentiles	46.71	28.13	1	94	52470
employed	0.51	0.50	0	1	53323
unemployed <sup>a</sup>	0.09	0.29	0	1	53323
housewife <sup>a</sup>	0.08	0.27	0	1	53323
retired <sup>a</sup>	0.23	0.42	0	1	53323
other empl. status <sup>a</sup>	0.08	0.27	0	1	53323
age	47.03	17.84	18	108	53440
age <sup>2</sup>	318.53	335.77	0.085	3756.7	53440
married	0.54	0.50	0	1	53355
married, with children	0.34	0.47	0	1	53609
has children	0.71	0.45	0	1	53214
children in the hh	0.45	0.50	0	1	52613
secondary <sup>b</sup>	0.48	0.50	0	1	53258
tertiary <sup>b</sup>	0.24	0.43	0	1	53258
trust	4.96	2.18	1	10	53291
health problems	2.35	0.96	1	5	53456
hh income (log, ppp)	-0.00	0.71	-3.81	3.40	53595
missing income: dk	0.12	0.32	0	1	53609
missing income: refusal	0.07	0.26	0	1	53609
work ethics	3.66	0.74	1	5	53373
with parents	0.20	0.40	0	1	52932
norm for family support	3.82	0.45	1	4	53380
woman	0.56	0.50	0	1	53608
Observations	53609				
UNEMPL. RATE <sup>c</sup>	-0.07	5.62	-8.56	20.8	36
WORK ETHICS <sup>c</sup>	-0.01	0.21	-0.51	0.41	36
FAMILY TIES <sup>c</sup>	0.00	0.16	-0.33	0.28	36
FAMILY SUPPORT <sup>c</sup>	-0.02	0.31	-0.71	0.54	36
GDP <sup>c</sup>	0.16	15.29	-20.0	56.9	36
EX-SOVIET UNION <sup>c</sup>	0.28	0.45	0	1	36
Observations	36				

Source: *European Values Study, 2008*

<sup>a</sup> reference category is employment (full-time, part-time and self-employed)

<sup>b</sup> reference category is primary and vocational education

<sup>c</sup> country-level variables

Note: all country-level variables are mean-centered; hh income is centered within each country.

All variables used in the analysis are summarized in table 2.

### 3.5 Statistical method

To test the hypotheses I use multilevel regression, which allows modeling the dependent variable as a function of predictors measured on various levels, e.g. using individual and country characteristics. I use multilevel, rather than simple regression, because hierarchical data (such as multi-country EVS with individuals nested within countries) do not satisfy the basic assumption of independence of observations. This may lead to biased estimates of parameters and their standard errors, which in turn can result in wrongly rejecting or supporting theoretically important conclusions (Bryk and Raudenbush, 1992, Luke, 2004).

I test a two-level model, with individuals (level 1) nested within countries (level 2). The average subjective well-being is allowed to vary randomly across countries (random intercept), and the effect of unemployment on well-being is also allowed to vary across countries (random slope). Formally, the model is presented in equations 1-3.

*Individual-level equation:*

$$\begin{aligned}
 wb_{ij} = & \alpha_{0j} + \alpha_{1j} \cdot Unempl_{ij} + \\
 & + \alpha_2 \cdot Unempl_{ij} \cdot WorkVal_{ij} + \alpha_3 \cdot Unempl_{ij} \cdot FamilyTies_{ij} + \\
 & + \alpha_4 \cdot x_{1,ij} + \dots + \alpha_{k+3} \cdot x_{k,ij} + \epsilon_{ij}
 \end{aligned} \tag{1}$$

*Country-level equations:*

$$\alpha_{0j} = \beta_{00} + \beta_{01} \cdot z_{1,i} + \dots + \beta_{0m} \cdot z_{m,i} + \mu_i \tag{2}$$

$$\alpha_{1j} = \beta_{10} + \beta_{11} \cdot UnRate_i + \beta_{12} \cdot WorkEthics_i + \beta_{13} \cdot FamilyTies_i + \nu_i \tag{3}$$

Equation 1 shows the individual-level model for individual  $i$  in country  $j$ . The dependent variable,  $wb_{ij}$ , is the self-assessed well-being of the individual  $ij$ . The intercept  $\alpha_{0j}$  contains subscript  $j$ , which indicates that different intercepts may be estimated in various countries. The coefficient  $\alpha_{1j}$  associated with the variable  $Unempl_{ij}$  informs on the *ceteris paribus* effect of unemployment on individual's well-being. Again, the subscript  $j$  indicates that the effect of unemployment may differ across countries. Following two terms,  $\alpha_2 \cdot Unempl_{ij} \cdot WorkVal_{ij}$



and  $\alpha_3 \cdot Unempl_{ij} \cdot FamilyTies_{ij}$  are the interactions describing the effect of *individual-level* characteristics (work values and family ties) of the unemployed on their well-being. Coefficients  $\alpha_2$  and  $\alpha_3$  will be therefore important for verifying the hypotheses. Finally, equation 1 includes also a set of individual-level control variables  $x_{1.ij} \dots x_{k.ij}$ . I assume that the effect of these variables on well-being is the same in all countries, therefore coefficients  $\alpha_4 \dots \alpha_{k+3}$  do not contain the subscript  $j$ . The last element of equation 1,  $\epsilon_{ij}$ , is the individual-level error. This is the part of variation unexplained by the model, which cannot be attributed to the cross-country variation.

Equation 2 describes how the country-specific intercept  $\alpha_{0j}$  (see equation 1) depends on  $m$  country level variables ( $z_{1.i} \dots z_{m.i}$ ). The equation contains also the error term  $\mu_i$ , which corresponds to the country-level random intercept in the multilevel model.

The equation 3 models the effect of unemployment on well-being as a function of *country-level* variables: unemployment rate, work ethics and strength of family ties ( $UnRate_i$ ,  $WorkEthics_i$  and  $FamilyTies_i$ , respectively). Therefore, the coefficients  $\beta_{11} \dots \beta_{13}$  are fundamental for verifying the hypotheses. The random variation of unemployment effect is captured by element  $\nu_i$ , and corresponds to the random slope in multilevel model.

To test the hypotheses I focus on the interactions of unemployment with the individual and country-level factors (coefficients:  $\alpha_2$ ,  $\alpha_3$ ,  $\beta_{11}$ ,  $\beta_{12}$  and  $\beta_{13}$ ). This method has an advantage over inspecting the determinants of well-being on a sample limited to unemployed, because average well-being of unemployed and employed individuals in a country are strongly correlated (country-level correlation coefficient  $r = .69$  among women and  $r = .57$  among men, for 36 countries). Using this model would therefore fail to focus on well-being cost of unemployment, but would instead inform on the determinants of well-being in general.

## 4 Results

### 4.1 Country-level descriptive results

I start with inspecting scatter plots (figure 1) presenting the country-level relationship between the average well-being cost of being unemployed (vertical axis) and characteristics of countries (horizontal axis): unemployment rate, country work ethics, and strength of family ties measured by both co-residence with parents of unemployed adults and by the declared norm

for inter-family support. The figure is accompanied by table 3, showing the country-level correlations between the average effect of unemployment and explanatory country-level factors.

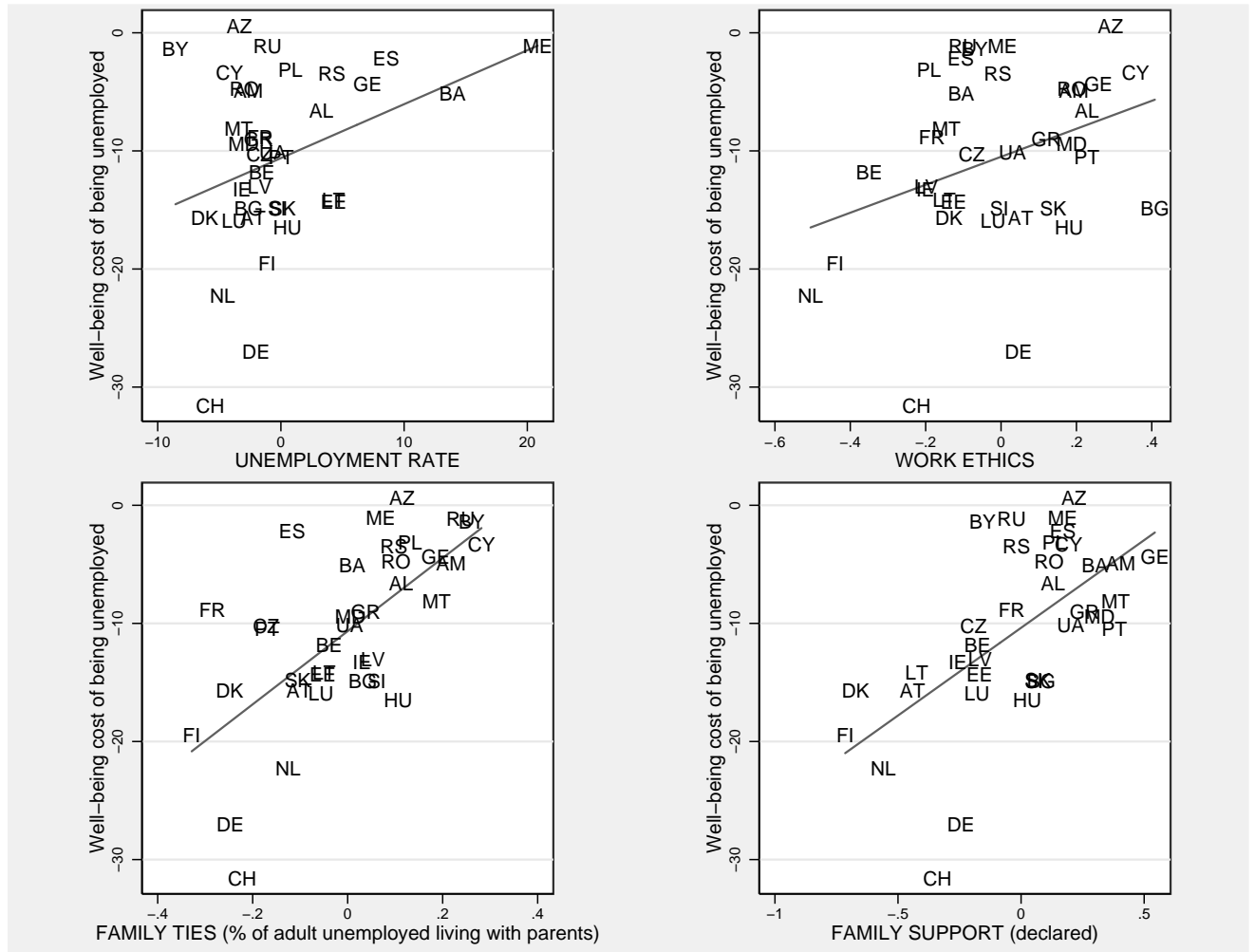


Figure 1: The association between country-level indicators and the well-being cost of being unemployed.

**Country codes:**

AL Albania, AM Armenia, AT Austria, AZ Azerbaijan, BA Bosnia and Herzegovina, BE Belgium, BG Bulgaria, BY Belarus, CH Switzerland, CY Cyprus, CZ Czech, DE Germany, DK Denmark, EE Estonia, ES Spain, FI Finland, FR France, GE Georgia, GR Greece, HU Hungary, IE Ireland, LT Lithuania, LU Luxembourg, LV Latvia, MD Moldavia, ME Montenegro, MT Malta, NL Netherlands, PL Poland, PT Portugal, RO Romania, RS Serbia, RU Russia, SI Slovenia, SK Slovakia, UA Ukraine

The well-being cost of own unemployment varies a lot across countries and it ranges from close to zero (in Azerbaijan, Belarus, Russia and Montenegro) to about -30 in Switzerland (i.e. well-being of unemployed is about 30percentage points lower than of employed) and over -20 in Netherlands and Germany. Similarly, also the explanatory factors are quite diversified across countries.

Unemployment rate is positively correlated with well-being consequences of unemployment, which is consistent with the literature: higher unemployment rate corresponds to less

Table 3: Country-level correlations between explanatory variables.

	WELL-BEING COST OF UNEMPLOYMENT	UNEMPLOYMENT RATE	WORK ETHICS	FAMILY TIES	FAMILY SUPPORT
WELL-BEING COST OF UNEMPLOYMENT	1.00				
UNEMPL. RATE	0.35*	1.00			
WORK ETHICS	0.34*	0.04	1.00		
FAMILY TIES	0.67***	0.06	0.44*	1.00	
FAMILY SUPPORT	0.62***	0.33 <sup>+</sup>	0.65***	0.58***	1.00

Source: *European Values Study, 2008*

<sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*\*  $p < 0.001$

negative effect of own unemployment on well-being. However, the relationship seems in a large part driven by high-unemployment countries (Montenegro, Bosnia and Herzegovina, Georgia, and Spain). For the group of countries with unemployment rate under 10% no relationship is observed (results not shown, correlation coefficient of 0.0075 for 26 countries).

The results for work ethics are surprising. The correlation is positive, which means that stronger work ethics corresponds to smaller negative effect of unemployment on well-being. In countries where the well-being cost of being unemployed is highest (Netherlands, Finland, Switzerland) the declared work values are weakest. Here as well as in case of unemployment rate, the relationship is mainly driven by a small group of countries: after excluding Netherlands and Switzerland the correlation becomes statistically insignificant.

Things look differently for the strength of family ties. The percentage of adult unemployed who are residing with their parents, as well as the declared norm for family support are strongly correlated with the country-level average well-being cost of unemployment. The stronger the family ties in a country, the lower the average psychological cost of unemployment.

Inspection of correlations among the country-level factors (table 3) informs that the country unemployment rate is correlated only with the declared norm of family support. The explanatory factors are positively correlated: not only the two measures of family ties, but also family ties and country work ethics. For this reason, performing the multilevel regression I will start by including them in the model separately.

## 4.2 Multivariate analysis

The results so far were based on inspection of country-level bivariate correlations. In order to test the hypotheses I turn to multilevel regression, which will allow accounting for individual-level characteristics, therefore also for the compositional differences between countries. The

results are presented in tables 4 and 5.

Table 4: Regression of well-being on set of explanatory variables. Basic model including individual and country-level predictors.

	(1) Null model		(2) Basic model	
unemployed <sup>a</sup>			-2.52	(-3.22)*
unemployed x WEST			-5.42	(-3.20)*
woman			0.80	(3.60)***
housewife <sup>a</sup>			2.11	(4.83)***
retired <sup>a</sup>			2.62	(6.66)***
other empl. status <sup>a</sup>			1.96	(4.39)***
age			-0.11	(-10.48)***
age <sup>2</sup>			0.01	(12.95)***
married			6.47	(19.13)***
married, with children			1.20	(2.47)*
has children			0.67	(1.71) <sup>†</sup>
children in the hh			-2.32	(-5.38)***
secondary <sup>b</sup>			0.96	(3.36)***
tertiary <sup>b</sup>			1.65	(4.90)***
trust			1.95	(37.41)***
health problems			-10.45	(-79.38)***
hh income (log, ppp)			2.79	(16.95)***
missing income: dk			0.18	(0.52)
missing income: refusal			0.73	(1.71) <sup>†</sup>
work values			1.49	(9.87)***
with parents			-0.96	(-2.87)*
family support			4.03	(16.21)***
UNEMPL. RATE <sup>c</sup>			-0.08	(-0.65)
WORK ETHICS <sup>c</sup>			-19.36	(-5.01)***
FAMILY TIES <sup>c</sup>			5.82	(1.14)
FAMILY SUPPORT <sup>c</sup>			2.42	(0.76)
GDP <sup>c</sup>			0.14	(2.39)*
EX-SOVIET UNION <sup>c</sup>			-6.44	(-3.95)***
Constant	47.46	(28.13)***	40.90	(29.02)***
<b>Random effects:</b>				
country RI	9.06	†	3.03	†
RS: unemployment	10.10	†	3.50	†
individual-level error	26.15	†	23.07	†
<i>N</i>	49238		49238	
<i>AIC</i>	461405.8		449038.8	

Source: *European Values Study, 2008*

<sup>†</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*\*  $p < 0.001$ ; *t* statistics in parentheses

† standard deviation of the random effect is at least 2 x larger than its standard error

For random effects standard deviations are presented; RS - random slope, RI - random intercept

<sup>a</sup> reference category is employment (full-time, part-time and self-employed)

<sup>b</sup> reference category is primary and vocational education

<sup>c</sup> country-level variables

Table 4 shows the results of null and basic model. Null model is a basically empty model, containing only intercept and random coefficients. Significant random effects justify the use of multilevel methodology. AIC (Akaike Information Criterion) of the null model serves as a benchmark for assessing the fit of subsequent (nested) models.

The basic model in the second column of table 4 presents the results of estimation accounting for individual- and country level control variables. The model represents a better fit than the null model: both random intercept and random slope largely decrease, and AIC values

indicate a significant improvement of model fit ( $\chi^2(28) = 38\ 109.4, p(\chi^2) = 0.000$ ).

Results of the basic model are consistent with the literature. Unemployed are on average almost 3% less happy than employed, and in the western Europe - over 8%. Well-being changes with age, forming a known U-shaped curve. Marriage, education, household income and social trust are associated with higher well-being. On the other hand, having children in the household and experiencing health problems corresponds to lower psychological well-being. Living in a country with higher GDP raises well-being, while living in the former Soviet Union - lowers it.

Moreover, people declaring stronger work values are on average happier, although living in a country with stronger work ethics decreases happiness. Living with parents corresponds to lower well-being, whereas declaring the norm for inter-family support - with higher (on the country level these two variables have no significant effect).

Let's now move to results of estimations relevant for testing above formulated hypotheses (table 5). Model 3 informs how does the effect of unemployment on well-being vary according to the country unemployment rate. AIC value in model 1 is higher than in basic model, which indicates that accounting for the unemployment rate increases the error of the prediction. Still, the significant and positive coefficient ("unemployed x UNEMPL. RATE<sup>c</sup>") indicates, consistently with the literature, that higher unemployment makes the effect of own unemployment more positive, or rather - less negative.

Models presented in further columns of table 5 account, except from the unemployment rate, also for individual work values and country work ethics (model 4), strength of family values measured by co-residence (model 5), declared norm for intergenerational support (model 6) and all above mentioned factors (model 7). The full model offers the best fit: better than the basic model ( $\chi^2(7) = 18.6, p(\chi^2) = 0.01$ ) and than model 3 accounting for the country unemployment rate ( $\chi^2(6) = 20.3, p(\chi^2) = 0.002$ ).

What do the results tell us about the cross country differences in the situation of unemployed? The "stigma hypothesis" postulates that in conditions of high unemployment the nature of norms concerning employment changes: unemployment becomes more easily acceptable, normal and justified behavior. The results of model 4 inform that the postulated change of norms is not related to work values. As we have seen in table 3, there is no correlation between country unemployment rate and country work ethics. It is not true that in

Table 5: Regression of well-being on country unemployment rate, work ethics and family ties.

	Model 3	Model 4	Model 5	Model 6	Model 7
	Unemployment rate	Work ethics	Family values (1)	Family values (2)	Full model
unemployed <sup>a</sup>	-2.89	-3.01	-3.59	-3.20	-3.72
unemployed x WEST	-4.55	-4.49	-1.46	-3.62	-1.48
unemployed x UNEMPL. RATE <sup>c</sup>	0.19	0.20	0.23	0.18	0.23
unemployed x work ethics		-0.78			-0.96
unemployed x WORK ETHICS <sup>c</sup>		0.44			-0.87
unemployed x with parents			-0.65		-0.68
unemployed x FAMILY TIES <sup>c</sup>			13.32		13.11
unemployed x family support				1.28	1.37
unemployed x FAMILY SUPPORT <sup>c</sup>				2.21	0.89
woman				0.80	0.80
housewife <sup>a</sup>				2.13	2.16
retired <sup>a</sup>				2.61	2.63
other empl. status <sup>a</sup>				1.97	1.94
age	-0.11	-0.11	-0.11	1.95	1.94
age <sup>2</sup>	0.01	0.01	0.01	-0.11	-0.11
married	6.46	6.46	6.46	0.01	0.01
married, with children	1.19	1.20	1.19	6.46	6.46
has children	0.67	0.67	0.66	1.18	1.18
children in the hh	-2.32	-2.32	-2.32	0.67	0.66
secondary <sup>b</sup>	0.96	0.97	0.96	-2.31	-2.30
tertiary <sup>b</sup>	1.65	1.66	1.66	0.97	0.98
trust	1.95	1.95	1.95	1.66	1.67
health problems	-10.45	-10.45	-10.45	1.95	1.95
hh income (log, ppp)	2.79	2.79	2.79	-10.45	-10.45
missing income: dk	0.18	0.18	0.17	2.80	2.79
missing income: refusal	0.74	0.73	0.74	0.18	0.16
work values	1.49	1.55	1.49	0.74	0.73
with parents	-0.96	-0.96	-0.88	1.47	1.56
family support	4.03	4.04	4.03	-0.96	-0.88
UNEMPL. RATE <sup>c</sup>	-0.09	-0.09	-0.09	4.01	4.02
WORK ETHICS <sup>c</sup>	-19.35	-19.42	-19.34	-0.09	-0.09
FAMILY TIES <sup>c</sup>	5.83	5.82	5.52	-19.33	-19.39
FAMILY SUPPORT <sup>c</sup>	2.44	2.44	2.46	5.85	5.53
GDP <sup>c</sup>	0.14	0.14	0.14	(1.15)	0.77
EX-SOVIET UNION <sup>c</sup>	-6.43	-6.43	-6.44	(0.78)	2.45
Constant	40.90	40.63	40.90	(2.37)*	0.14
				(-3.96)***	-6.45
				(29.02)***	35.20
				(4.93)***	(4.86)***
<b>Random effects:</b>					
country RI	2.80	2.89	2.54	2.88	2.69
RS: unemployment	3.49	3.49	3.49	3.49	3.49
individual-level error	23.08	23.07	23.07	23.07	23.07
<i>N</i>	49238	49238	49238	49238	49238
<i>AIC</i>	449040.5	449037.2	449031.8	449033.0	449020.2

Source: European Values Study, 2008

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*\*  $p < 0.001$ ;  $t$  statistics in parentheses; for random effects standard deviations are presented; RS - random slope, RI - random intercept;

† standard deviation of the random effect is at least 2 x larger than its standard error

<sup>a</sup> reference category is employment (full-time, part-time and self-employed); <sup>b</sup> reference category is primary and vocational education; <sup>c</sup> country-level variables

high-unemployment countries people stop believing that, e.g. it is “*humiliating to receive money without having to work for it*” or that “*people who don’t work turn lazy*”. In model 4 (table 5) adding work values and work ethics does not improve the model fit (compared to model 3, table 5), and both coefficients are insignificant. However, inspection of the full model informs that people with stronger work values experience lower well-being as unemployed. Summing up, whereas values and experienced dissonance or feeling of guilt affect well-being of unemployed, country work ethics (and related social pressure) have no effect.

Second hypothesis postulated that strong family ties rise the well-being of unemployed. Among the two analyzed measures, country-level co-residence of unemployed adults with their parents has such positive effect: in countries where the family ties are stronger the well-being of unemployed is higher. However, there is no effect at the individual level: unemployed who live with their parents (“unemployed x with parents”) are on average neither more nor less happy than other unemployed. This suggests, that the strength of family ties and not the co-residence itself is the crucial factor here. On the other hand, the declared norm for family support has an effect at individual level. Unemployed declaring stronger norms for inter-family support have higher well-being. At the same time, at the country level no effect is observed.

The strength of family ties is related to the well-being of unemployed, but the relationship is independent from the effect of unemployment rate. In models 5 and 7 the interaction of own unemployment with country unemployment rate remains significant. Therefore, we find no support for the claim that stronger family ties explain the lower psychological cost of own unemployment in high-unemployment countries.

However, results of models 5-7 allow us understanding different regularity. In these models the difference between eastern and western Europe in terms of well-being of the unemployed became insignificant. This suggests that weaker family ties are the source of lower well-being of the unemployed in the western Europe.

### **4.3 Robustness checks**

**Additional analysis accounting for social expenditures** An additional analysis was performed including in the model a country-level variable measuring the level of public expendi-

tures on labor market policies<sup>13</sup>. The data is available for 24 out of 36 analyzed countries<sup>14</sup>. However, reducing the sample and excluding a large part of eastern-European and many of high-unemployment countries results in insignificant interactions of own unemployment with unemployment rate, family ties and expenditures. Insignificant coefficients are also obtained in analysis performed on a sample limited to countries for which expenditures are known, in a model not accounting for expenditures.

These results lead to two conclusions. First, currently too few data on labor market policies expenditures are available to assess their effect compared to unemployment rate, work values and family support. Secondly, in a sample limited to countries of the European Union, unemployment rate is not significantly related to the well-being cost of unemployment.

**Influential countries** I perform a test of how much the results depend on particular countries included in the sample. I do this by calculating *dfbetas*, which measure how much given coefficient changes after excluding given country<sup>15</sup>. In other words, *dfbetas* help detecting if any country is a source of instability of coefficients of interest. Results are shown in table 6.

Overall, *dfbetas* for the variables most important in the analysis are low: they never exceed 1 and only in case of five countries they exceed the cutoff value of 0.5 (Azerbaijan, France, Germany, Montenegro and Serbia). Estimation of the full model after excluding these countries (not shown, available upon request) gives results consistent with the ones presented above.

**Analysis for subgroups** Additional analysis concerns consistency of relationships between eastern and western Europe. The results (shown in table 7) inform that the discussed regularities take different shape in eastern and western European countries. In particular, in the West the psychological cost of unemployment depends more strongly on work values, and it does

---

<sup>13</sup>The data is provided by Eurostat as “Public expenditure on labor market policy measures; All LMP measures (categories 2-7). I use the data for 2008, corrected by price indexes for cross-country comparability.

<sup>14</sup>Unavailable are: Albania, Azerbaijan, Armenia, Bosnia and Herzegovina, Belarus, Georgia, Republic of Moldova, Montenegro, Russian Federation, Serbia, Switzerland and Ukraine.

<sup>15</sup>*Dfbetas* are calculated using the formula:  $dfbeta(j) = (b(j) - b(j)_i) / se(j)_i$ , where  $b$  is the baseline coefficient for variable  $j$ ,  $b_i$  - coefficient for the same variable  $j$  after excluding country  $i$ , and  $se_i$  - standard error of coefficient  $j$  after excluding country  $i$ . Since *dfbetas* are not formal statistics (no formal statistical test exists), therefore there is no strict cutoff value. As a rule, values above  $2/\sqrt{n}$  or  $3/\sqrt{n}$  are considered influential, and above 1 - strongly so. In case of this analysis, cutoff values are 0.5 ( $3/\sqrt{36}$ ) and 0.33 ( $2/\sqrt{36}$ )



Table 6: DFbetas for each country for the full model.

Country	unempl.	unempl. x UNEMPL. RATE	unempl. x work values	unempl. x WORK ETHICS	unempl. x co-residence	unempl. x FAM. TIES	unempl. x fam. supp.	unempl. x FAM. SUPP.
Albania	0.06	-0.07	0.14	-0.12	-0.33	-0.05	-0.12	0.07
Azerbaijan	0.19	-0.33	0.31	0.73	0.44	0.12	0.11	-0.09
Austria	0.07	0.11	0.18	0.24	-0.00	0.08	0.02	-0.20
Armenia	0.10	0.09	0.21	-0.02	-0.13	-0.13	-0.32	-0.12
Belgium	0.06	-0.02	0.01	-0.11	-0.14	0.08	-0.17	0.09
Bosnia Herzegovina	-0.11	-0.14	-0.43	0.09	0.30	-0.01	-0.14	-0.10
Bulgaria	-0.03	0.00	0.01	-0.12	0.07	-0.02	-0.01	0.06
Belarus	0.09	-0.15	-0.01	-0.08	0.18	0.17	-0.14	-0.11
Cyprus	0.04	-0.01	0.00	0.25	-0.01	0.26	-0.04	-0.14
Czech Republic	0.28	-0.09	-0.00	-0.05	-0.07	-0.18	-0.00	-0.06
Denmark	0.11	-0.01	0.11	0.06	-0.16	-0.01	0.03	-0.12
Estonia	-0.04	0.01	-0.06	0.01	-0.03	0.00	0.06	0.02
Finland	0.03	-0.00	-0.05	0.01	-0.07	0.01	0.08	0.02
France	-0.15	-0.20	-0.25	-0.29	0.18	-0.55	0.02	0.70
Georgia	0.05	-0.16	0.31	-0.11	0.19	-0.15	-0.11	-0.18
Germany	0.13	-0.15	0.01	-0.51	-0.10	0.33	0.26	0.08
Greece	0.03	0.05	-0.08	0.02	-0.34	0.06	-0.10	-0.06
Hungary	-0.35	-0.11	0.10	-0.38	0.04	-0.21	-0.28	0.45
Ireland	-0.05	0.00	-0.08	-0.02	0.13	0.04	-0.14	-0.00
Latvia	-0.48	0.20	-0.13	0.32	0.07	-0.02	0.03	0.17
Lithuania	0.04	0.02	-0.04	-0.00	-0.03	-0.01	-0.04	-0.02
Luxembourg	0.05	-0.01	-0.23	-0.07	0.25	-0.13	-0.16	-0.01
Malta	-0.10	0.18	0.02	0.23	0.16	-0.07	0.08	-0.20
Moldavia	-0.12	0.10	0.12	-0.03	0.13	0.08	-0.17	-0.09
Montenegro	0.13	0.49	0.53	0.13	-0.41	0.21	-0.30	-0.17
Netherlands	-0.17	0.08	-0.12	0.21	0.01	-0.06	0.05	0.03
Poland	0.15	-0.11	0.09	-0.30	-0.04	0.09	0.20	0.12
Portugal	0.09	-0.12	-0.10	0.02	-0.04	-0.31	0.28	0.20
Romania	-0.01	-0.02	-0.19	0.03	-0.03	0.02	0.01	-0.03
Russian Federation	0.12	-0.04	0.12	-0.10	0.07	0.20	-0.09	-0.09
Serbia	0.23	0.11	-0.72	0.01	-0.44	0.18	0.55	-0.17
Slovak Republic	-0.02	0.00	0.12	-0.01	0.06	0.00	0.20	-0.00
Slovenia	-0.16	0.06	0.15	0.05	-0.17	0.04	0.08	0.02
Spain	-0.01	0.03	0.12	-0.10	0.26	-0.14	0.16	0.05
Switzerland	-0.07	0.05	-0.10	0.03	0.04	0.03	0.06	-0.02
Ukraine	-0.14	0.08	-0.03	0.05	-0.07	0.07	0.10	-0.06

Source: European Values Study, 2008

not vary along the country unemployment rate. In the East, the country-level strength of family ties (approximated by co-residence) has stronger effect on the well-being of unemployed. Concluding, although the results of analysis are robust with regard to influential countries, the observed regularities differ between eastern and western Europe.

Table 7: Full model separately for eastern and western Europe.

	Eastern Europe		Western Europe	
unemployed <sup>a</sup>	-4.03	(-3.48)***	-3.95	(-2.02)*
unemployed x UNEMPL. RATE <sup>c</sup>	0.23	(1.67) <sup>+</sup>	0.43	(0.96)
unemployed x work values	-0.53	(-0.85)	-2.01	(-1.99)*
unemployed x WORK ETHICS <sup>c</sup>	-1.36	(-0.22)	3.65	(0.48)
unemployed x with parents	-0.80	(-0.88)	0.84	(0.42)
unemployed x FAMILY TIES <sup>c</sup>	17.55	(1.95) <sup>+</sup>	12.60	(1.19)
unemployed x family support	1.08	(1.84) <sup>+</sup>	2.30	(2.27)*
unemployed x FAMILY SUPPORT <sup>c</sup>	-1.03	(-0.20)	1.32	(0.21)
...				
(other effects not shown)				
...				
<b>Random effects:</b>				
country RI	2.82	†	3.63	†
RS: unemployment	2.96	†	3.22	†
individual-level error	23.04	†	23.07	†
<i>N</i>	28929		20309	
<i>AIC</i>	263733.4		185207.3	

Source: European Values Study, 2008

<sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*\*  $p < 0.001$ ; *t* statistics in parentheses

for random effects standard deviations are presented; RS - random slope, RI - random intercept

† standard deviation of the random effect is at least 2 x larger than its standard error

I also check the consistency of the results for men and women (table 8). The results inform that observed regularities differ between these groups. Psychological cost of unemployment is higher for men, and depends more on work values and country family ties. For women, country unemployment rate is of higher importance.

Further test on a subgroup (results not shown) limits the sample to 27 countries where the unemployment rate does not exceed 10%. Most of the obtained relevant coefficient were insignificant. Although the well-being of unemployed is on average lower than of others, this effect does not vary according to the unemployment rate, strength of family ties, or work values. These results show how important for obtained results is including in the sample high-unemployment countries.

**Excluding possibly problematic variables - health and income** Additional estimation excluding health variable, household income and missing household income (excluding the five countries with over 30% of missing income data, results not shown, available upon request) gives results consistent with the ones presented above.

Table 8: Full model separately for men and women.

	Men		Women	
unemployed <sup>a</sup>	-4.94	(-3.96)***	-2.94	(-2.43)*
unemployed x WEST	0.46	(0.15)	-2.71	(-0.88)
unemployed x UNEMPL. RATE <sup>c</sup>	0.21	(1.52)	0.26	(1.89) <sup>+</sup>
unemployed x work values	-1.85	(-2.38)*	-0.05	(-0.07)
unemployed x WORK ETHICS <sup>c</sup>	-0.05	(-0.01)	-3.27	(-0.62)
unemployed x with parents	-0.02	(-0.02)	-0.98	(-0.84)
unemployed x FAMILY TIES <sup>c</sup>	17.99	(2.43)*	9.11	(1.28)
unemployed x family support	1.27	(1.69) <sup>+</sup>	1.54	(2.25)*
unemployed x FAMILY SUPPORT <sup>c</sup>	4.03	(0.90)	-0.95	(-0.21)
...				
(other effects not shown)				
...				
<b>Random effects:</b>				
country RI	2.58	†	2.98	†
RS: unemployment	3.61	†	3.49	†
individual-level error	22.99	†	23.11	†
<i>N</i>	21507		27731	
<i>AIC</i>	196031.7		253030.5	

Source: *European Values Study, 2008*

<sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*\*  $p < 0.001$ ; *t* statistics in parentheses

for random effects standard deviations are presented; RS - random slope, RI - random intercept

† standard deviation of the random effect is at least 2 x larger than its standard error

**Dependent variable** The two original dependent variables, happiness and life satisfaction are ordered variables and should be analyzed using ordered probit or logit method. However, estimation of a ordered logit multilevel model with random slope is associated with difficulties. For this reason I instead I test a logistic model (table 9) regressing happiness and life satisfaction (recoded into dummies, with cut-off points 1-2/3-4 and 1-7/8-10 respectively<sup>16</sup>) on the full set of predictors. Results are overall consistent with obtained for the percentage score variable used in the main analysis. Life satisfaction of unemployed is lower inn the West, and is related to work values and norms for family support. Happiness of unemployed varies with the country unemployment rate, country-level family ties, and declared norm for family support.

Secondly, I perform similar check using the linear model (in practice, use of OLS brings results similar to ordered logit, see: Ferrer-i-Carbonell and Frijters 2004). The results (not shown available upon request) are again consistent with the ones presented above: happiness of unemployed is related to the country unemployment rate and family ties, as well as declared norm for family support; life satisfaction of unemployed co-varies with their work values and norms of inter-family support.

<sup>16</sup>The cutoff points were chosen in such a way to approximate the 50%/50% division.

Table 9: Full model for happiness and life satisfaction. Logistic regression with cutoff points 1-2/3-4 for happiness, and 1-7/8-10 for life satisfaction.

	Happiness		Life satisfaction	
unemployed <sup>a</sup>	0.63	(-5.40) <sup>***</sup>	0.71	(-3.86) <sup>***</sup>
unemployed x WEST	0.87	(-0.60)	0.70	(-1.66) <sup>†</sup>
unemployed x UNEMPL. RATE <sup>c</sup>	1.03	(2.69) <sup>*</sup>	1.02	(1.58)
unemployed x work values	0.96	(-0.76)	0.90	(-2.03) <sup>*</sup>
unemployed x WORK ETHICS <sup>c</sup>	1.24	(0.56)	1.06	(0.15)
unemployed x with parents	0.88	(-1.31)	0.95	(-0.58)
unemployed x FAMILY TIES <sup>c</sup>	4.63	(2.96) <sup>*</sup>	1.34	(0.58)
unemployed x family support	1.11	(1.82) <sup>†</sup>	1.09	(1.65) <sup>†</sup>
unemployed x FAMILY SUPPORT <sup>c</sup>	1.08	(0.25)	1.27	(0.75)
...				
(other effects not shown)				
...				
<b>Random effects:</b>				
country RI	0.15	(-3.93) <sup>***</sup>	0.20	(-5.76) <sup>***</sup>
RS: unemployment	0.31	(-8.97) <sup>***</sup>	0.30	(-9.67) <sup>***</sup>
<i>N</i>	49483		49832	
<i>AIC</i>	36685.8		58571.4	

Source: European Values Study, 2008

<sup>†</sup>  $p < 0.10$ , <sup>\*</sup>  $p < 0.05$ , <sup>\*\*\*</sup>  $p < 0.001$ ; table shows odds ratios; *t* statistics in parentheses

for random effects standard deviations are presented; RS - random slope, RI - random intercept

<sup>†</sup> standard deviation of the random effect is at least 2 x larger than its standard error

## 5 Summary and discussion of results

The goal of present analysis was to investigate two mechanisms possibly standing behind the strongly supported empirical regularity that higher unemployment rate relatively improves the well-being of unemployed.

The first hypothesis concerned work values and country work ethics. Following the “stigma hypothesis”, I wanted to check if the change of work values may be considered the factor mediating the relationship between country unemployment rate and the psychological cost of being unemployed. The results show that on a country level the unemployment rate is not correlated with country work ethics, which however does not exclude that *within a country* the rise of unemployment is associated with shift of values.

Unemployed with stronger work values have lower well-being, however country work ethics is not related to the psychological cost of unemployment. This does not falsify the “stigma hypothesis”, but makes it more precise. Apparently, the possible re-definition associated with high unemployment rate concerns not so much the values (perceived obligations of individual) but - probably - information. It is plausible, that in conditions of high unemployment people still recognize both the obligation to work and the internal value of it, but they perceive the conditions as much more difficult. In other words, high unemployment does not

necessarily stop people believing in the value of work. Instead, it may make them more realistic concerning the chances of finding it. This suggests that the “stigma effect” concerns not the perception of what is normal and appropriate, but rather the perception of what is justified by current conditions: rather information than values.

The second explored mechanism concerned family ties, and their possibly alleviating effect on the psychological cost of unemployment. The results show that indeed higher family support (approximated by the frequency of unemployed adults to co-reside with parents and by declared norms for family support) increases the well-being of unemployed. However, it is not a factor mediating the relationship between country unemployment rate and psychological cost of unemployment: including it in the regression model does not change the coefficient related to the unemployment variable. However, weaker family ties are apparently the cause of the higher psychological cost of unemployment in western European countries. These results stress the importance of the informal family support for the well-being of deprived groups, and they suggest that the strength of family ties may be an important sphere of social policies intervention.

## References

- Aassve, A., Billari, F. C., Mazzucco, S., and Ongaro, F. (2002). Leaving home: a comparative analysis of ECHP data. *Journal of European Social Policy*, 12(4):259–275.
- Arslan, M. (2001a). A cross-cultural comparison of achievement and power orientation as leadership dimensions in three European countries: Britain, Ireland and Turkey. *Business Ethics: A European Review*, 10(4):340–345.
- Arslan, M. (2001b). The work ethic values of protestant British, catholic Irish and muslim Turkish managers. *Journal of Business Ethics*, 31:321–339.
- Blanchflower, D. G. and Oswald, A. J. (2008). Hypertension and happiness across nations. *Journal of Health Economics*, 27(2):218–233.
- Bonini, A. (2008). Cross-national variation in individual life satisfaction: Effects of national wealth, human development, and environmental conditions. *Social Indicators Research*, 87:223–236.
- Brereton, F., Clinch, J. P., and Ferreira, S. (2008). Employment and life-satisfaction: Insights from Ireland. *The Economic and Social Review*, 39(3):207–234.
- Bryk, A. S. and Raudenbush, S. W. (1992). *Hierarchical Linear Models: Applications and Data Analysis Methods*. Sage Publications, Newbury Park, London, New Dehli.
- Clark, A. (2003). Unemployment as a social norm: Psychological evidence from panel data. *Journal of Labor Economics*, 21(2):323–351.

- Clark, A. E., Knabe, A., and Rätzl, S. (2009). Boon or bane? Others' unemployment, well-being and job insecurity. *IZA Discussion Papers (Institute for the Study of Labor)*, 4210.
- Clark, A. E. and Oswald, A. J. (1994). Unhappiness and unemployment. *Economic Journal*, 104(424):648–59.
- Diener, E., Napa-Scollon, C. K., Oishi, S., Dzokoto, V., and Suh, E. M. (2000). Positivity and the construction of life satisfaction judgments: Global happiness is not the sum of its parts. *Journal of Happiness Studies*, 1:159–176.
- Easterlin, R. A. (1974). Does economic growth improve the human lot? Some empirical evidence. In David, P. A. and Reder, M., editors, *Nations and Households in Economic Growth*, pages 89–125. New York: Academic Press.
- Eggebeen, D. J. and Davey, A. (1998). Do safety nets work? The role of anticipated help in times of need. *Journal of Marriage and the Family*, 60(4):939 – 950.
- Eisenberg, P. and Lazarsfeld, P. (1938). The psychological effects of unemployment. *Psychological Bulletin*, 35(6):358 – 390.
- EVS Foundation/Tilburg University (2010). European values study 2008, 4th wave, integrated dataset. Technical report, CEPS/ Insead, Luxembourg.
- Ferrer-i-Carbonell, A. and Frijters, P. (2004). How important is methodology for the estimates of the determinants of happiness? *Economic Journal*, 114(497):641–659.
- Gerlach, K. and Stephan, G. (1996). A paper on unhappiness and unemployment in Germany. *Economics Letters*, 52(3):325–330.
- Helliwell, J. F. (2003). How's life? Combining individual and national variables to explain subjective well-being. *Economic Modelling*, 20(2):331 – 360. Henry Special Issue.
- Helliwell, J. F. and Putnam, R. D. (2004). The social context of well-being. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, 359(1449):1435–1446.
- Hessami, Z. (2010). The size and composition of government spending in Europe and its impact on well-being. *Kyklos*, 63(3):346–382.
- Kahneman, D. and Krueger, A. B. (2006). Developments in the measurement of subjective well-being. *Journal of Economic Perspectives*, 20(1):3–24.
- Kalmijn, M. (2010). Country differences in the effects of divorce on well-being: The role of norms, support, and selectivity. *European Sociological Review*, 26(4):475–490.
- Kalmijn, M. and Saraceno, C. (2008). A comparative perspective on intergenerational support – responsiveness to parental needs in individualistic and familialistic countries. *European Societies*, 10(3):479–508.
- Lin, N., Ensel, W. M., Simeone, R. S., and Kuo, W. (1979). Social support, stressful life events, and illness: A model and an empirical test. *Journal of Health and Social Behavior*, 20(2):108–119.
- Lucas, R. E., Clark, A. E., Georgellis, Y., and Diener, E. (2004). Unemployment alters the set point for life satisfaction. *Psychological Science*, 15(1):8–13.

- Luechinger, S., Meier, S., and Stutzer, A. (2008). Why does unemployment hurt the employed? Evidence from the life satisfaction gap between the public and private sectors. *Public Policy Discussion Papers (Federal Reserve Bank of Boston)*, No. 08-1.
- Luke, D. A. (2004). *Multilevel Modelling*. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-143. Sage, Thousand Oaks, CA.
- Michau, J.-B. (2009). Unemployment insurance and cultural transmission: Theory and application to European unemployment. *CEP Discussion Papers (Centre for Economic Performance, LSE)*, dp0936.
- Ouweneel, P. and Veenhoven, R. (1991). Cross-national differences in happiness. Cultural bias or societal quality? In Bleichrodt, N. and Drenth, P., editors, *Contemporary issues in cross-cultural psychology*, pages 168–184. Swets & Zeitlinger, Amsterdam, The Netherlands.
- Peiró, A. (2006). Happiness, satisfaction and socio-economic conditions: Some international evidence. *Journal of Socio-Economics*, 35(2):348 – 365. The Socio-Economics of Happiness.
- Pittau, M., Zelli, R., and Gelman, A. (2010). Economic disparities and life satisfaction in European regions. *Social Indicators Research*, 96:339–361.
- Schimmack, U., Krause, P., Wagner, G., and Schupp, J. (2010). Stability and change of well being: An experimentally enhanced latent state-trait-error analysis. *Social Indicators Research*, 95:19–31.
- Schneider, L. and Schimmack, U. (2009). Self-informant agreement in well-being ratings: A meta-analysis. *Social Indicators Research*, 94:363–376.
- Shields, M. A. and Price, S. W. (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.
- Stephens, A. and Wardle, J. (2005). Positive affect and biological function in everyday life. *Neurobiology of Aging*, 26(1):108–112.
- Stevenson, B. and Wolfers, J. (2008). Economic growth and subjective well-being: Reassessing the Easterlin paradox. *NBER Working Paper*, No. W14282.
- Theodossiou, I. (1998). The effects of low-pay and unemployment on psychological well-being: A logistic regression approach. *Journal of Health Economics*, 17(1):85–104.
- Urry, H. L., Nitschke, J. B., Dolski, I., Jackson, D. C., Dalton, K. M., Mueller, C. J., Rosenkranz, M. A., Ryff, C. D., Singer, B. H., and Davidson, R. J. (2004). Making a life worth living. *Psychological Science*, 15(6):367–372.
- van Hoorn, A. and Maseland, R. (2008). Weber, work ethic and well-being. *Papers on Economics of Religion (Department of Economic Theory and Economic History of the University of Granada)*, 08/07.
- van Reekum, C. M., Urry, H. L., Johnstone, T., Thurow, M. E., Frye, C. J., Jackson, C. A., Schaefer, H. S., Alexander, A. L., and Davidson, R. J. (2007). Individual differences in amygdala and ventromedial prefrontal cortex activity are associated with evaluation speed and psychological well-being. *Journal of Cognitive Neuroscience*, 19(2):237–248.
- Warr, P. and Jackson, P. (1987). Adapting to the unemployed role: A longitudinal investigation. *Social Science & Medicine*, 25(11):1219 – 1224.

- Weber, M. (1958). *The Protestant ethic and the spirit of capitalism*. New York: Charles Scribner's Sons.
- Winkelmann, L. and Winkelmann, R. (1998). Why are the unemployed so unhappy? Evidence from panel data. *Economica*, 65(257):1–15.
- Winkelmann, R. (2009). Unemployment, social capital, and subjective well-being. *Journal of Happiness Studies*, 10(4):421–430.









**CEPS**  
I N S T E A D

B.P. 48  
L-4501 Differdange  
Tél.: +352 58.58.55-801  
[www.ceps.lu](http://www.ceps.lu)