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**PSYCHOLOGICAL COSTS OF CURRENCY
TRANSITION: EVIDENCE FROM EURO
ADOPTION**

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PSYCHOLOGICAL COSTS OF CURRENCY TRANSITION: EVIDENCE FROM EURO ADOPTION[†]

Abstract

We analyze individual levels of life satisfaction in Slovakia, after that country adopted the Euro, following a spirited debate. We gauge the psychological cost of transition to the new currency by comparing individual life satisfaction, not only before and after Euro introduction, but by comparison with individuals with similar characteristics in the neighboring Czech Republic, which did not adopt the Euro. Both countries were economically and politically integrated for decades, and share similar macroeconomic indicators just before the currency change in Slovakia. We find evidence of substantial psychological costs of currency transition, which are especially important for the old, the unemployed, those with low education and in households with children. We believe these results suggest the importance of information and enlightened debate before a sweeping change in economic context such as the adoption of a new currency.

JEL Classification: E52, F55 and I31

Keywords: currency transition, Czech Republic, Euro, Slovakia and subjective well-being

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1. Introduction

Currency is to the economy what language is to social life. Ubiquitous, they both give meaning and assign value to exchanges. Changing one's language or the currency we use may entail considerable psychological costs and affect well-being. European countries considering the adoption of the Euro as the new currency have often met with strong popular opposition. When referenda have been called on the issue, the go-ahead for entering the Eurozone has often failed to pass the test.¹ The transition to a new currency entails psychological costs that are not necessarily rational or well-founded, but are nonetheless important, and may be felt deeply by certain sectors of the population. However difficult, gauging the extent and distribution of those costs is a relevant policy issue.

The costs of transition to a new currency are diverse. First, individuals tend to think of currency in nominal rather than real terms, that is, they deal with observed prices rather than purchasing power, as pointed out by Shafir et al. (1997). As such, when a new currency is introduced there is a diffuse perception of price changes, with associated psychological costs.² Gamble (2006) shows evidence confirming that this “monetary illusion” effect is more prevalent for lower-priced items. The second cost associated with the transition to a new currency is rescaling, involving the conversion of prices from the new currency to the old one, as suggested by Marques and Dehaene (2004), and Marques (2007).³ Mussweiler and Englich (2003) find

¹ The topic of Euro adoption remains important and timely. For instance, facing popular resistance prior to the Euro introduction, Baltic politicians spoke of a “geopolitical goal”, and suggested that “(...) this issue should be decided not among the population but among the real decision makers”. Poland, on the other hand, holds firmly to its own currency, and officials state they “can't imagine any government would want, or indeed could, steer Poland into the Eurozone without Poles accepting the move”. See *The Economist* (2012), *The Baltic Times* (2013), Fontanella-Khan and Milne (2013), and Gelzis (2013).

² See Amado et al. (2007), Hobijn et al. (2006), and Lotz and Rocheteau (2002).

³ This use of a currency as a benchmark for predicting prices in another currency is also known as anchoring bias, as in Tversky and Kahneman (1974). Also, Mussweiler and Strack (2003) find that people compare prices of products

evidence that the less familiar individuals are with the new currency, the more likely they are to be less accurate in predicting prices in the new currency. A third cost, relearning, is associated with the persistence in the consumer's memory of prices denominated in the old currency. This is a complex process, as mapping items to prices involves the long-term memory.⁴ Finally, in addition to the above "objective" costs associated with the transition to a new currency, there may be important subjective costs in terms of utility and well-being. Individuals build an emotional attachment to a currency, an attachment that can be measured in terms of additional economic value associated with the old currency, as empirically shown by Tyszka and Prybyszewski (2006).

Chadi (2015) finds solid evidence of a relationship between concerns about the Euro and life satisfaction in Germany, using survey data. We find evidence that is in line with these findings, while our paper provides three distinct contributions to the literature. First, we investigate changes in individual well-being in the wake of Euro adoption by conducting a "quasi-natural experiment" involving the Czech Republic and Slovakia, two countries that have chosen opposite paths vis-à-vis Euro adoption, after decades of deep political, economic, and social integration.⁵ Second, while existing studies assume a similar cost of currency adoption across all socioeconomic groups,⁶ we argue for and provide important evidence suggesting significant cost differences across gender, age, educational level, and other individual characteristics. Finally, this study contributes to the literature by filling a gap, which is the analysis of the impact of Euro adoption at the individual level in a new member state. This is especially important as new

in a single currency much more accurately than in different currencies, even if all the information, including exchange rates, is available.

⁴ So that relearning may be more costly than rescaling, as pointed out by Marques and Dehaene (2004) and Marques (2007).

⁵ Wunder et al. (2008) identify a negative impact of Euro adoption on happiness, in the case of German citizens in dire financial straits.

⁶ See Dowd and Greenaway (1993) and Wunder et al. (2008).

member states are more likely to confront the choice of adopting – or not – the common currency.

Our empirical findings suggest that the introduction of the Euro in Slovakia had important negative impacts on individual satisfaction with the economy. Furthermore, we present evidence that certain groups and sectors of the population do seem to be more vulnerable to the psychological costs of changing the currency. The most affected groups are the old, the unemployed, the poorly educated, and families with children. These differences should be considered in the design of information about policy changes in the future. Our suggestion is that unless information, debate, and participation are appropriately nourished, a sweeping policy move such as the adoption of a new currency will be resisted by specific population groups.

The paper is organized as follows. Sections 2 and 3 present data and the econometric model, and estimation results. The final section concludes.

2. Data and Econometric Model

To estimate the impact of Euro adoption on satisfaction, we use the difference-in-differences (DD) approach. It is meant to evaluate the average treatment effect of specific policies - also known as treatments - on different outcomes of interest. We first check a wide set social and economic indicators for Slovakia and the Czech Republic, and find that the two countries share similar paths immediately before and after the adoption of the Euro by Slovakia (see Table A1 in the Appendix). Slovakia and the Czech Republic thus share observable social, demographic, and economic characteristics, including population density, life expectancy, median age of the population, female to male ratio, age dependency ratio, and inequality as gauged by the Gini coefficient. Macroeconomic characteristics such as inflation, GDP growth,

and inward foreign direct investments show similar magnitudes. Furthermore, all indicators are relatively stable in both countries for the years under study. This suggests that any substantial changes in individual life satisfaction can likely be attributed to Euro adoption.

As suggested by Kahneman et al. (1997) and Dolan and Kahneman (2008), individual life satisfaction can be considered as a proxy to experienced utility. Cummis (1996) suggests that life satisfaction consists of several domains. In this paper we use as dependent variable an individual's satisfaction with the country's economic situation. To assess how satisfaction is affected by adhesion to the Euro, we compare individual satisfaction of Slovaks before and after the currency's introduction, using individuals from the Czech Republic with similar characteristics as a control group.⁷ Given the profound historical, social, and economic relationship between the Czechs and the Slovaks, the use of the former as a control group helps us to remove the effect of a variety of unobservables that would otherwise contaminate the results. Thus, we can confidently posit that both countries were hit by the 2008 crisis in an equivalent way, and considerable differences in levels of satisfaction between similar groups may be ascribed to the adoption of the Euro in Slovakia. The data are collected from the European Social Survey for the years 2008 and 2010, the years immediately before and after Slovakia's adhesion to the Euro, and include a total of around 7,000 observations. The survey is a repeated cross-section of individuals from Slovakia and the Czech Republic. The description of the variables and the summary statistics are in Tables A1 and A2 in the Appendix.

⁷ Wunder et al. (2008) apply the same approach for the Euro introduction in Germany. However, the authors do not test the differences across groups.

Our specification of interest is thus:

$$\begin{aligned}
 Satisfaction_{ijt} = & \beta_0 + \beta_1 y2010_t + \beta_2 Slovak_i + \alpha_{DD}(Slovak_i * y2010_t) + \mathbf{x}'_{ijt} \boldsymbol{\gamma} \\
 & + Region_j' \boldsymbol{\delta} + \varepsilon_{ijt}
 \end{aligned}
 \tag{Eq. (1)}$$

where subscripts i, j , and t stand for individual, region, and time, respectively. *Satisfaction* stands for satisfaction with the economy for each individual-year. *Slovak* is a dummy variable that equals 1 if the observation concerns a Slovak citizen, and 0 if it refers to a Czech citizen. *y2010* is a dummy variable that equals 1 for 2010. Thus, *Slovak*y2010* captures the average impact on the individual satisfaction of a Slovak in the year the Euro was introduced. The set of independent variables \mathbf{x} in Eq. (1) controls for individual characteristics including income – self-assessed, age, gender, education level, household size, urban, marital and employment statuses, and the sector of employment, including industry, finance, or other sectors.⁸ The default category is unemployed individuals. *Region* stands for a set of dummy variables, representing regional fixed effects in the Czech Republic and Slovakia. Finally, ε is a stochastic disturbance term. As usual, β_0 stands for the intercept, while β_1 considers the common year effect in both the treatment and control groups. β_2 represents the time-constant difference between the treatment and control groups. α_{DD} stands for the average treatment effect, the change in individual satisfaction with economic situation in the treatment group due to the Euro's introduction. $\boldsymbol{\gamma}$ is a vector of parameters of explanatory variables, \mathbf{x} . $\boldsymbol{\delta}$ is a vector of parameters capturing regional differences on satisfaction with economic situation.

The individual satisfaction score, *Satisfaction*, is measured on a Likert scale ranging from 0 (extremely dissatisfied) to 10 (extremely satisfied). In this case the ordered logit or probit would be an appropriate model. However, according to Ai and Norton (2003), the magnitude and

⁸ See Table A2 for further details.

standard errors of marginal effects of interaction terms in those models are not straightforward to compute. Ferrer-i-Carbonell and Frijters (2004) and Wooldridge (2002) provide evidence that the results from the ordered logit approach are comparable to ordinary least squares (OLS). Thus, we conduct the estimation of Eq. (1) above by OLS, which allows us to test the marginal effects and interpret them in an expeditious way. Eq. (1) is estimated with design and population size weights for each region and year. The design weights correct for sample selection bias, as different population groups have different likelihoods of being selected into any specific region's sample. The population size weights account for the population size of each country. By using these weights, the samples of the Czech Republic and Slovakia approach comparability.

We test how the introduction of the Euro in Slovakia affected individual satisfaction, and how this impact differs across socioeconomic groups. The null hypothesis to be tested is, for all k of interest:

$$H_0: \alpha_{DD}^k = 0 \quad \text{Eq. (2)}$$

We then test whether the population from specific groups is affected differently. With this purpose in mind, we estimate Eq. (1) separately for each group. The null hypothesis is that the estimates of two groups, k and m , are equal, that is:

$$H_0: \alpha_{DD}^k = \alpha_{DD}^m \quad \text{Eq. (3)}$$

Our test is performed using a seemingly unrelated estimation that combines parameter estimates for different groups and associated variance-covariance matrices.

When faced with economic change, socioeconomic groups, such as individuals with low income and low education levels, as well as the aged, may feel more constrained in their economic choices. These groups are more likely to form distinct expectations regarding the

economic situation, as argued in Puri and Robinson (2007), among others. Low income groups, for instance, are likely to suffer more directly from the insecurity associated with economic changes, as suggested by Linz and Semykina (2008, 2010). The elderly may fear for their savings, as in Lunt and Livingstone (1991), or fail to process the new information at a reasonable speed, as in Laroche et al. (2004). Also, older individuals may incur a higher psychological cost when converting prices into the new currency, as in Wunder et al. (2008), and have economic and political attitudes, e.g., support for democracy, competition, and income inequality, that are different from those of younger generations, as in Turkina and Surzhko-Harned (2014). Gender differences in preferences, in risk aversion, in behavior under uncertainty, and in the value attached to money have been documented in the literature, as in Croson and Gneezy (2009), Jonung (1986), Prince (1993), and Schubert et al. (1999), among others. The findings suggest that risk/uncertainty may be considered as an especially important cost for females. In addition, women may tend to consider money in terms of its purchasing power, while men value the power and status that money provides, as suggested in Prince (1993).

2.1. Common Trend Assumption

The key assumption of the difference-in-differences approach is that of a common trend, that is, the assumption that the outcome variable in the treatment and the control group would move in a similar way if no treatment occurred. In our case, that amounts to assuming that the level of individual satisfaction with the economic situation would follow a similar path in Slovakia and the Czech Republic, were the former not to have adhered to the Euro.⁹ To test the

⁹ So, even though the Slovaks enjoy higher satisfaction with the economic situation than the Czechs before the treatment, this difference is not a concern as long as the expected trend in the dependent variable is the same in the absence of policy intervention. Before testing for the common trend assumption, we check whether the characteristics of individuals in treatment and control groups do not differ systematically, that is, we test for

common trend assumption, we apply the difference-in-differences approach for the periods before the actual treatment occurred.¹⁰ Given that Slovakia adopted the Euro in 2008, we analyze the 2006 and 2008 samples.¹¹ As shown in Table A4, the difference-in-differences estimator is not statistically significant, suggesting no difference in individual satisfaction in Slovakia and the Czech Republic in 2006 and 2008. This supports the common trend assumption.

3. Results

The estimation results are in Table 1. Several facts stand out. First, although Slovaks enjoy higher average satisfaction levels when compared to Czechs, as the positive coefficient on *Slovak* suggests, this effect is suddenly reversed in 2010, the year Slovakia adopted the Euro, as noted by the negative coefficient on *Slovak*y2010*. The sign and significance of the coefficient α_{DD} suggests a clear and quantitatively meaningful decline in individual satisfaction with the economic situation following the introduction of the Euro. The change completely wipes out the earlier difference between Slovak and Czech average levels of individual satisfaction. After Euro adoption in Slovakia, we cannot reject the null hypothesis $H_0: \alpha_{Slovak} = -\alpha_{Slovak*y2010}$ that the Slovak and Czech satisfaction with the economic situation becomes statistically the same.

differences in the mean of the sample characteristics for Czech and Slovak individuals, before policy intervention. As Table A3 in the Appendix shows, socioeconomic characteristics of individuals from both countries are very similar. Large p-values suggest that the characteristics of individuals from the two countries do not statistically differ in terms of age, education, self-employment, marital status, income, household size, type of settlement, employment in the public sector, and employment or self-employment in industry, finance, or social sectors, as detailed in Table A2. We detect some differences in terms of gender, employment status, other work, and employment or self-employment in construction or agriculture, and in trade, tourism, transport, and communications.

¹⁰ See Beatty and Shimshack (2011).

¹¹ Since the survey of 2006 was not conducted in the Czech Republic, we replace it with the survey of 2004. We show that this is a reasonable substitution by demonstrating that the level of satisfaction in the Czech Republic is the same between 2004 and 2008, conditional on a set of covariates. Results are available upon request.

Regarding the controls, age presents a U shaped relationship with economic satisfaction, while education, marital status, and income all affect satisfaction positively. Larger households are associated with lower satisfaction levels. Gender, whether employed or self-employed, and the sector of employment do not seem to have a specific association with individual satisfaction.

Table 1
Results for Individual Satisfaction with the Economic Situation
OLS estimates

Explanatory Variable	Coefficient	S.E.
y2010	-0.176**	(0.068)
Slovak	1.039***	(0.143)
Slovak*y2010 (α_{DD})	-1.048***	(0.124)
Male	0.010	(0.072)
Age	-0.038***	(0.012)
Age ² /1000	0.289**	(0.112)
Higher-level Education	0.297***	(0.082)
Employed	0.322	(0.330)
Self-employed	0.354	(0.392)
Out of labor force	0.318*	(0.155)
Married	0.255**	(0.091)
High Income	0.902***	(0.075)
Household Size	-0.069**	(0.025)
Urban	-0.078	(0.073)
Public Sector	0.045	(0.102)
Industry	-0.071	(0.279)
Finance	0.194	(0.322)
Construction, Agriculture	-0.189	(0.327)
Trade, Tourism, Transport, Communications	-0.053	(0.285)
Education, Research, Health, Social Sectors	0.005	(0.325)
Constant	3.904***	(0.344)
Regional fixed effects	yes	
R ²	0.106	
# of obs.	6,624	

Note: S.E. stands for the robust standard errors. * significant at 10%, ** significant at 5%, ***significant at 1%.

We next examine several subsamples, with a view to delve further into how different groups, defined by demographic and economic characteristics, display differing patterns of satisfaction with Euro adoption. Results, which are clear and unequivocal, are presented in Table 2. First, all economic and demographic groups experience a decrease in reported individual satisfaction following Euro adoption in Slovakia. Second, and of more importance, older individuals and less educated individuals report significantly larger decreases in individual satisfaction. The elderly report four times the decrease in satisfaction as compared to their middle aged counterparts.¹² A similar four-fold decrease in satisfaction is observed in the low educated, as compared with the highly educated.¹³ These differences are very substantial and warrant reflection.

Table 2
Results for Group Satisfaction with the Economic Situation
OLS estimates

Groups	α_{DD}	S.E.	R ²	# of obs.	Test (H ₀ : $\alpha_{DD}^i = \alpha_{DD}^j$)	Prob.>Chi ²
Young	-0.175	(0.238)	0.107	785	$\alpha^{Young} = \alpha^{Middle\ aged}$	0.240
Middle aged	-0.513***	(0.134)	0.120	1,884	$\alpha^{Middle\ aged} = \alpha^{Old}$	0.000
Old	-2.084***	(0.304)	0.184	1,364	$\alpha^{Old} = \alpha^{Young}$	0.000
Female	-1.038***	(0.318)	0.115	3,633	$\alpha^{Female} = \alpha^{Male}$	0.670
Male	-1.095***	(0.165)	0.109	2,991		
Urban	-1.042***	(0.146)	0.111	4,342	$\alpha^{Urban} = \alpha^{Rural}$	0.680
Rural	-0.996***	(0.113)	0.122	2,282		
Employed	-0.658***	(0.134)	0.094	3,121	$\alpha^{Employed} = \alpha^{Unemployed}$	0.020
Unemployed	-1.588***	(0.351)	0.097	317		
Married	-1.033***	(0.121)	0.109	3,616	$\alpha^{Married} = \alpha^{Unmarried}$	0.954
Unmarried	-1.026***	(0.169)	0.122	3,008		
Higher-level Educ.	-0.362*	(0.187)	0.117	1,177	$\alpha^{Higher-level\ Educ.} = \alpha^{Low-level\ Educ.}$	0.000
Low-level Educ.	-1.236***	(0.144)	0.102	5,447		
With Children	-1.225***	(0.188)	0.121	2,668	$\alpha^{With\ Children} = \alpha^{Without\ Children}$	0.039
Without Children	-0.898***	(0.107)	0.105	3,932		

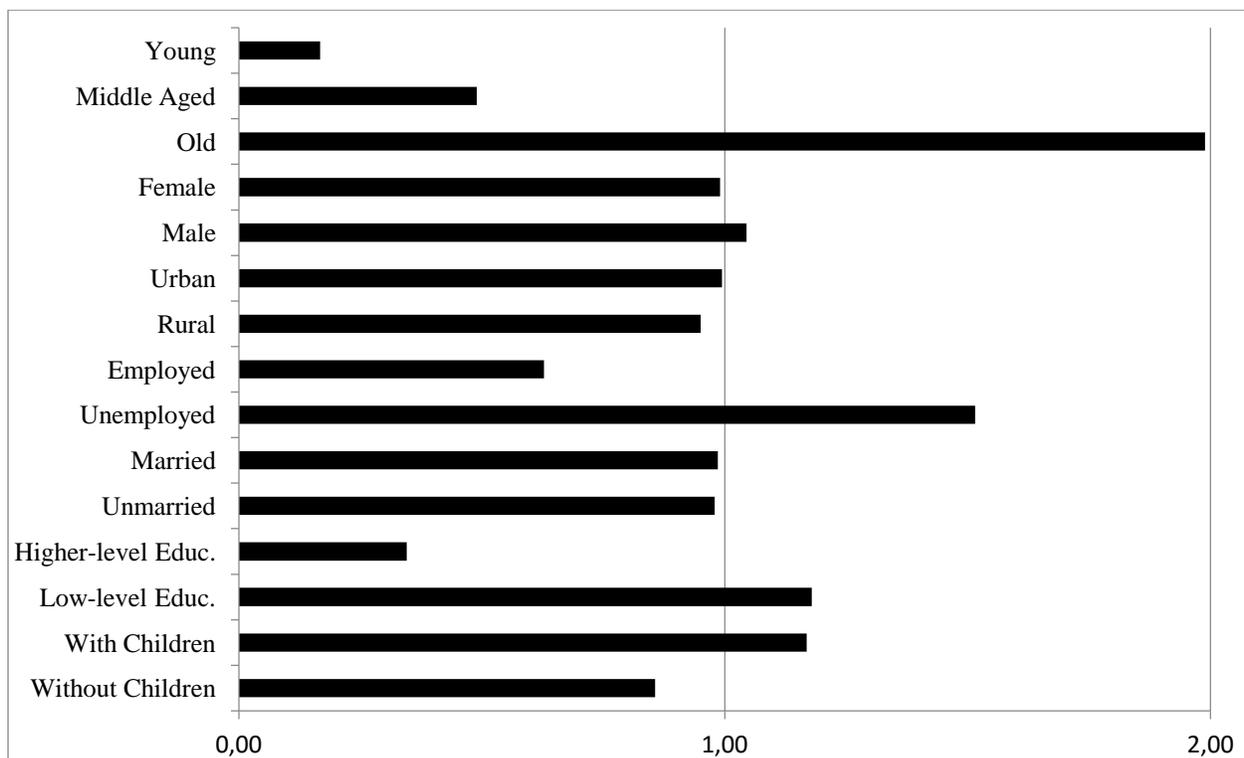
Note: S.E. stands for the robust standard errors. Test corresponds to test within a specific group. * significant at 10%, ** significant at 5%, *** significant at 1%.

¹² Interestingly, while the middle aged seem to experience a significant fall in individual satisfaction, this is not statistically different – at standard significance levels – from the fall in satisfaction by the young.

¹³ Moreover, in line with the results in Table 1, those living in larger households and those unemployed do seem to experience larger decreases in satisfaction, but the difference to their counterparts is not statistically significant.

Figure 1 presents the estimated changes in reported satisfaction with the economic situation for the different groups, and compares it to the overall estimate from Table 1. We can verify that the elderly experience a decrease in satisfaction that is on average twice that of the population at large. The unemployed experience a fall in satisfaction that is 1.52 times that of the population, the less educated 1.18 times, and those with children 1.17 times.

Figure 1
Relative Size of Decrease in Satisfaction for Specific Groups
and the Slovak Population as a Whole



Note: The figure reports the quotient $\alpha_{DD}^i / \alpha_{DD}^{overall}$, where the superscript i stands for the particular socioeconomic group. The line at 1 thus allows for easy comparison between the group and the overall population effect.

To test the robustness of our results, we also apply the difference-in-differences matching approach.¹⁴ In particular, we use the exact nearest neighbor matching methodology, i.e. for each observation in treatment group, we find the single closest neighbor in the control group based on

¹⁴ See Blundell and Costa-Dias (2000), and Martins, Novo, and Portugal (2009).

individual characteristics.¹⁵ Individual characteristics that are used as matching covariates are gender, age, employment, income, and the type of household. Since our analysis is based on cross-sectional data, the difference-in-differences matching is conducted in three steps. First, we match individuals from Slovakia before and after the treatment. Second, individuals from the Czech Republic, before and after the treatment, are also matched. Finally, the samples of matched individuals from the first and second step are used in the difference-in-differences matching approach to estimate the average treatment effect on treated (ATT). The results are presented in Table 3, and show that the sign, significance, and magnitude of ATT from the matching difference-in-differences approach also confirm the finding from OLS. To check the quality of matching we apply balancing tests, as reported in Table 3. Large p-values for these tests indicate that there are no significant differences in means of covariates between treatment and control groups at any of the three steps of the matching.

Table 3
Results from the Difference-in-Differences Matching and Balancing Tests

Dep. variable: Satisfaction with economic situation				Average treatment effect on treated (ATT)
2008 to 2010				-0.943*** (0.116)
Balancing tests				
Covariate	Mean of Treated	Mean of Control	P-value of difference	
Male	0.386	0.380	0.703	
Age	50.563	50.076	0.402	
Employed	0.369	0.368	0.944	
High income	0.572	0.573	0.946	
Urban	0.544	0.542	0.946	

Note: Standard error is in parentheses. *** significant at 1%.

¹⁵ We also applied the five nearest neighbors matching and the kernel density matching. The results are robust to these approaches, and are available upon request.

4. Conclusion

The economics and psychology literature has identified objective and subjective costs associated with the transition to a new currency. This paper estimates the changes in individual life satisfaction following the Euro adoption for the population of Slovakia as a whole as well as for different population groups. We do so by matching these changes among Slovaks with those occurring in the Czech Republic in the same period. Given the long historical, social, and economic links between the two countries, and the contrasting choices as far as the Euro adoption, we believe this is the ideal setting for such a test. Controlling for a broad set of socioeconomic characteristics and carefully matching Czechs and Slovaks, we are thus able to infer the impact of transition to the Euro.

The overall response to the Euro adoption is negative. Virtually all population groups experience a decline in individual satisfaction with the economic situation following the adoption of the new currency by Slovakia. More interestingly, the old, the unemployed, the poorly educated, and those with children suffer much more from the adoption of the Euro. Older individuals report decreases in satisfaction that are about twice large as those estimated for the population as a whole. Our results suggest that before the adoption of a new currency more should be done in terms of public information and debate targeted at these specific groups. We expect that future research is able to uncover the nature – objective or subjective – of the psychological costs of transition to a new currency. This may help policy-makers understand the resistance – sometimes deemed “irrational” – to Euro adoption, especially in countries that have recently gained accession to the European Union.

Appendix

Table A1
Selected Socio-demographic and Macroeconomic Indicators
in the Czech Republic and Slovakia, 2006-2010

Indicator	2006		2008		2010	
	CZ	SK	CZ	SK	CZ	SK
Satisfaction with economic situation, sample mean	n.a.	4.731	3.631	4.731	3.472	3.546
Sociodemographic characteristics						
Average population size, 1000 persons	10,269.1	5,391.4	10,424.3	5,406.6	10,519.8	5,430.1
Median age of population, years	38.9	35.6	39.1	36.2	39.4	36.9
Women per 100 men, persons	104.9	106	104.2	105.9	103.7	105.7
Gini coefficient	25.3	28.1	24.7	23.7	24.9	25.9
Macroeconomic characteristics						
Unemployment, %	7.1	13.5	4.4	9.6	7.3	14.5
GDP per capita, EUR	11,500	8,300	14,800	14,300	11,900	12,100
Real GDP per capita, EUR	10,900	7,700	11,700	11,400	9,000	8,900
Real GDP growth, %	6.7	8.3	2.0	5.6	2.2	4.1
Harmonized index of consumer prices (2005=100)	102.10	104.26	111.70	113.70	110.41	112.21
Government deficit, % of GDP	-2.4	-3.2	-2.2	-4.8	-2.1	-7.7
Inward FDI, flows as % of GDP	3.7	8.4	2.9	5.0	3.1	2.0
Outward FDI, flows as % of GDP	1.0	0.9	1.9	0.6	0.6	1.1
Export of goods and services per capita, EUR	7,700	7,000	9,500	9,500	9,900	9,800
Import of goods and services per capita, EUR	7,400	7,300	9,200	9,000	10,200	9,800
Nominal monthly gross wage, EUR	669.5	623.0	908.0	723.0	945.0	769.0
Real monthly gross wage, EUR	655.7	597.5	812.9	635.9	855.9	685.3
Nominal yearly gross wage, EUR	8,034.0	7,476.0	10,896.0	8,676.0	11,340.0	9,228.0
Real yearly gross wage, EUR	7,868.8	7,170.5	9,754.7	7,630.6	10,270.8	8,223.9

Source: Eurostat, European Social Survey

Table A2
Variables Description

Variable	Description
satisfaction with economic situation	on the whole how satisfied are you with the present state of the economy in [your country]? (0=extremely dissatisfied, 10=extremely satisfied)
male	gender of an individual (0=female, 1=male)
age	age of an individual
high education	education level of an individual (=1 for advanced vocational, lower tertiary education, and for higher tertiary education, =0 for less than lower secondary and for secondary education, based on ES-ISCED classification*)
employed	employment status (1=employed, 0=otherwise)
self-employed	employment status (1=self-employed, 0=otherwise)
out of labor force	(=1 if an individual is a student, or retired, or out of labor force)
married	marital status of an individual (1=married or in a legally registered civil union, 0=otherwise)
household size	household size, # of individuals
high income	self-placement income (=1 if an individual answered 3 or 4 to the question “which of the descriptions on this card comes closest to how you feel about your household’s income nowadays? (1=very difficult on present income, 2=difficult on present income, 3=coping on present income, 4=living comfortably on present income)”, 0=otherwise)
urban	area of residence (1=if an individual from urban area, 0=otherwise)
sector	stands for a set of dummy variables (=1 if an individual is employed or self-employed in industry (Sector 1), in finance (Sector 2), in construction or agriculture (Sector 3), in trade, tourism, transportation, or communication (Sector 4), and in education, research, health, or social sectors (Sector 5), respectively)
regional dummies	stands for a set of regional dummy variables in the Czech Republic and Slovakia based on the Nomenclature of Territorial Units for Statistics classification (NUTS2)
young/middle/old age groups	an individual is allocated into the particular group if he/she is below age 30, between age 30 and 45, and above age 64, respectively
with children	stands for a dummy variable (=1 if children live in a respondent’s household, 0=otherwise)

*ES-ISCED stands for the European Survey version of International Standard Classification of Education classification maintained by UNESCO, in which ES-ISCED I is less than lower secondary education level, ES-ISCED II is lower secondary, ES-ISCED IIIb is lower tier upper secondary, ES-ISCED IIIa is upper tier upper secondary, ES-ISCED IV is advanced vocational, ES-ISCED V1 is lower tertiary education (BA level), and ES-ISCED V2 is higher tertiary education (\geq MA level).

Table A3
Results for Differences in Socioeconomic Characteristics between
the Czechs and Slovaks, 2008

	CZ	SK	Difference	P-value of difference
Satisfaction with economic situation	3.729	4.832	-1.103	0.000
Male	0.491	0.415	0.076	0.005
Age	44.926	47.672	-2.746	0.137
Higher-level education	0.123	0.192	-0.069	0.166
Employed	0.503	0.429	0.074	0.016
Self-employed	0.083	0.076	0.007	0.601
Out of labor force	0.368	0.456	-0.088	0.008
Married	0.572	0.559	0.013	0.684
High Income	0.698	0.669	0.029	0.326
Household Size	3.006	2.990	0.016	0.954
Urban	0.694	0.689	0.005	0.960
Public Sector	0.382	0.439	-0.057	0.072
Industry	0.146	0.107	0.039	0.194
Finance	0.037	0.053	-0.016	0.300
Construction, Agriculture	0.089	0.062	0.027	0.041
Trade, Tourism, Transport, Communications	0.162	0.118	0.044	0.018
Education, Research, Health, Social Sectors	0.136	0.159	-0.023	0.274

Table A4
Results from the Counterfactual Difference-in-differences Approach
OLS Estimates

Explanatory Variable	Coefficient	S.E.
Year	0.010	(0.081)
Slovak	1.037***	(0.272)
Slovak* Year (α_{DD})	-0.007	(0.128)
Male	0.076	(0.071)
Age	-0.065***	(0.014)
Age ² /1000	0.601***	(0.112)
Higher-level Education	0.402***	(0.091)
Employed	0.504***	(0.164)
Self-employed	0.474**	(0.198)
Out of labor force	0.488***	(0.151)
Married	0.216**	(0.084)
High Income	0.890***	(0.077)
Household Size	-0.032	(0.019)
Urban	-0.148	(0.088)
Industry	-0.174**	(0.083)
Finance	-0.080	(0.129)
Construction, Agriculture	-0.154	(0.179)
Trade, Tourism, Transport, Communications	-0.177	(0.136)
Education, Research, Health, Social Sectors	-0.024	(0.131)
Constant	4.555***	(0.454)
Regional fixed effects	yes	
R ²	0.122	
# of obs.	7,563	

Note: S.E. stands for the robust standard errors. Since we do not have the information for the *Public Sector* variable for the sample of the Czech Republic in 2004, this variable is dropped in our analysis.

** significant at 5%, ***significant at 1%.

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