

PHILIPPS-UNIVERSITÄT MARBURG
Fachbereich Wirtschaftswissenschaften

Bernd Hayo

Happiness in Eastern Europe

Nr. 12/2004

Volkswirtschaftliche Beiträge

Marburg 2004

Prof. Dr. Bernd Hayo
Philipps-Universität Marburg • FB Wirtschaftswissenschaften
Abteilung Wirtschaftstheorie • Universitätsstr. 24 • D-35037 Marburg
Tel. ++49-6421-2823901
E-Mail: hayo@wiwi.uni-marburg.de

Happiness in Eastern Europe

Bernd Hayo

Philipps-University Marburg and ZEI, University of Bonn

Abstract

This paper analyses the determinants of happiness in seven Eastern European transition countries during the early phase of economic transition. The analysis of representative survey data in an ordered logit model shows that those core socio-demographic and economic variables known to be relevant from studies on the US and Western European countries have a similar impact on happiness in Eastern Europe. In addition, rural dwellers and church goers experience greater life-satisfaction. Aggregate unemployment can explain more of the cross-country variation in happiness than income per capita.

JEL: D60, I31, P2

Keywords : happiness, well-being, transition countries, Eastern Europe

Department of Economics (FB 02)
Philipps-University Marburg
D-35032 Marburg
Germany
Tel.: ++49(0)6421-2823091
Fax: ++49(0)6421-2823193
Email: hayo@wiwi.uni-marburg.de

Thanks to Volker Clausen, Bob Cummins, and participants of the Quality of Life Conference in Frankfurt in July 2003 for many helpful comments. The usual disclaimer applies.

1. Introduction

As a research area in economics, the empirical study of subjective well-being or happiness has remained relatively dormant over almost a quarter of a century. Even the seminal study by Easterlin (1974) could not motivate economists to devote much research time to the systematic analysis of this topic.¹ However, presumably as a consequence of the growing dissatisfaction with the empirical application of traditional economic welfare analysis, this field has seen rapid growth over the last few years (Clark and Oswald 1994, Di Tella et al. 2001, Easterlin 2001, Frey and Stutzer 2002). There are two main lines of research in the empirical literature: First, the determinants of happiness are studied. Here the focus is on individual-level variables that affect life satisfaction within countries, across countries and across time. For instance, Blanchflower and Oswald 2000 study and compare happiness for the US and the UK.

Second, after the fundamental relationships between these socio-demographic and economic variables and happiness have been established, they can be used as a control framework for testing the influence of other variables on well-being, for example Frey and Stutzer (1999) analyze the impact of direct democracy and Di Tella et al. (2001) study the impact of macroeconomic variables such as inflation and unemployment. To generate convincing results, this second stream requires a relatively advanced knowledge about the core determinants of happiness, as otherwise the omitted variable problem becomes insurmountable.

So far, the literature has concentrated on studying Western Europe and the US. We know little about the situation in the transition countries of Eastern Europe. Blanchflower and Freeman (1997) look at Hungary and Slovenia within a pooled cross-section data set and find that life satisfaction is on average lower in these countries than in the West. Blanchflower and Oswald (1998) analyze the impact of unemployment on happiness and conclude that it is relatively similar to Western countries. The case of Kyrgyzstan is investigated by Namazie and Sanfey (1999). Graham and Pettinato (2000) and Ravallion and Lokshin (2000) employ the same panel data set to study poverty and subjective economic well-being in Russia. Hayo and Seifert (2003) concentrate their analysis on economic well-being, a sub-category of life-satisfaction. They find that during early stages of transition, subjective well-being is not very well proxied by indicators based on national accounting, such as GDP per capita.

¹ There is a longer and more sustained tradition of studying happiness in Psychology and Sociology. Most studies have a somewhat different focus than the ones by economists (see, e.g., Allardt 1973, Campbell et al. 1976, Strumpel 1974).

This paper studies a group of countries from Eastern Europe that consists of those that either will join the European Union in May 2004 or hope to do so in the near future. Our core question is to understand whether the situation of economic and political transition affects the impact of those variables on life satisfaction that have been found to be important for Western countries. The present data set contains representative population surveys (about 1000 respondents from 18 years of age onwards per country) collected by the Paul-Lazarsfeld-Society in Vienna (see Rose et al. 1998) in 1991.² This timing allows us to capture these societies right at the beginning of the transformation process. Since we aggregate these national data into a pooled cross-section, we are able to derive results for the group of Eastern European countries as a whole as well as regarding the differences with respect to average happiness levels.

2. Comparing average happiness

The dependent variable in our analysis is based on the answers to the following question:

On the whole, are you very satisfied, not very satisfied, or not at all satisfied with the life you lead?

1. *Not at all satisfied,*
2. *Not very satisfied,*
3. *Very satisfied.*

Answers are coded in three categories (no answers are coded as missing), which requires the use of an ordered logit model. We use life satisfaction and happiness as synonyms, as empirically, they seem to measure a very similar concept (Blanchflower and Oswald 2000).

Important summary statistics for all variables used in the present study are given in Table 1. The last column presents Pearson's correlation coefficients of the socio-demographic variables with happiness. Relatively high positive correlations are found for married persons, highest-income earners, non-church goers, and Catholics, while strongly negative associations exist for divorced persons, those with only primary education, the unemployed, lowest-income earners, and Orthodox. We should be very careful when interpreting these associations. For example, the share of Orthodox is very high in certain countries, and it is not clear whether religion causes these variations across countries or whether it is just a reflection of these. The average of life satisfaction is 2.14, which is close to the median and mode (omitted here), indicating that most respondents place themselves in the middle category.

² Access to the raw data is restricted to primary and secondary researchers organised in the „Citizens in Transition Network“. Detailed information on the survey project, including questionnaires, is available at the Centre for the Study of Public Policy (CSPP) homepage: www.cspp.strath.ac.uk. The data for the Czech and Slovak Republics are based on a split of the sample for Czechoslovakia, and thus contain a smaller number of cases.

Note that the means of the dummy variables correspond to the shares of these categories in overall answers to the respective question, e.g. an average of 0.53 for “female” implies that 53% of the relevant respondents are female and 47% are male.

Table 1: Summary statistics for data used in ordered logit model (5592 cases)

| Variables | Mean | St. Dev. | Min. value | Max. value | Correlation |
|-------------------------------|---------|----------|------------|------------|-------------|
| Life satisfaction (happiness) | 2.14 | 0.63 | 1 | 3 | 1.00 |
| Age effect: | | | | | |
| Age | 46.49 | 15.87 | 18 | 89 | 0.01 |
| Age squared | 2413.63 | 1527.97 | 324 | 7921 | 0.01 |
| Gender effect: | | | | | |
| Female | 0.53 | 0.50 | 0 | 1 | -0.01 |
| Marital status: | | | | | |
| Single | 0.13 | 0.33 | 0 | 1 | -0.03 |
| Married | 0.75 | 0.43 | 0 | 1 | 0.09 |
| Divorced | 0.04 | 0.20 | 0 | 1 | -0.08 |
| Widowed | 0.09 | 0.28 | 0 | 1 | -0.05 |
| Education: | | | | | |
| Primary school | 0.39 | 0.49 | 0 | 1 | -0.09 |
| Vocational training | 0.24 | 0.43 | 0 | 1 | 0.04 |
| Secondary school | 0.28 | 0.45 | 0 | 1 | 0.02 |
| University | 0.09 | 0.28 | 0 | 1 | 0.06 |
| Type of employment: | | | | | |
| Household, student | 0.04 | 0.19 | 0 | 1 | 0.03 |
| Full-time employee | 0.59 | 0.49 | 0 | 1 | 0.05 |
| Part-time employee | 0.01 | 0.12 | 0 | 1 | -0.02 |
| Family helper | 0.004 | 0.06 | 0 | 1 | 0.01 |
| Apprentice | 0.001 | 0.03 | 0 | 1 | -0.01 |
| Unemployed | 0.06 | 0.24 | 0 | 1 | -0.12 |
| Pensioner | 0.26 | 0.44 | 0 | 1 | -0.01 |
| Allowance | 0.02 | 0.16 | 0 | 1 | 0.03 |
| Widow pension | 0.01 | 0.09 | 0 | 1 | -0.03 |

Continued Table 1

| Income quartiles | | | | | |
|-----------------------|------|------|---|---|-------|
| Lowest quartile | 0.25 | 0.43 | 0 | 1 | -0.10 |
| Lower-middle quartile | 0.25 | 0.43 | 0 | 1 | -0.04 |
| Upper-middle quartile | 0.27 | 0.44 | 0 | 1 | 0.03 |
| Highest quartile | 0.23 | 0.42 | 0 | 1 | 0.12 |
| Community size: | | | | | |
| < 5000 inhabitants | 0.36 | 0.48 | 0 | 1 | 0.05 |
| 5001-20000 | 0.17 | 0.37 | 0 | 1 | -0.02 |
| 20001-100000 | 0.18 | 0.38 | 0 | 1 | 0.01 |
| > 100000 inhabitants | 0.29 | 0.46 | 0 | 1 | -0.04 |
| Church attendance: | | | | | |
| Never | 0.16 | 0.36 | 0 | 1 | 0.10 |
| Seldom | 0.25 | 0.44 | 0 | 1 | -0.03 |
| Several times a year | 0.25 | 0.43 | 0 | 1 | -0.05 |
| Once a month | 0.14 | 0.35 | 0 | 1 | -0.02 |
| Every week | 0.20 | 0.40 | 0 | 1 | 0.01 |
| Religion: | | | | | |
| Catholic | 0.47 | 0.50 | 0 | 1 | 0.10 |
| Protestant | 0.04 | 0.20 | 0 | 1 | 0.02 |
| Orthodox | 0.25 | 0.44 | 0 | 1 | -0.15 |
| Other | 0.03 | 0.18 | 0 | 1 | -0.04 |
| Non believer | 0.18 | 0.38 | 0 | 1 | 0.05 |
| No answer | 0.02 | 0.13 | 0 | 1 | 0.01 |

In a first step of the analysis, we compare *national happiness levels* in Eastern Europe. For each country in our sample these are computed as the arithmetic mean of the dependent variable. An important question is whether the resulting values have any meaning, within and outside the present data base. Although we have a number of studies on Western countries, and thus can draw comparisons, it is always difficult to precisely match data from different years and surveys. In particular, the wording of the question and the scale used for the answers may affect the results. To foster a meaningful comparison with Western Europe, the New Democracy Barometer also contains happiness data for Austria. Table 2 presents

happiness averages (means) for the countries in our sample, ordered from highest to lowest value.

Table 2: Happiness across countries

| | Austria | Czech | Slovak | Slovenia | Hungary | Poland | Romania | Bulgaria |
|------|---------|-------|--------|----------|---------|--------|---------|----------|
| Mean | 2.72 | 2.54 | 2.44 | 2.32 | 2.12 | 2.06 | 2.02 | 1.91 |
| %SM | 86 | 77 | 72 | 66 | 56 | 53 | 51 | 46 |

Notes: Mean is the arithmetic mean of answers. SM % is the percentage of scale maximum.

Austrians report the highest life-satisfaction, followed by Czechs and Slovaks. The lowest average levels of satisfaction can be found in Romania and Bulgaria.

One way of comparing country averages across different studies with differences in the scale of the life satisfaction variable is via the percentage of scale maximum (%SM).³ Cummins (2000, 136f) argues that for Western societies a representative value is 75 %SM, with a standard deviation of 2.5% SM. From Table 2 we can infer that life satisfaction in Austria is significantly above the typical values for Western countries at a 5% level (two standard deviations). The Czech and Slovak Republics have reached values that are not statistically different from the percentage of scale maximum typically found in Western countries. However, all other Eastern European countries in our sample show %SMs that are significantly below this reference value.

Hence, our broader sample of countries supports Blanchflower and Freeman's (1997) finding that life-satisfaction is lower in Eastern Europe than in the West. Given the differences in social and economic conditions at the beginning of political and economic transition with uncertain outcomes in Eastern Europe, this result is not entirely surprising.

At this stage, we cannot be sure whether these variations in national happiness are due to specific national conditions or just reflect a specific influence of individual-level variables. For instance, in the literature on life-satisfaction we tend to find that better educated respondents appear to be happier. Now, if a particular country has a relatively higher share of better educated, we would expect that the average happiness level for this country will be higher. Hence, it is instructive to see whether these variations in average levels, interpreted as differences in national happiness, remain after controlling for individual-level effects.

³ The %SM is computed as $(\text{Likert score} - 1) / (\text{Number of points on Likert scale} - 1) * 100$.

3. Explaining happiness by socio-demographic and economic variables

The individual-level determinants of life-satisfaction are analyzed in a pooled cross-section ordered logit regression and the results given in Table 2. Note that in the regression analysis, Austria is not included due to missing explanatory variables. The first column of results refers to the full model containing all available regressors in the surveys. Following the general-to-specific modeling strategy advocated by Hendry (1993), a consistent testing-down process has been applied to this model, leading to the reduced model in the right part of the table.

Leamer (1978) argues that in large statistical samples there is the danger that even slight and economically meaningless deviations from the null hypothesis lead to a rejection of the test. In view of our sample size of more than 5600 observations, a significance level of 1% has been used throughout the analysis. In the interpretation of the variables, we generally concentrate on the statistically significant effects. The pseudo- R^2 value of our regression, below 9%, is not very high in absolute terms. This is an indication that we do not understand happiness at an individual level very well. However, the fit of the regression is at least as high as in comparable studies on Western countries. Thus, the determinants of happiness considered in the literature are important for Eastern Europe even in the turbulent early period of transition.

Regarding the estimates of country dummies, with the Czech Republic as a reference category, we confirm the ranking in Table 1. It follows that the observed differences in the average happiness values of countries cannot be explained by the individual-level explanatory variables in our data set. There are not enough observations to study the determinants of these cross-country differences in average life-satisfaction extensively. However, from the point of view of economics it is particularly interesting to see whether these variations in average national happiness are related to per capita income differentials within this group of countries. The Pearson's correlation coefficient between estimated country dummies and national GDP per capita values in US Dollars is 0.40. Therefore, in a bivariate context inter-country income variations can explain only about 16% of the variation in national happiness. This suggests that per capita income will only play a moderate role in explaining inter-country happiness differences in Eastern Europe. The analysis of cross-country variations in happiness will be continued below.

We employ normal standard errors (SE) in the analysis, as they are the most efficient variance estimators. It is apparent from Table 2 that heteroscedasticity-robust standard errors (HCSE) do not lead to noticeable differences, except for the category "Apprentice". However, the

testing-down restriction in the last line of Table 2 would not be rejected at the chosen 1% significant level.

Table 2: Explaining happiness (ordered logit model)

| Explanatory variables | General model | | | Reduced model | | |
|-----------------------|---------------|--------|--------|---------------|--------|--------|
| | Coeff. | SE | HCSE | Coeff. | SE | HCSE |
| Country dummies: | | | | | | |
| Czech Republic | Reference | | | | | |
| Slovak Republic | -0.48 ** | 0.15 | 0.1 | -0.39 ** | 0.14 | |
| | | | 5 | | | |
| | | | | | | 0.14 |
| Slovenia | -0.91 ** | 0.11 | 0.1 | -0.86 ** | 0.11 | |
| | | | 1 | | | |
| | | | | | | 0.11 |
| Hungary | -1.47 ** | 0.11 | 0.11 | -1.43 ** | 0.11 | 0.10 |
| Poland | -1.82 ** | 0.12 | 0.12 | -1.69 ** | 0.11 | 0.12 |
| Romania | -1.90 ** | 0.17 | 0.17 | -1.82 ** | 0.11 | 0.10 |
| Bulgaria | -2.21 ** | 0.16 | 0.1 | -2.16 ** | 0.11 | |
| | | | 6 | | | |
| | | | | | | 0.10 |
| Age effect: | | | | | | |
| Age | -0.03 ** | 0.01 | 0.01 | -0.04 ** | 0.01 | 0.01 |
| Age squared | 0.0004 ** | 0.0001 | 0.0001 | 0.0005 ** | 0.0001 | 0.0001 |
| Gender effect: | | | | | | |
| Female | -0.04 | 0.06 | 0.0 | | | |
| | | | 6 | | | |
| Marital status: | | | | | | |
| Single | Reference | | | | | |
| Married | 0.35 ** | 0.09 | 0.09 | 0.45 ** | 0.07 | 0.07 |

| | | | | | | |
|---------------------|-----------|------|------|---------|------|------|
| Divorced | -0.39 * | 0.16 | 0.16 | | | |
| Widowed | 0.01 | 0.14 | 0.14 | | | |
| Education: | | | | | | |
| Primary school | Reference | | | | | |
| Vocational training | 0.13 * | 0.07 | 0.08 | | | |
| Secondary school | 0.21 ** | 0.08 | 0.07 | | | |
| University | 0.50 ** | 0.11 | 0.11 | 0.34 ** | 0.10 | 0.10 |

Continued Table 2

| Type of employment: | | | | | | | |
|-----------------------|-----------|------|------|----------|------|------|--|
| Household, student | Reference | | | | | | |
| Full-time employee | -0.49 ** | 0.15 | 0.15 | | | | |
| Part-time employee | -0.58 * | 0.27 | 0.27 | | | | |
| Family helper | -0.19 | 0.46 | 0.47 | | | | |
| Apprentice | -0.57 | 0.85 | 0.20 | | | | |
| Unemployed | -1.16 ** | 0.18 | 0.18 | -0.72 ** | 0.12 | 0.11 | |
| Pensioner | -0.42 ** | 0.16 | 0.16 | | | | |
| Allowance | -0.43 | 0.23 | 0.23 | | | | |
| Widow pension | -0.80 ** | 0.34 | 0.35 | | | | |
| Income quartiles | | | | | | | |
| Lowest quartile | Reference | | | | | | |
| Lower-middle quartile | 0.25 ** | 0.08 | 0.08 | 0.26 ** | 0.08 | 0.08 | |
| Upper-middle quartile | 0.51 ** | 0.08 | 0.08 | 0.52 ** | 0.08 | 0.08 | |
| Highest quartile | 0.91 ** | 0.09 | 0.09 | 0.94 ** | 0.09 | 0.09 | |
| Community size: | | | | | | | |
| < 5000 inhabitants | Reference | | | | | | |
| 5001-20000 | -0.22 ** | 0.08 | 0.08 | -0.21 ** | 0.08 | 0.08 | |
| 20001-100000 | -0.26 ** | 0.08 | 0.08 | -0.26 ** | 0.08 | 0.08 | |
| > 100000 inhabitants | -0.30 ** | 0.07 | 0.07 | -0.30 ** | 0.07 | 0.07 | |
| Church attendance: | | | | | | | |
| Never | Reference | | | | | | |
| Seldom | 0.17 | 0.15 | 0.16 | | | | |
| Several times a year | 0.24 | 0.16 | 0.17 | | | | |
| Once a month | 0.34 | 0.17 | 0.17 | | | | |
| Every week | 0.56 ** | 0.18 | 0.18 | 0.33 ** | 0.08 | 0.09 | |

Continued Table 2

| Religion: | | | |
|------------------------------|-----------|-------------------------------|-------------------------------|
| Catholic | Reference | | |
| Protestant | 0.04 | 0.14 | 0.14 |
| Orthodox | -0.02 | 0.14 | 0.15 |
| Other | -0.10 | 0.18 | 0.19 |
| Non believer | 0.08 | 0.16 | 0.16 |
| No answer | 0.15 | 0.25 | 0.26 |
| Cut values | | | |
| Cut 1 | -3.69 | | -3.58 |
| Cut 2 | -0.55 | | -0.46 |
| No of cases | | 5592 | 5592 |
| Log likelihood | | -4834.1 | -4852.4 |
| Chi ² -test | | Chi ² (38) = 904** | Chi ² (18) = 872** |
| Pseudo R ² | | 0.086 | 0.083 |
| Test for excluding variables | | | Chi ² (20) = 31.4 |

Notes: **(*) indicates statistical significance at a 1 (5) percent level. SE denotes normal standard errors, HCSE lists White's (1980) heteroscedasticity consistent standard errors.

The actual coefficients of ordered logit models do not give a very good idea about the effects of changes in the explanatory variables on the predicted probabilities of falling under one of the categories of the dependent variable (Greene 1991, 703ff). In particular, the coefficients in Table 2 do not imply sign restrictions on the effects of changes in the explanatory variables on the middle category, i.e. "not very satisfied". It is therefore useful to compute marginal effects of explanatory variables, here evaluated at the sample mean of the other variables. For dummy variables, this is not truly a marginal effect but rather the change from zero to one.

Table 3 reports marginal effects for the variables within the reduced model of Table 2 for all categories of life-satisfaction. Actual and predicted frequencies of the dependent variable are given in the last line of the table. It is apparent that the model somewhat over-predicts the number of cases falling into the middle category, a typical outcome of this class of models. Applying the results on marginal effects to country dummies, we find that although all countries show lower happiness levels than the Czech Republic, being non-Czech has varying implications with respect to the probability of answering "not very satisfied", the middle category of happiness. In addition, the probabilities of falling into the top or bottom categories

of the dependent variable are not symmetric. For instance, transforming a Czech into a Slovenian (Bulgarian) citizen raises the probability of answering “not at all satisfied” by 5% (35%) and “not very satisfied” by 2% (reduces by 8%), and lowers the probability of falling into the “very satisfied” category by 7% (28%). Apart from the country dummies, the marginal effects have the same sign on the two lower categories, with the highest category taking on the opposite sign. National differences are generally more important than variations in individual economic and socio-demographic variables. For example, to keep the probability of answering “very satisfied” constant after transforming a Czech into a Bulgarian citizen, he needs to get a university degree and must enter the highest income quartile.

Table 3: Marginal effects of ordered logit model

| Happiness categories: | Not at all satisfied | Not very satisfied | Very satisfied |
|-----------------------|----------------------|--------------------|----------------|
| Country dummies: | | | |
| Slovak Republic | 0.05 * | 0.02 * | -0.07 ** |
| Slovenia | 0.11 ** | 0.03 ** | -0.14 ** |
| Hungary | 0.21 ** | 0.001 | -0.21 ** |
| Poland | 0.25 ** | -0.01 | -0.24 ** |
| Romania | 0.28 ** | -0.04 * | -0.25 ** |
| Bulgaria | 0.35 ** | -0.08 ** | -0.28 ** |
| Age effect: | | | |
| Age | 0.004 ** | 0.004 ** | -0.01 ** |
| Age squared | -0.0001 ** | -0.00005 ** | 0.0001 ** |
| Marital status: | | | |
| Married | -0.05 ** | -0.03 ** | 0.08 ** |
| Education: | | | |
| University | -0.03 ** | -0.04 ** | 0.07 ** |
| Type of employment: | | | |
| Unemployed | 0.09 ** | 0.02 ** | -0.12 ** |
| Income quartiles | | | |
| Lower-middle quartile | -0.02 ** | -0.03 ** | 0.05 ** |
| Upper-middle quartile | -0.05 ** | -0.06 ** | 0.10 ** |
| Highest quartile | -0.08 ** | -0.12 ** | 0.20 ** |

Continued Table 3

| Community size: | | | |
|----------------------|-------------|-------------|-------------|
| 5001-20000 | 0.02 ** | 0.02 ** | -0.04 ** |
| 20001-100000 | 0.03 * | 0.02 ** | -0.05 ** |
| > 100000 inhabitants | 0.03 ** | 0.02 ** | -0.05 ** |
| Church attendance: | | | |
| Every week | -0.03 ** | -0.03 ** | 0.07 ** |
| Frequency in % | 13.8 / 11.4 | 58.1 / 63.0 | 29.1 / 25.6 |
| (actual / predicted) | | | |

Coming now to the interpretation of the individual-level variables, we find that *age* has a non-linear relationship with happiness. Being one year older lowers the probability of being in the highest happiness category by 1%, and increases the probability to be in one of the lower categories by 0.4%, respectively. The inclusion of the squared age term implies that we need to take account of this non-linear effect as well. Here the marginal probabilities are misleading, as age squared cannot change by one unit if age changes by one unit. Computing the resulting difference in age squared for adding another year to the mean age (46.49), and multiplying this with the marginal effects for age squared, we get a “pseudo-marginal” effect of 1.58% increase in the probability of being in the highest happiness category. The net marginal effect of the two age variables on the “very satisfied” category is positive (0.58%). This is in accordance with the finding that minimum happiness, conditional on the other explanatory variables, is observed at an age of 40 (based on the coefficients in Table 2). The influence of age on happiness becomes positive when people reach 80 years of life.

How does this finding relate to the results previously reported in the literature? Table 4 compares the influences of core socio-demographic and economic variables across studies on East European and Western countries. The first line of this table reports estimates for the happiness-age relationship.

A non-linear association between age and happiness is a typical finding in the literature. Moreover, the shape of the non-linearity is strikingly similar across Eastern Europe and Western Countries. This is all the more noteworthy as the number and coding of other control variables varies across the listed studies. However, the estimates for Russia by Ravallion and Lokshin (2000) diverge substantially in this respect. This outlier may be the result of using a qualitatively different dependent variable, namely the subjective rank of the respondent within

the national income distribution. Most studies do not report marginal effects, and thus a detailed comparison along this dimension is not possible.

Table 4: Comparing core determinants of happiness in Eastern Europe and Western countries

| | Eastern Europe | Russia1 | Russia2 | Kyrgyzstan | EU | US |
|------------|------------------------|------------------------|-------------------------|------------------------|------------------------|------------------------|
| Age | Min: 40, + for = 80 | Min: 35, + for = 70 | Min: 51, + for = 103 | Min: 42, + for = 85 | Min: 43, + for = 86 | Min: 37, + for = 74 |
| Female | ? | - | ? | ? | + | + |
| Married | + | ? | + | + | + | + |
| Education | + | + | + | ? | + | + |
| Income | + | + | + | + | + | + |
| Unemployed | - | n.a. | - | - | - | - |

Notes: + (-) indicates a significantly positive (negative) effect and ? indicates no significant effect.

Sources: Eastern Europe: own calculations, Russia1: Graham and Pettinato (2000), Russia2: Ravallion and Lokshin (2000), Kyrgyzstan: Namazie and Sanfey (1999), EU: Di Tella et al. (2001), US: Blanchflower and Oswald (2000).

With regard to *gender*, no significant differences can be found in Eastern Europe. Table 4 reveals that in the West females tend to be happier, while for Russia, one study even reports a negative sign.⁴ One explanation for this deviation from attitudes in Western countries may be the relatively less enthusiastic support of women towards the creation of a market economy in East European countries (Hayo 2004). This critical attitude might reflect relatively more pessimistic expectations women have for their lives under the new regime, canceling out the “extra” happiness recorded in Western surveys compared to men.

In Eastern Europe, *married* persons report a higher life-satisfaction than those who were never married, divorced or widowed. Being married raises the probability of answering “very satisfied” by 8%, while the probability of being in one of the lower happiness categories decreases by 3% and 5%, respectively. The positive association between happiness and marriage is reported in most of the studies listed in Table 4. The negative effect of divorced on happiness in the general model of Table 2 does not survive the testing-down process. In other studies, divorced and widowed persons are reported to be relatively less happy, without an attempt to evaluate the statistical robustness of this finding. Graham and Pettinato (2000)

⁴ In his survey of the psychological literature, Cummins (2000, 134) is rather sceptical with regard to the existence of gender differences in happiness.

do not record this variable to be significant for Russia, while Ravallion and Lokshin (2000) report the opposite result.

With regard to *education* we find for both Eastern Europe and Western countries that more educated persons tend to be more satisfied.⁵ However, in the present sample of East European countries, this result is only robust for people with a university degree when applying the statistical reduction process. In addition, Namazie and Sanfey (1999) do not find significant results of education for happiness in Kyrgyzstan. In the present study, the marginal probability effects of holding a university degree are slightly lower, in absolute values, than the ones estimated for being married.

Differences in the *income* position, on the other hand, affect happiness through all quartiles. This is a consistent finding across all studies contained in Table 3. Note that the income variable used here, and in most other comparative studies, measures a mixture between an *absolute* and a *relative* income effect. The absolute income effect derives from the fact that the people who are in the upper income quartiles are by construction the high income people and vice versa. However, there is also a relative effect, as we sort people according to their relative income position within their society. By pooling across countries, we include people in the same income quartile whose absolute income may be quite different. Unfortunately, data limitations do not allow us to properly distinguish between absolute and relative income effects in the present sample. The marginal effects of being in the highest income quartile are the largest in the model, except for the ones of the country dummies as noted earlier. A person entering the highest income category, from being in the lowest, achieves an increase in the probability of answering “very satisfied” by 20%. Interestingly, for the second highest income category, this increase is 10% and for the second-lowest category 5%, which suggests a pattern of doubling this probability with every consecutive jump in the income categories.

Finally, the unemployed are less happy than people in all other employment categories, even after controlling for a number of other influences, including income position. Moreover, the impact of unemployment on happiness, at least compared to the other variables in the regression, is not trivial. For instance, the decrease in probability of being “very satisfied” as a result of being out of work is greater than that of a fall from the upper-middle income category to the lowest one. Generally, becoming unemployed will imply a loss of happiness due to lower income as well as due to being in the state of unemployment involving a loss of social standing, self-respect, and gloomy future perspectives.

One may therefore conjecture that unemployment differences are able to explain the differences in average happiness across the countries in our sample. On the other hand, unemployment rates are still relatively low in Eastern Europe during this early phase of economic transition. By referring to Table 1 we can see that, in the aggregate, only six percent of respondents were unemployed. Although in later transition years the national differences in unemployment rates will be much more pronounced, there is some variation across countries. The unemployment rate based on our sample ranges from 2.9% in the Czech Republic to 9.8% in Bulgaria. However, low unemployment rates in a process of transition may not signal good economic conditions for a country but rather a delay in implementing market reforms, as, for example, in Romania with an unemployment rate of only 3.4% in our sample. This could affect life-satisfaction in the country negatively.

Calculating the correlation coefficient between average happiness values and the unemployment rates yields a value of -0.64 . Thus, countries with a higher unemployment rate display lower average life-satisfaction. Moreover, the estimates for the country dummies in Table 3 already control for the influence of unemployment on an individual level but the correlation between these dummies and national unemployment rates is still -0.63 , compared to only 0.40 with GDP per capita as reported above. Thus, the national differences can only be explained by referring to aggregate effects of unemployment that go beyond the loss in happiness suffered as a result of being unemployed. An analysis of how exactly the aggregate effect of unemployment might work on happiness is beyond the scope of the present paper.⁶

Estimating a model that explains average happiness in Eastern Europe by GDP per capita and unemployment leads to the results in equation (1):

$$(1) \text{ Happiness} = 2.42 + 0.054 (\text{GDP per capita}/1000) - 0.063 (\text{Unemployment rate in } \%)$$

$$(0.23) \quad (0.042) \qquad \qquad (0.032)$$

The variables have the signs (SEs in brackets) in accordance with our theoretical priors (p-values: GDP per capita: 0.27, unemployment: 0.12) and the explained variation of average happiness is sizeable ($R^2 = 0.58$). The partial R^2 values for GDP per capita (0.29) and unemployment (0.48) are not trivial. The absolute impact on happiness is also not small. To

⁵ As in the case of gender, Cummins (2000) argues that education does not play an important role in explaining differences in life satisfaction.

⁶ The literature on sociotropic versus egotropic voting may provide some leads for further research (see Nannestad and Paldam 1994).

explain the difference in happiness between the Czech Republic and Bulgaria, we would, for instance, need a difference in unemployment rates of about 10 percentage points or a GDP per capita gap of about 1160 US dollar.

The present data set contains additional socio-demographic variables that extend beyond the results derived in the existing multi-country happiness studies. Studying the effects of settlement size reveals that those who dwell in relatively rural areas tend to be happier than those living in larger cities. This relationship has already been noted, for example by Dale (1980) for Scandinavian countries. One explanation of this finding is that it simply reflects different costs of living between city and rural area. Holding nominal income constant, I derive more satisfaction by being able to buy more goods in the lower-cost rural area. However, it is unlikely that purchasing power differences are sufficient to explain the disutility of big city life. First, living in a bigger city also brings benefits in terms of the provision of goods and services. Second, if it were the case that we measure only differences in the price level then the relative size of the effects of being in one of the respective income quartiles and settlement sizes should never be negative. Using the estimates from Table 3, one can show that the net contribution of settlement size and income quartile on happiness, keeping everything else equal, is positive for the upper two quartiles only.⁷

An additional explanation is that the aspiration level of people in the rural areas does not change as quickly as that of city dwellers. This explanation is indirectly supported by the finding that income quartiles and settlement size are positively correlated.⁸ For example, the Pearson correlation coefficients for the highest income quartile with the respective categories of community size are: -0.11 for < 5000 inhabitants, -0.02 for 5001-20000 inhabitants, 0.04 for 20001-100000 inhabitants, and 0.09 for > 100000 inhabitants. Similar relationships exist for the other income quartiles. Thus, relatively rich people tend to live in big cities. Moreover, Winter et al. (1999) show for Poland that persons living in urban areas were relatively less satisfied despite better “objective” living conditions. Applying Easterlin’s (2001) theory of adjusting aspirations to these findings, those who have relatively less income are confronted

⁷ It is noteworthy that interaction terms of settlement size and income quartile are not significant.

⁸ Note that this simple bivariate correlation does not take into account that living costs between smaller and larger settlements differ. If all we did was proxy real income differences, however, then both variables should not be significant. Table 3 shows that this is not the case, and, thus, the effect of community size does not simply reflect a purchasing power correction.

In the multivariate model of Table 3, however, it should not be the income would no longer be significant if it were only the difference in purchasing power that drove the effect of community size.

with a style of living in the big cities they cannot achieve and this creates frustration with one's own income situation.

Another insufficiently studied relationship is the one between religion, frequency of church visits and happiness. The indicator religion differentiates between persons of different beliefs. Frequency of church visits can be interpreted as an indicator for the seriousness of exercising this belief. Swinyard et al. (2000) find that religious people are happier in both the US and Singapore. For Eastern Europe we cannot detect differences across religions conditional on the other variables in the model. So belonging to a particular religion does not yield happiness per se after controlling for country specific effects. However, this result crucially depends on controlling for country fixed effects. Excluding country dummies leads to a highly significant negative effect of being Orthodox. Controlling for Bulgaria and Romania alone is sufficient to render the variable insignificant. Based on our analysis, we therefore cannot exclude that the cross-country variation in happiness is partly driven by differences in religion. Including the share of Orthodox (as based on our sample data) in equation (1), we get the following result ($R^2 = 0.77$):

$$(2) \text{ Happiness} = 2.59 + 0.015 (\text{GDP per capita}/1000) - 0.060 (\text{Unemployment rate in \%}) \\ (0.22) \quad (0.043) \quad (0.027) \\ - 0.004 (\text{Share of Orthodox in \%}) \\ (0.002)$$

The share of Orthodox in a country shows a negative sign and has a p-value of 0.20, while the p-values of GDP per capita and unemployment are 0.75 and 0.11 respectively. Excluding GDP per capita leads to equation (3) with $R^2 = 0.77$.

$$(3) \text{ Happiness} = 2.64 - 0.063 (\text{Unemployment rate in \%}) - 0.004 (\text{Share of Orthodox in \%}) \\ (0.15) \quad (0.024) \quad (0.002)$$

Now the unemployment rate and the share of Orthodox are both significant at a 10% level. Orthodox explains approximately the same variance as GDP per capita and more. Thus, we cannot reject the hypothesis that religion helps to explain variations in happiness across countries. However, since we do not know whether religion is just proxying for some other

country-specific characteristics, and given our very limited sample size, we should not put too much emphasis on these results.

While the actual type of religion does not seem to influence happiness after controlling for country fixed effects, those people who go to church very often are relatively more satisfied with their lives. One interpretation of this result is that those who are characterized by a desire to participate in religious activities derive additional happiness from it. Another interpretation, however, relates to the fact that many social groups working to bring down the communist regime in Eastern Europe had operated within the church. Interestingly, the support for the creation of a market economy does also not differ across religions after controlling for country fixed effects (Hayo 2004). But those respondents who report regular visits to a church show significantly more support for the market regime. Thus, the extra happiness of churchgoers measured here may just be a reflection of the aftermath of regime change in these countries.

5. Conclusion

This paper analyses happiness based on representative survey data from seven East European countries at the beginning of the transformation process in 1991. The level of life-satisfaction in these transition countries appears to be lower than in Western societies. Only about 16% of inter-country happiness differences in Eastern Europe can be directly explained by variations in national per capita income.

Although one might have expected to find that during the turbulent and sometimes chaotic times of transformation that determinants of life-satisfaction known from studies on Western countries lose their explanatory power, this is generally not the case. We find that most of the effects of socio-demographic and economic variables known from studies on the US or Western Europe carry over to these countries. Thus, determinants of happiness during times of transition are quite similar compared to other societies. This makes data from these countries suitable for an analysis of the effects of other influences on happiness, such as different macroeconomic conditions or institutional conditions. We also study variables that so far have not received much attention in the literature. A new result is that rural respondents report higher life satisfaction than city dwellers. This finding can be explained by differences in purchasing power and a slower adjustment of aspiration levels of rural dwellers. Moreover, the data indicate that the religious belief of the respondent does not seem to play a role in determining happiness. On the other hand, the frequency of church visits has a significantly

positive impact on life satisfaction. Consequently, it appears that exercising religious beliefs generates happiness. However, note that resistance against the communist regime was often organized within the church. Thus, it might be the case that the estimated positive effect on happiness is caused by the joy about the regime change rather than by regularly exercising religious beliefs.

The individual level analysis controls for national differences in average happiness by including country dummies, which turn out to be highly significant. Preliminary evidence concerning the explanation of these cross-country differences in average happiness points towards the importance of national unemployment rates and the share of Orthodox in the population. However, especially the latter variable may proxy for some other unobserved country-specific characteristic. Hence, while some progress towards explaining inter-country happiness differences in Eastern Europe can be made, the number of aggregate observations is much too small for robust statistical inference. Here, having a bigger data set with observations over time would be very helpful in providing more powerful tests than possible within the present framework.

References

- Allardt, E. (1973), *About Dimensions of Welfare*, Research group for Comparative Sociology, Research Report No. 1, 1973, University of Helsinki.
- Blanchflower, D.G. and R. Freeman (1997), The Attitudinal Legacy of Communist Labor Relations, *Industrial Labor Relations Review* 50, 438-459.
- Blanchflower, D.G. and A. Oswald (1998), Unemployment, Well-being and Wage Curves in Eastern Europe, *mimeo*, Dartmouth College and University of Warwick, October.
- Blanchflower, D.G. and A. Oswald (2000), Well-being Over Time in Britain and the USA, *NBER Working Paper* 7487, January.
- Campbell, A., P.E. Converse, W.L. Rodgers (1976), *The Quality of American Life*. New York: Russel Sage Foundation.
- Clark, A. and A. Oswald (1994), Unhappiness and Unemployment, *Economic Journal* 104, 648-659.
- Cummins, R.A. (2000), Personal income and subjective well-being: A review, *Journal of Happiness Studies* 1, 133-158.
- Dale, B. (1980), Subjective and Objective Social Indicators in Studies of Regional Social Well-being, *Regional Studies* 14, 503-515.
- Di Tella, R., R. MacCulloch and A. Oswald (2001), Preferences Over Inflation and Unemployment: Evidence from Surveys of Happiness, *American Economic Review* 91, 335-341.
- Easterlin, R. (1974), Does Economic Growth Improve the Human Lot? Some Empirical Evidence, in: P.A. David and M.W. Reder (eds.), *Nations and Households in Economic Growth: Essays in Honour of Moses Abramovitz*, New York: Academic Press, 89-125.
- Easterlin, R. (2001), Income and Happiness: Towards a Unified Theory, *Economic Journal* 111, 465-484.
- Frey, B.S. and A. Stutzer (1999), Measuring Preferences by Subjective Well-being, *Journal of Institutional and Theoretical Economics* 155, 755-778.
- Frey, B.S. and A. Stutzer (2002), What can Economists Learn from Happiness Research? *Journal of Economic Literature* 40, 402-435.
- Graham, C. and S. Pettinato (2000), Frustrated Achievers: Winners, Losers, and Subjective Well-being in New Market Economies, *mimeo*, The Brookings Institution, Center on Social and Economic Dynamics, October.

- Greene, W.H. (1991), *Econometric Analysis*, New York: MacMillan.
- Hayo, B. (2004), Public Support for Creating a Market Economy in Eastern Europe, *Journal of Comparative Economics*, forthcoming.
- Hayo, B. and W. Seifert (2003), Subjective Economic Well-being in Eastern Europe, *Journal of Economic Psychology* 24, 329-348.
- Hendry, D.F. (1993), *Econometrics: Alchemy or Science?*, Oxford: Blackwell.
- Leamer, E.E. (1978), *Specification Searches*, New York: John Wiley.
- Namazie, C. and P. Sanfey (1999), Happiness in Transition: the Case of Kyrgyzstan, STICERD (LSE) *Distributional Analysis Research Programme Discussion Paper* 40, March.
- Nannestad, P. and M. Paldam (1994), The VP-Function: A Survey of Literature on Vote and Popularity Functions after 25 Years, *Public Choice* 79, 213-245.
- Ravallion, M. and M. Lokshin (2000), Self-Rated Economic Welfare in Russia, *mimeo*, World Bank, Washington, DC, May.
- Rose, R., W.T. Mishler and C. Haerpfer (1998), *Democracy and its Alternatives. Understanding Post-Communist Societies*, Baltimore: John Hopkins University Press.
- Strumpel, B. (1974), *Subjective Elements of Well-being*, (ed.), Paris: OECD.
- Swinyard, W.R., A.-K. Kau, and H.-Y. Phua (2001), Happiness, Materialism, and Religious Experience in the US and Singapore, *Journal of Happiness Studies* 2, 13-32.
- White, H (1980), A Heteroscedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroscedasticity, *Econometrica* 48, 817-838.
- Winter, M., E.W. Morris, K. Gutkowska, M. Jezewska-Zychowicz, T. Pataszewska-Reindl, K. Zelazna, and U. Grzeszczak-Swietlikowska (1999), Constraints, Domain Conditions, and Well-Being: Evidence from Poland During the Transformation, *Journal of Consumer Affairs* 33, 27-47.