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(Un)Happiness in Transition

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The transition from plan to market in postcommunist countries is an economic transformation of remarkable scale. Starting around 1990, countries of the former Soviet Union and of central and eastern Europe removed central planning; liberalized prices and foreign trade; and introduced modern institutions of taxation, banking, customs, and independent central banking. Since that time, the typical transition country has privatized the majority of its industrial enterprises, overcome the initial output fall at the start of the transition, and embarked on a path of strong and sustained growth. Considering the challenge of large-scale institutional transformation, the sustained economic growth since the mid or late 1990s in these countries suggests that economic transition has largely been a success. Figure 1 shows the results. In Russia and other countries formerly members of the Soviet Union, GDP has been growing since 1999 at 7 percent per year. The economies in central and eastern Europe have been growing at 4 percent per year since the late 1990s; on average, per capita GDP in these countries exceeds pretransition levels by 40 percent.

The economic benefits of transition can also be measured in other ways. Table 1 shows per capita household consumption expenditures and other consumption indicators for selected years from 1985 to 2004 in transition countries and, for comparison, in both the United States and in the "middle-income countries" as classified by the World Bank, which on average lag behind transition countries in

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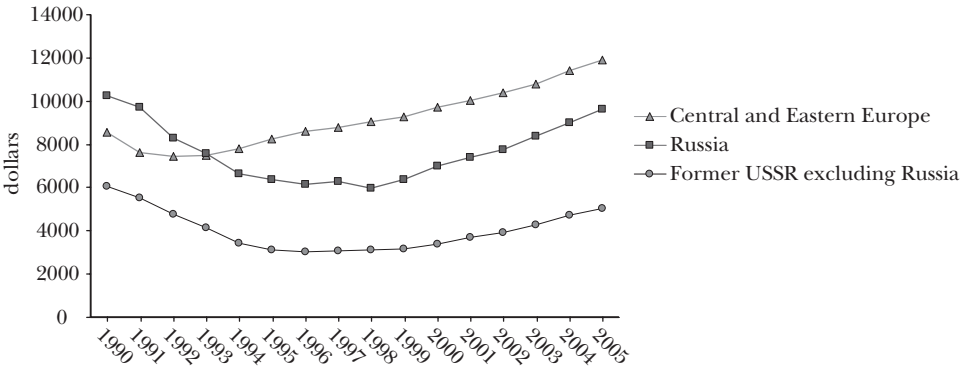
Figure 1
The Dynamics of Real GDP Per Capita
(in constant international 2000 U.S. dollars adjusted for purchasing power parity)



Source: World Development Indicators database, World Bank.

terms of GDP per capita.[1] Household consumption per capita fell for transition economies more than 10 percent between 1990 and 1995 and then started to grow in the mid 1990s, reaching pretransition levels by 2000. By 2004, per capita consumption in transition economies was 34 percent above pretransition levels. Despite the initial fall, the overall increase in consumption in 15 years of transition is not vastly different from the average consumption growth in middle-income countries that did not experience a transition shock and started from a lower level. Per capita household consumption in middle-income countries grew by 44 percent from 1990 to 2004.

The improvements in household consumption are even more evident in the data series for consumption of specific goods. For example, growth in residential housing per capita in the former Soviet Union region is uniformly positive across countries and stages of transition for which data exists, with the exception of the war-affected Tajikistan. On average, housing per capita in the countries making up the Commonwealth of Independent states has grown from 172 square feet per capita in 1991 to 215 in 2006. This level is still much lower than the U.S. figure of 752 square feet per person, but already comparable to western Europe's range of 300–400 square feet per person.

During the transition, the number of cars per capita doubled from 110 per thousand people in 1990 to 223 per thousand people by 2006. By comparison, in middle-income countries as a whole, car ownership increased by only 46 percent over the same period. The numbers of telephone lines and personal computers also

[1] The World Bank classifies countries as middle-income if their 2007 gross national income per capita ranges from $936 to $11,455. There are 95 middle-income countries, including 20 transition countries. Three transition countries are classified as low-income countries, and five are high-income countries.

Table 1
Selected Indicators of Consumption
(cross-country average)

	1985	*1990*	*1995*	*2000*	*2004 (unless otherwise noted)*
Household consumption expenditure per capita (constant 2000 US$)					
Transition countries	–	1154	1009	1155	1543
Middle-income countries	774	813	925	1044	1174
United States	17081	19110	20405	23880	25841
Housing (square feet per person)					
CIS	–	172	–	183	215*
United States	–	–	694	720	752
Cars (per 1,000 people)					
Transition countries	–	110	134	187	223**
Middle-income countries	–	37	50	69	54**
United States	–	758	756	785	–
Telephone mainlines (per 1,000 people)					
Transition countries	94	125	159	216	264
Middle-income countries	29	40	68	127	195
United States	487	545	600	682	606
Personal computers (per 1,000 people)					
Transition countries	–	4.1	19.2	57.3	109.8
Middle-income countries	–	2.2	9.5	29.1	58.3
United States	106	217	324	570	762

Source: The source of all variables with the exception of housing is the World Development Indicators database. Housing data come from the CIS statistical abstracts and American Housing Survey, U.S. Census Bureau.
Note: The list of transition countries is as follows: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, the former Yugoslav Republic of Macedonia, Moldova, Poland, Romania, Russia, Serbia and Montenegro, Slovak Republic, Slovenia, Tajikistan, Ukraine, and Uzbekistan (there are no reliable data on Turkmenistan). The last column of the table reports data for the last year available. If there is no asterisk, the data are for 2004; * indicates the data are for 2006; ** indicates the data are for 2003. A dash denotes missing data. "CIS" stands for the Commonwealth of Independent States, which consists of all countries of the former USSR except for Baltic states. Housing data for the United States refer to median rather than mean square footage per person. The middle-income countries group is defined here as in the 2006 World Development Indicators database; the classification criteria and the list of middle-income countries are available at ⟨http://go.worldbank.org/K2CKM78CC0⟩. Using a population-weighted average instead of a simple cross-country average does not change the overall pattern found in the data.

exhibited fast growth in transition economies during this time: from 125 telephone lines per thousand people in 1990, to 264 by 2004; and from four computers per thousand people in 1990, to 110 by 2004. The rate of growth in these indicators for transition countries is similar or slightly slower than that in middle-income countries, although middle-income countries as a group were starting at lower levels, so large percentage gains could come more easily.

The increase in real incomes and consumption should be viewed as a lower bound for the improvement in the quality of life of transition country residents; this measurement does not take into account the time and effort no longer wasted waiting in lines for rationed goods, nor does it take into account the improvement in personal and political freedoms. Thus the benefits of transition should be greater than Table 1 suggests. However, many residents of transition economies believe that transition hasn't brought any gains at all. In a recent large-scale survey of 28,000 individuals in 28 transition countries carried out by the World Bank and the European Bank for Reconstruction and Development (EBRD, 2007), 49 percent of respondents disagreed with and only 35 percent agreed with the statement that the economic situation in their country today is better than it was around 1989.[2] Similarly, 44 percent disagreed with the statement that the political situation in their country is better now than before transition started, compared to 35 percent who agreed with this statement. These percentages vary across countries, but in many countries the vast majority of respondents expressed strong dissatisfaction with transition. For example, 75 percent of Hungarians, 70 percent of Ukrainians, 70 percent of Kyrgyz, 63 percent of Bulgarians, and 61 percent of Moldovans disagree that the economic situation in their country today is better than around 1989.[3] Dissatisfaction with transition translates into low scores of what is, perhaps, the ultimate survey-based measure of utility—self-reported life satisfaction. In this paper, we survey the available evidence and analyze new data sources to document this widespread unhappiness in transition countries and to consider the factors that might explain this phenomenon.

How Unhappy Are People in Transition Countries?

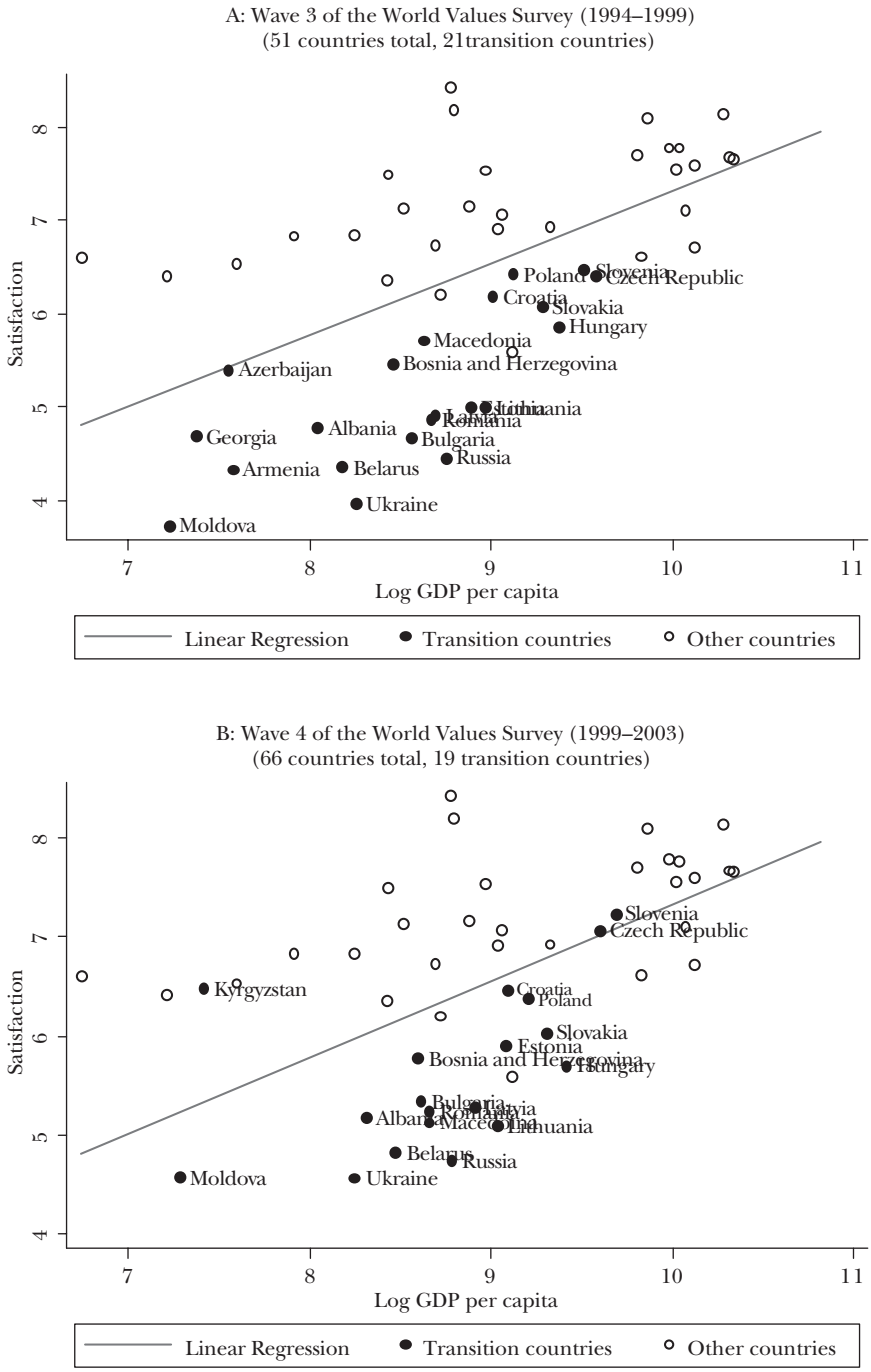
The most comprehensive source of data on life satisfaction around the world is the World Values Survey, which asks representative samples of individuals in up to 84 countries about their attitudes and values. Among other questions, the World Values Survey questionnaire asks: "All things considered, how satisfied are you with your life as a whole these days?" Respondents can choose an answer from a scale of one ("Dissatisfied") to ten ("Satisfied"). According to these data, self-reported life satisfaction has fallen during transition and is below the levels of life satisfaction in other countries with similar per capita income.

The slopes of the best-fit lines in Figure 2 illustrate the correlation between per

[2] According to the Pew Research Center's Social and Demographic Trends survey (2008), in the recent decades, about 50 percent of Americans agreed that they were better off now than five years ago, while 15–25 percent said that they were worse off. (The year 2008 was an exception, when only 41 percent felt better off and 31 percent felt worse off).

[3] Interestingly, in two countries that are among the least reformed in Europe—Belarus and Albania—the population is very positive about the recent history: 70 percent of Albanians and 68 percent of Belorussians agree that their respective countries are better off today than in 1989, while only 17 percent of Albanians and 13.5 percent of Belorussians disagree with this statement.

Figure 2
Life Satisfaction and per Capita GDP



Note: The vertical axis measures average country-level value of life satisfaction on a scale from one to ten using data from the World Values Survey. The horizontal axis measures the natural logarithm of per capita GDP in purchasing power parity–adjusted dollars with data from the World Development Indicators of the World Bank. The set of countries includes all from the surveys, but only the transition countries are marked with names.

capita GDP by country and the average country response to the World Values Survey question on life satisfaction in waves 3 and 4 of the survey, which took place in 1994–1999 and 1999–2003, respectively. The figure shows that transition economies are consistently below the best-fit line in both periods. A more complex calculation, which controls for the usual determinates of life satisfaction (for instance, Frey and Stutzer, 2002; Blanchflower and Oswald, 2004; Layard, 2005) does not alter this basic qualitative pattern.

Table 2 presents detailed regression results at the level of individuals, which show that after adjusting for a variety of country-level and individual-level variables, transition countries' residents express significantly lower degrees of life satisfaction.[4] In each regression, the dependent variable is a measure of life satisfaction, measured for each individual respondent on a scale from one to ten, in the World Values Survey. All regressions in the table include standard controls: both country-level (inflation, inequality, unemployment, the level of democracy, and media freedom) and individual-level (age, both linear and quadratic terms, gender, employment, marital status, and education level). The lists of countries included in the regressions vary according to data availability.

The key finding in columns 1 and 2 of Table 2 is that life satisfaction in transition countries is 1.40 points below the predicted level in the wave 3 of the World Values Survey and 1.13 points below its predicted level in wave 4 of the survey (as shown by the coefficients on the dummy variable for whether the respondent comes from a transition economy). The difference in life satisfaction between transition and nontransition countries—which we will refer to as the "happiness gap"—is statistically significant at the 1 percent level and large in magnitude since life satisfaction is measured on a scale from one to ten, and a standard deviation of life satisfaction around the world is only about 2.5 points. To illustrate the size of the gap, consider the United States where the difference between the 25^{th} and 75^{th} percentiles is only 2 points in every wave of the World Values Survey.

In columns 3 and 4 of Table 2, we report regression results on all the waves of the World Values Survey pooled together, controlling with dummies for each wave of the survey. Coefficients on the interaction terms between transition country dummies and wave dummies estimate the average difference in life satisfaction between transition and nontransition countries for the respective waves of the World Values survey. They are negative and statistically significant.

Overall, the average difference between life satisfaction of residents in transition and nontransition countries is robust and large: about one half of a standard

[4] The detailed description of all variables, their sources, and specifications mentioned in this paper are available in the technical appendix, which is available both as part of the on-line version of this paper at ⟨http://www.e-jep.org⟩ and also at ⟨http://www.cefir.ru/ezhuravskaya/research/Appendix_happiness.pdf⟩. In this paper, we follow the happiness literature's tradition of assuming away the issue of reverse causality that may arise due to the effect of life satisfaction on income, employment, educational attainment, and health outcomes. While these effects may well be important in reality, they are usually neglected due to the data limitations. See Deaton (2008) for a discussion of some of these issues.

Table 2
Is Life Satisfaction Lower in Transition?

	Dependent variable: life satisfaction (1–10)					
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
					Absolute household income	*Absolute household income per member*
Transition country dummy	−1.40***	−1.13***				
	[0.33]	[0.33]				
Transition country dummy * wave 2			−0.72***	−0.67***		
			[0.22]	[0.24]		
Transition country dummy * wave 3			−1.44***	−1.56***		
			[0.28]	[0.27]		
Transition country dummy * wave 4			−0.87***	−0.90***		
			[0.29]	[0.32]		
Log GDP pc (PPP $)	0.47***	0.35	0.42***	0.44***		
	[0.17]	[0.24]	[0.12]	[0.12]		
Relative HH income (1–10)	0.14***	0.20***	0.14***	0.13***		
	[0.02]	[0.02]	[0.02]	[0.02]		
Log absolute HH income					0.41***	0.23***
					[0.06]	[0.04]
Transition country dummy * (Log GDP pc − mean)			0.38*			
			[0.23]			
Transition country dummy * (Relative HH income − mean)				0.07**		
				[0.03]		
Transition country dummy * Log absolute HH income					0.26***	0.21***
					[0.07]	[0.06]
Wave dummies			yes	yes		
Country-level controls	yes	yes	yes	yes		
Country dummies					yes	yes
Sample: wave	3	4	all	all	4	4
Observations	51,516	56,903	161,508	161,508	63,237	27,290
R-squared	0.25	0.18	0.19	0.19	0.23	0.28
Countries	39	44	55	55	53	26
No. of transition countries	14	16	17	17	16	11

Note: "HH" stands for household. "pc" means per capita. Individual-level controls are included in each regression; they are age with a quadratic term, educational attainment, employment status, and marital status. Country-level controls are unemployment, inflation, Gini coefficient, media freedom, and democracy. "Log absolute HH income" refers to the log of the average nominal household income in column 5 and to the log of the average nominal household income per household member in column 6. Standard errors adjusted for clustering at country level are in brackets. Asterisks *, **, and *** denote significance at 10, 5, and 1 percent levels, respectively. The list of countries included in each regression is determined by data availability.

deviation in life satisfaction. Deaton (2008) reports similar findings using the World Gallup Poll data for 2006.

The "Happiness Gap" Increases with Age

The size of the gap in life satisfaction between residents of transition countries and nontransition countries increases sharply with age, as illustrated in Figure 3, which shows the nonparametric relationship between life satisfaction and age for transition countries and for nontransition countries that have a level of per capita GDP comparable to transition countries. The shape of the relationship between age and life satisfaction is strikingly different for transition and nontransition countries. In transition countries, happiness decreases monotonically with age, whereas in other countries the relationship between age and life satisfaction is U-shaped. Deaton (2008) provides similar graphs for individual countries based on World Gallup Data for 2006. If one controls for individual determinants of life satisfaction, such as employment status and education, life satisfaction in transition countries also becomes U-shaped, but the minimum point of happiness is achieved in transition countries on average at a substantially older age than in nontransition countries: 60 vs. 40 years old (see Frey and Stutzer, 2002, and Blanchflower and Oswald, 2004, on the relationship of happiness and age; see Graham, Eggers, and Sukhtankar, 2004, and Sanfey and Teksoz, 2007, on its application to transition countries). The relationship between age and life satisfaction estimated on the full sample of the World Values Survey is as follows:

$$LS = \underset{(.007)}{-.056}\ Age + \underset{(.00008)}{.00065}\ Age^2 - \underset{(.010)}{.035}\ Age \times TC + \underset{(.00011)}{.00019}\ Age^2 \times TC + \beta' X + \varepsilon$$

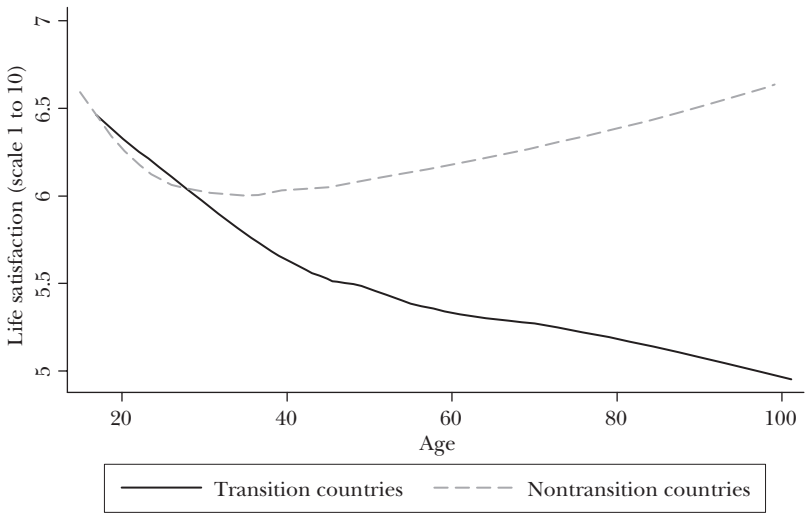
where LS stands for the respondent's life satisfaction, Age is the respondent's age in years, TC is a dummy that equals one if the respondent resides in a transition country, and X denotes all standard control variables (as in Table 2). The coefficients on the interaction terms of age and age-squared with the transition country dummy estimate the difference between the effects of age in transition and nontransition countries. The coefficient on the interaction between the transition country dummy and the linear age term is large, negative, and significant, whereas the coefficient on the interaction of the transition country dummy with the quadratic term is very small in magnitude (even though the quadratic term is positive, the gap between people in transition countries and those in nontransition countries increases with age for all ages below 92 years old). This evidence supports the conclusion that the happiness gap in transition economies increases with age.

Has Economic Growth Improved Happiness in Transition Economies?

Regressions presented in Table 2 also examine the relationship between life satisfaction and income in transition countries. Country-level income is measured by the log of per capita GDP and the respondent's household income is measured in three different ways: by the *relative* income of the respondent's household (in

Figure 3

Age and Life Satisfaction in Transition Countries and Nontransition Countries with per Capita Income Comparable to Transition Countries



Note: The lines depict the results of the nonparametric, locally weighted regressions (*lowess* smoother) with bandwidth = 0.8.

columns 1–4),[5] by the log of *absolute* nominal income of respondent's household (in column 5), and by the log of *absolute* nominal income of respondent's household *per household member* (in column 6). Country GDP per capita and household relative and absolute income significantly increase life satisfaction both in transition and nontransition countries, as one would expect based on the earlier survey by Frey and Stutzer (2002) and the articles by Deaton (2008) and Stevenson and Wolfers (forthcoming). Regressions presented in columns 3–6 also include interaction terms between the transition country dummy and these measures of country-level and household-level income. The coefficients on these interaction terms show that the sensitivity of life satisfaction to a country's wealth and household relative and absolute income is significantly larger in transition countries than in nontransition countries. (In these interaction terms, we subtract sample mean from the income variables, and as a result, the coefficient on the transition country dummy estimates the full difference in life satisfaction between transition and nontransition countries evaluated at the mean of the respective income variable).

Column 4 shows that, on average, a move up by one step on a ten-step relative income ladder in nontransition countries increases life satisfaction by 0.13 points

[5] The *relative* income of the respondent's household is the answer to the following question: "On this card is a scale of incomes on which 1 indicates the 'lowest income decile' and 10 the 'highest income decile' in your country. We would like to know in what group your household is. Please, specify the appropriate number, counting all sources of income." The number is discrete and ranges from 1 to 10.

(as shown by the coefficient on the relative household income) and by an additional .07 in transition countries (as seen by the coefficient on the transition country dummy in interaction with relative household income, which is significant at the 1 percent level) for a total of 0.20 points. This result is robust to including the full set of country dummies in the list of covariates.

Columns 5 and 6 show the effect of the *absolute* income level on life satisfaction. Since the income measures are nominal, to have comparability across countries we control for the full set of country dummies and limit the sample to wave 4 of the survey. The results are similar to the results for relative income. A 10 percent increase in total absolute household income increases life satisfaction in nontransition countries by 0.041 points and in transition economies by 0.067 points (0.041 + 0.026 = 0.067). A 10 percent increase in absolute household income *per household member* increases life satisfaction in nontransition countries by 0.023 points and in transition economies by 0.044 points (0.023 + 0.021 = 0.044).[6]

The fact that, in transition economies, life satisfaction is even more sensitive to changes in income than in other countries implies that, once the growth restarts, people in transition countries should start to feel better about their lives.[7] Do we see in the data an increase of life satisfaction in transition countries following growth? We do—once we look carefully.

For example, columns 3 and 4 of Table 2 show that people in transition economies express lower life satisfaction than would be predicted by their individual characteristics and the characteristics of their countries in all three waves of the data used. However, the size of the gap between the actual and predicted life satisfaction varies across waves: the gap increases from wave 2 of the survey to wave 3, and then diminishes by wave 4. The change between the second and the third waves of the survey represents the situation in the midst of the initial output decline (1994–1999). Wave 4 took place during the recovery and growth—between 1999 and 2003, albeit mostly in the early years of this period. This time period was when many transition countries just started their recovery, yet this initial increase in

[6] There is a decrease in the number of observations reported in column 6 of Table 2 due to the fact that data on the number of household members, necessary to calculate household income per household member, are missing for a large number of countries in the World Values Survey.

[7] The extent to which life satisfaction scores rise with income is controversial. Frey and Stutzer (2002) use World Values Survey data to argue that at high levels of per capita income, that is, starting at about $10,000 per capita, marginal utility of income diminishes. The fact that GDP growth does not result in increased happiness in rich countries, especially in the United States, is usually referred to as the "Easterlin paradox" (in reference to Easterlin, 1974, 1975). Jointly with the fact that even in the high-income countries (the United States included), those with high incomes are significantly happier than the poor, the Easterlin paradox is usually interpreted as evidence for the importance of *relative* rather than absolute income for happiness (see a survey of this literature in Clarke, Frijters, and Shields, 2008). However, Deaton (2008) shows a universal positive effect of income on life satisfaction in the World Gallup Poll data and discusses how these results can be reconciled with the earlier findings. Stevenson and Wolfers (forthcoming) use a few recent datasets including the World Gallup Poll, the Pew Global Attitudes Survey, and the World Values survey and obtain similar results. They conclude: 1) there is no diminishing marginal effect of income on happiness; and 2) the Easterlin paradox is not consistent with recent data even for rich countries, except, maybe, for the United States.

income was enough to boost life satisfaction. The two panels of Figure 2 illustrate this point as well: transition countries get closer to the best-fit line in wave 4 compared to wave 3 of the World Values Survey.

Has happiness in transition countries been improving since the fourth wave of the World Values Survey circa 2003? Until another round of the World Values Survey is published, we need to draw on other data sources to find out what has been happening.

In 2006, the European Bank for Reconstruction and Development and the World Bank conducted a survey of representative samples of individuals in 28 postcommunist countries entitled the "Life in Transition Survey." This survey included a question about life satisfaction. Unfortunately, the question about life satisfaction in this survey differs in wording and scale from the question in the World Values Survey, so that one should be extremely cautious about comparing answers.[8] But with no better data at hand across a range of transition countries, we transform the scale of the Life in Transition Survey question to one to ten (as in the World Values Survey) and treat the answers as if they were to the same question.

This exercise suggests that individual country experiences vary greatly. In eleven out of 23 transition countries (Albania, Armenia, Belarus, Estonia, Latvia, Lithuania, Moldova, Russia, Slovakia, Slovenia, and Ukraine), life satisfaction continues to grow after the fourth wave of the World Values Survey. In these countries, life satisfaction generally follows the U-shaped pattern of per capita GDP over time: decline in the early 1990s and growth starting in the late 1990s. Six countries (Bulgaria, Croatia, Czech Republic, Kyrgyzstan, Poland, and Romania) had no significant change in life satisfaction despite the recent growth. Six countries (Azerbaijan, Bosnia and Herzegovina, Georgia, Hungary, Macedonia, and Serbia and Montenegro) actually experienced a fall in life satisfaction during the whole observation period—which is different for different countries—despite the growth of per capita GDP. Five of these six, however, were involved in major civil conflicts. Only Hungary experienced a large and continuous fall in life satisfaction despite a successful economic transition and peace. However, the Life in Transition Survey in Hungary took place during the street riots following the announcement of the so-called "fiscal consolidation package"—a policy aimed at combating a fiscal deficit that involved a significant cut in real wages for public-sector employees and resulted in an actual decline in the average real wage (discussed in IMF, 2007). Overall, the comparison of the World Values Survey and the Life in Transition Survey yields mixed results, but in a majority of countries, we find growth in life satisfaction since the end of the 1990s. In this journal, Deaton (2008) compared the results of the World Gallup Poll conducted in 2006 with the results of the last wave of the World Values Survey and also found that in 2006 people in transition countries are happier than in earlier surveys.

[8] The Life in Transition Survey questionnaire asks the following question: "Do you agree with the following statement: All things considered, I am satisfied with my life as a whole now." Respondents can choose their answer from a scale from one ("Strongly disagree") to five ("Strongly agree").

Differences in Data Quality across Countries and Surveys

To some extent, patterns observed in the data—like the size of the happiness gap between transition and nontransition countries and the closing of this gap from the early to the mid 2000s—should only be viewed as suggestive. First, as Deaton (2005) points out, the nonresponse rate in household and individual surveys can severely undermine the representativeness of the samples. Our examination of the data from the World Values Survey suggests that samples in transition countries are substantially biased in favor of including more of those with low incomes. The ratio of average per capita income from respondents to the World Values Survey to the country's per capita Gross National Income (from the World Development Indicators of the World Bank) is about 0.85 in nontransition countries and only about 0.40 in transition countries. A straightforward calculation shows that if the sample quality in transition countries improved to the average level for nontransition countries, life satisfaction in the transition countries would increase by 0.33 points. Therefore, even though the gap between transition and nontransition countries decreases by roughly one-third once we take into account the quality of the sample, it remains rather large: above one point in wave 3 and above half a point in wave 4 of the World Values Survey.

Second, with regard to the comparison between the results of the World Values Survey and the Life in Transition Survey, as we already discussed, the wording of the life satisfaction questions and the scaling of answers in the World Values Survey and the Life in Transition Survey are not the same.

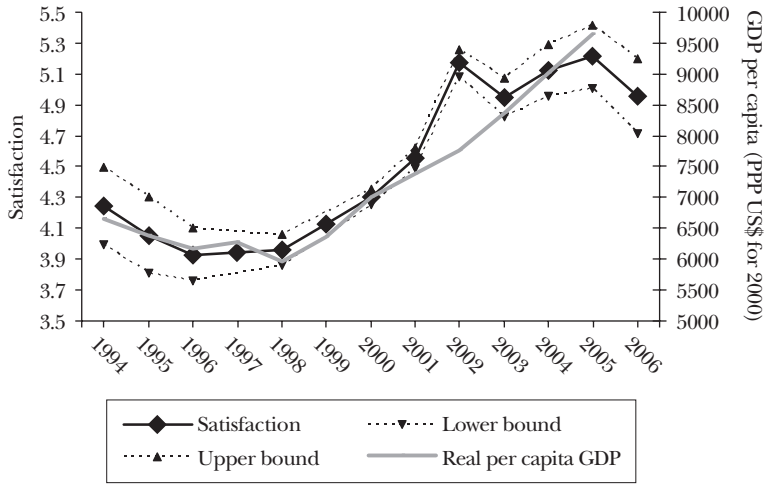
Third, similar examination of the quality of the samples in the Life in Transition Survey shows that the samples in this survey are less biased towards the poor compared to samples of the transition countries in the World Values Survey. We calculate that this effect implies that the estimate of the growth of life satisfaction between 1999–2003 (from the World Values Survey) and 2006 (from the Life in Transition Survey) may actually be overstated by 0.24 percentage points. After adjusting for this difference in sample quality, life satisfaction should still increase substantially between 2003 and 2006 for many countries as the estimated difference between the last wave of the World Values Survey and the Life in Transition survey is much larger in magnitude for Albania, Belarus, Estonia, Latvia, Lithuania, Moldova, Russia, and Ukraine.

With concerns about the data quality duly noted, the overall results suggest two findings: 1) there is a sizable gap in happiness between transition and nontransition countries, despite growth in life satisfaction in transition countries; and 2) this gap was closing from the end of the 1990s and early 2000s up to the mid 2000s.

Evidence from Longitudinal Data on Life Satisfaction for Russia

Another approach to examining the connection from economic patterns of transition economies to life satisfaction is to look at the longitudinal datasets that exist for a limited number of transition countries. For example, the Russian Longitudinal Monitoring Survey provides comparable data both for a repeated cross-section and for a panel of individuals for 11 rounds between 1994 and 2006. These data provide a

Figure 4
Dynamics of Life Satisfaction and per capita GDP in Russia



Source: For satisfaction, the Russian Longitudinal Monitoring Survey. For GDP per capita, the World Development Indicators database.
Note: The left scale shows life satisfaction for an average individual from the panel regressions with person fixed effects and other usual controls (with 95% confidence interval). In 1997 and 1999, there were no Russian Longitudinal Monitoring Surveys; we use linear interpolation. The right scale shows real per capita GDP in purchasing power parity–adjusted 2000 US dollars. According to the Penn World Tables, the purchasing power parity–adjusted GDP per capita in Russia reached $11,794 in 2004.

unique opportunity to measure the effect of GDP growth on happiness as the panel nature of this dataset—unlike most surveys used in the happiness research—allow us to control for individual fixed effects. In other words, we can check how economic conditions affect life satisfaction of the very same individuals.

Figure 4 presents the pattern of life satisfaction for an average Russian individual unexplained by his or her socio-demographic and economic characteristics (these are the estimates of time dummies from panel regressions with individual fixed effects and all the usual individual determinants of life satisfaction discussed with regard to Table 2). It is evident that life satisfaction roughly follows the pattern of Russia's GDP per capita, even though we control for household income. The "Easterlin paradox" does not seem to apply to Russia: unlike some evidence on the United States and other high-income countries (Easterlin 1974, 1995), growth in average income *does* increase average happiness in Russia.

The same pattern emerges when we look at the repeated cross sections of representative samples of Russian individuals. These findings are consistent with our results from comparison of the World Values Survey and the Life in Transition Survey. The effects of individual characteristics on life satisfaction are also consistent across surveys.

It is worth noting, however, that the sample in the Russian Longitudinal Monitoring Survey is also biased towards the poor, although much less so than in

the samples in the Life in Transition Survey or the World Values Survey. (The ratio of household consumption in the Russian Longitudinal Monitoring Survey sample to the analogous indicator from the national accounts is 0.85). In addition, the sample is biased towards people whose incomes grow more slowly compared to the national average from national accounts. Thus, growth in life satisfaction in Russia in the last few years is in all likelihood faster than estimated with data from the Russian Longitudinal Monitoring Survey.

To sum up, people in transition countries appear to have significantly lower life satisfaction compared to their counterparts in other countries with similar per capita incomes, unemployment, inequality, and inflation. This gap in life satisfaction is particularly large among the elderly. The gap reached its maximum in the middle of the 1990s and most probably has been closing since then. Some of this gap can be explained by differences in the survey samples in transition and nontransition countries, but a rather large gap remains. In the next section of this paper, we examine various theories that can potentially explain this gap.

Why are People in Transition Countries so Unhappy?

Why does transition undermine life satisfaction, and why are the elderly more adversely affected by transition? We consider a number of possible explanations that follow from the happiness literature as well as the actual testimonies of transition country residents collected during focus-group interviews conducted in nine Russian cities by the Institute for Comparative Social Research in Moscow (CESSI) and EBRD in the spring of 2007 (CESSI, 2007). In these focus-group interviews, respondents attributed their unhappiness to factors that can be classified into five broad categories: 1) a substantial increase in inequality and perceived unfairness of the new socioeconomic order; 2) a decrease in quality and quantity of public goods provision; 3) a sharp increase of volatility and uncertainty of earnings; 4) an increase in aspiration levels due to better information about the quality of life in high-income countries, and 5) an unforeseen depreciation of the human capital accumulated before transition as different skills are relevant in command and market systems.

Unfairness and Inequality

> *"In this country, we don't have a situation where everybody can have what they need. One person lives in luxury and another has to save a long, long time just for one apartment . . . Not even an apartment. Some people do not have anything to eat."*[9]

Several respondents in the focus-group interviews complained about increased inequality during transition (CESSI, 2007). Theoretically, the effect of inequality

[9] Henceforth, as epigraphs to various sections of the paper, we use the direct quotes from interviews of Russian people reported in CESSI (2007).

on life satisfaction is ambiguous. On the one hand, people may feel dissatisfied with the sharp increase in inequality during transition because they perceive it as unfair (Milanovic, 1998).[10] On the other hand, greater inequality may show that opportunities are opening up as a result of market-oriented reforms, which may be considered a positive factor. For example, Senik (2004) uses panel data on Russia to confirm the validity of the "tunnel effect" introduced in Hirschman and Rothschild (1973): high earnings of others may provide information on opportunities and therefore increase happiness. Bénabou and Tirole (2006) build a model with multiple equilibria where the effect of inequality may be different in different equilibria; their theory is consistent with evidence. Alesina, Di Tella, and MacCulloch (2004) show that inequality has a large negative and statistically significant effect on happiness in Europe but not in the United States. Grosfeld and Senik (2008) document a shift between two equilibria in transitional Poland: inequality was perceived by Polish citizens as a positive signal of increased opportunities in the beginning of transition, whereas a significant public aversion to inequality emerged in the second half of the 1990s.

The standard measure of income inequality is the Gini coefficient, which reflects dispersion of income in the economy, so that a score of zero represents perfect equality and a score of one represents a situation where one individual receives all the income in the economy and everybody else gets nothing. Since the Gini coefficient is a standard determinant of life satisfaction in the happiness literature, we include the average Gini coefficient from the World Development Indicators database for all available years in the 2000s in all regressions among other standard controls (see the results of regressions in Table 2 and column 1 of Table 3).[11] If we excluded the Gini coefficient from the list of controls, the gap in happiness between transition and nontransition countries would have increased by about 0.2 points in all waves (in calculations not reported in the tables). In the whole World Values Survey sample, the Gini coefficient has a positive (albeit not always significant) effect on life satisfaction (consistent with the "tunnel effect") as shown in column 1 of Table 3. In transition countries, in contrast, the effect of the Gini coefficient is negative. Column 2 of Table 3 reports regression results with an interaction term between the Gini coefficient and transition country dummy, which estimates the difference in the effects of the Gini in transition and nontransition countries. While in nontransition countries, the effect of inequality on happiness is positive (0.02), in transition countries it is negative ($0.02 - 0.07 = -0.05$), albeit also not quite statistically significant; at the same time, the difference in the effect

[10] Fehr and Schmidt (2002) provide extensive evidence that most individuals (including those in transition countries) attach a nontrivial value to fairness. Using the Life in Transition Survey data, Denisova, Eller, Frye, and Zhuravaskaya (2007) show that in many transition countries the public is in favor of altering the results of privatization and that these sentiments are driven by a sense of unfairness of extremely unequal privatization outcomes rather than a belief in the superiority of public ownership.

[11] A better measure of inequality would have varied over time in addition to varying across countries. Unfortunately, there are no good data on changes in the Gini coefficient for a large set of countries (Barro, 2000), and therefore we have to rely on cross-sectional variation.

for transition and nontransition countries is statistically significant. Alternative measures of Gini based on household survey data constructed by Milanovic and Ersado (2008) (available only for transition countries) also yield a negative, but statistically significant, effect of inequality on happiness in transition countries. Since inclusion of the Gini reduces the gap between life satisfaction in transition and nontransition countries and it increases dissatisfaction in transition, we can conclude that inequality does indeed contribute to low levels of life satisfaction in transition countries. In the rest of the paper, we focus on factors that can explain the gap in happiness between transition and nontransition economies after one takes into account inequality and other standard determinants of life satisfaction.

Deterioration of Public Goods

> *"If I plan to have a child then I will need to send him or her to kindergarten, but they are all so expensive now. Kindergartens used to be free but now almost none of them are . . ."*

In the command economy, most public goods were provided without charge at time of use. Since transition has sharply reduced the amount of resources in the hands of governments, public goods have deteriorated and users are often charged directly for public goods. This problem is most salient in health care. Many health outcomes indicate a substantial decline in public health. Even though infant and child mortality has been falling uniformly across transition countries, this has not been the case for adult mortality and life expectancy. Several transition countries—most importantly, Russia—have experienced a sharp decrease in life expectancy. According to the World Development Indicators, average life expectancy in transition countries fell from 69.6 years in 1990 to 67.7 in 1995 and then increased to 68.5 years in 2005—which was still below the 1985 level of 68.9 years. (In this journal (2005), Brainerd and Cutler offer possible explanations for the decline in life expectancy.) Similarly, tuberculosis, a preventable disease, which almost disappeared in high-income countries, grew sharply in the early transition and reached a peak in 2000.

A stark decline in the quantity or quality of public goods provision may have been responsible for the increased unhappiness. The World Values Survey asked questions about respondents' confidence in their country's education system, police, social security system, health care system, and justice system. The responses of transition country residents to these questions imply that confidence in public goods fell sharply during transition. Yet, a decline in confidence in public goods may be a mere consequence of general dissatisfaction, because people's feelings about their own life influence their perceptions of the world around them. In order to test whether public goods help to explain the difference in life satisfaction between transition and nontransition countries, we use *objective* country-level indicators of public goods provision from the World Development Indicators.

Table 3 reports regression results with life satisfaction as the dependent variable and all standard determinants of life satisfaction as regressors (just as in Table 2) and with additional explanatory variables that can potentially explain the

Table 3
Why is Life Satisfaction Lower in Transition?

	Dependent variable: life satisfaction (1–10)						
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
Transition country dummy * wave 2	−0.82***	−1.05***	−0.48*	−0.68***	−0.26	−0.31	0.27
	[0.22]	[0.27]	[0.26]	[0.25]	[0.29]	[0.29]	[0.27]
Transition country dummy * wave 3	−1.57***	−1.51***	−1.25***	−1.26***	−0.80**	−1.01***	−0.23
	[0.27]	[0.21]	[0.31]	[0.34]	[0.38]	[0.23]	[0.35]
Transition country dummy * wave 4	−0.89***	−0.95***	−0.70**	−0.66	−0.36	−0.46	0.09
	[0.31]	[0.25]	[0.32]	[0.39]	[0.37]	[0.28]	[0.34]
Transition country dummy * wave 2 * born before 1971						−0.55**	−0.56**
						[0.22]	[0.21]
Transition country dummy * wave 3 * born before 1971						−0.68***	−0.68***
						[0.10]	[0.09]
Transition country dummy * wave 4 * born before 1971						−0.55***	−0.57***
						[0.12]	[0.10]
Infant mortality			−0.48**		−0.58***		−0.58***
			[0.19]		[0.19]		[0.19]
Immunization			4.14*		5.14**		5.15**
			[2.39]		[2.45]		[2.46]
Immunization squared			−0.59*		−0.73**		−0.73**
			[0.33]		[0.34]		[0.35]
Emissions			−0.32***		−0.31***		−0.30***
			[0.11]		[0.11]		[0.11]
Income volatility				−4.84	−7.15***		−7.43***
				[3.31]	[2.60]		[2.56]
Inequality	0.02	0.02*	0.03***	0.02*	0.04***	0.02	0.04***
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
Transition country dummy * (Inequality − mean)		−0.07**					
		[0.03]					
R-squared	0.19	0.20	0.20	0.20	0.21	0.20	0.21

Note: All regressions have 155,555 observations from 54 countries, of which 16 are transition countries. The list of individual- and country-level controls is the same as in columns 3 and 4 of Table 2. Namely, all regressions include wave dummies; the following country-level controls—log per capita GDP, unemployment, inflation, Gini coefficient, media freedom, and democracy; and the following individual-level controls—age with a quadratic term, relative household income, educational attainment, employment status, and marital status. "Immunization" stands for the natural logarithm of the percentage of children between 12 and 23 months old immunized against diphtheria, pertussis, and tetanus. "Infant mortality" stands for the natural logarithm of infant mortality per 1000 infants. "Emissions" stands for the natural logarithm of carbon dioxide emissions in tons per capita. "Income volatility" is the standard deviation of per capita GDP growth in 1989–2004. "Inequality" is the country's Gini coefficient. Standard errors adjusted for clustering at country level are in brackets. Asterisks *, **, and *** denote significance at 10, 5, and 1 percent levels, respectively.

difference in life satisfaction between transition and nontransition countries. Column 1 presents the benchmark regression without any additional regressors, and the subsequent columns add various covariates. In the regression of column 3, we add regressors that reflect the following *outcomes* of public goods provision: infant mortality; the share of children immunized against diphtheria, pertussis (or whooping cough), and tetanus (DPT); and pollution as measured by per capita CO_2 emissions. Infant mortality and pollution have a negative and significant effect on happiness, while the effect of immunization has a positive linear and negative quadratic term, so the effect of immunization has a positive significant effect on happiness when overall immunization levels are low, reflecting the external effects of immunization. Our main interest, however, is in comparing the size and significance of transition country dummies in each wave of the World Values Survey between the baseline regression where public goods are not included (column 1) and the regressions with public goods (column 3). The inclusion of these controls for public goods provision decreases the magnitude of the difference in life satisfaction between transition and nontransition countries, but does not eliminate it; it remains statistically significant. Taking public goods provision into account reduces the size of the gap between life satisfaction in transition and nontransition countries from 1.57 to 1.25 points in wave 3 of the World Values Survey and from 0.89 to 0.70 in wave 4 of the World Values Survey. Overall, it appears that deterioration in public goods explains a significant part of the difference in life satisfaction between transition and nontransition countries.[12]

Income Volatility and Increased Uncertainty

> *"Instability is inherent in our life. It seems that everything is developing rather quickly now—if you want to find a job, you will find it, it is not a huge problem here. But even if you have a job, you don't feel secure or confident about the future. Even though business is developing very fast, it could come to an end very quickly. Regardless of how good a job you have and how good things are for you now, there is a feeling that anything could happen at any time. You cannot be confident that things will be good forever."*

People in transition may also have less life satisfaction because of an increase in economic uncertainty. In column 4 of Table 3, we test whether uncertainty can explain some of the difference between life satisfaction in transition and nontransition countries by adding a country-level measure of income volatility to our

[12] The results are robust to adding deaths from tuberculosis (regressions are available upon request). We do not include life expectancy in the regressions, as it is endogenous to life satisfaction: happier people live longer. Also, we do not include the indicators that measure the quantity of public goods provided, such as the number of hospital beds and physicians per 1000 people, because those do not capture the change in the quality of public goods and transition countries tend to have significantly higher values of these variables as a legacy from communist times. Moreover, it is the quality rather than quantity of education and healthcare, as well as the lack of access to those, about which the residents of transition countries usually complain (EBRD, 2007; CESSI 2007).

baseline regressions. In particular, as a measure of income volatility, we use the standard deviation of the logarithm of real per capita GDP growth after 1988. We find that income volatility has a large negative coefficient (albeit not statistically significant) and that once we add this variable as a covariate to the benchmark regression of column 1, the gap in life satisfaction between transition and nontransition countries falls substantially. The magnitude of the coefficient on the transition country dummy in wave 3 is reduced to 1.26 and in wave 4 to 0.66 (statistically insignificant). Moreover, once we take into account both the variation in public goods and in income volatility (column 5 of Table 3), the coefficients on transition country dummies fall even further: in wave 3, the gap in happiness between transition and nontransition countries is only 0.80, and in wave 4, it is only 0.36 (and not statistically significant). In other words, public goods and income volatility jointly explain about half of the "abnormally" low life satisfaction in transition.

Change in Aspiration Levels

> *"I am sure that we will not live like normal people, our lifetime will not be enough to see the change for the better. Throughout my life I worked as an engineer, lived in a good one-bedroom apartment, and was satisfied with my life. But when my brother-in-law went to Israel and told us how he lived there, then we realized that life could be different. He has two cars and a house! In our country, only a director of a plant could live like that, certainly not an engineer. Only then I realized how badly we live."*

One possible reason why life satisfaction may have dropped in transition countries is because it changed the aspiration levels of these countries' residents. Frey and Stutzer (2002) discuss the aspiration level theory and its implications for the effect of *relative* income on happiness. According to this explanation, higher life satisfaction before transition may have resulted in part from an unawareness of the consumption standards in high-income countries. As transition resulted in more openness, media freedom, and travel, transition-country residents realized how far their economies lagged behind, and this had a negative effect on happiness.

Testing this hypothesis is difficult, but one implication is that the negative shock on happiness should be lower in transition countries that were closer to western Europe and more open during the pre-transition times. In contrast to the "iron curtain" surrounding such countries as the Soviet Union and Czechoslovakia, in some countries of central and eastern Europe many residents could travel to neighboring countries and watch western television at home even before transition—for example, there was a substantial exchange of information between Hungary and Austria as well as the Slovenian part of Yugoslavia and Italy. Contrary to the prediction of the change-in-aspiration-levels explanation, there is no significant difference between formerly more open and less open transition countries. No such pattern is apparent in Figure 2, nor have we uncovered such a pattern in more formal regression analysis (not reported here). In fact, changed aspirations may have contributed to dissatisfaction both in the former Soviet Union and in Hun-

gary, but with different mechanisms at play. Soviet people are dissatisfied because in transition they learned how far their living standard is from the developed world; Hungarians are disappointed with the results of transition because at the beginning of transition they hoped that their living standard would catch up fast with the developed world, which they were familiar with even before transition.

Effects of Public Goods, Uncertainty, and Inequality for Young and Old

In Figure 3, we documented a large difference in the size of the happiness gap between transition and nontransition countries for different age groups. Therefore, to explain the puzzle of abnormally low life satisfaction in transition, it is important to know how deterioration of public goods, growth of uncertainty, and inequality affected the gap in life satisfaction for different age cohorts. In columns 6 and 7 of Table 3, we compare the gap in life satisfaction between transition and nontransition countries for two groups of respondents: "the young" (respondents, who were born in 1971 or later and thus did not reach 18 years of age before 1989) and "the old" (born before 1971). Column 5 presents estimates of the happiness gap for the two groups of respondents without taking uncertainty and public goods into account, whereas the regression in column 6 controls for the outcomes of public goods provision and income volatility.

In columns 6 and 7, coefficients on the transition country dummies for each wave of the survey (the first three rows) estimate the happiness gap for "the young," while the coefficients on the interaction of transition country dummies for each wave of the survey with the dummy indicating whether the respondent was born before 1971 estimate the difference in happiness between "the old" and "the young." Column 6 confirms that the happiness gap is much larger for the old than for the young. For the young, the difference in happiness between transition and nontransition countries in wave 3 is only 1.01 (compared to 1.01 + 0.68 = 1.69 for the old); and in wave 4, the difference is only 0.46 and is not significant (compared to 0.46 + 0.55 = 1.01 for the old). Furthermore, when we add proxies for public goods and income volatility (in column 6), the difference in life satisfaction between the young residents in transition and nontransition countries disappears altogether in all waves. For the older generations, the difference between those in transition and nontransition countries shrinks but remains large (particularly in wave 3) and statistically significant; it is equal to −0.91 (−0.23 − 0.68) in wave 3 and −0.48 (0.09 − 0.57) in wave 4.

Younger people in transition could be less affected by income volatility, inequality, and worse public goods for at least two reasons: first, young people, in contrast to older people, in transition countries did not live in a paternalistic command economy; and second, in all countries, the young are less dependent on such public goods as health care and social security. We include interactions of age with transition country dummies, measures of public good outcomes, income volatility, and inequality as additional regressors to our baseline specification. The results are reported in columns 1–3 of Table 4 (all regressions include the standard list of controls as in Tables 2 and 3). The coefficients in the first four rows indicate whether age affects the relationship between public goods, uncertainty, and inequality on the one hand and life satisfaction on the other in nontransition countries, whereas the coefficients in the next four rows indicate

Table 4
Understanding the Age Effect

	Dependent variable: life satisfaction (1–10)				
	(1)	*(2)*	*(3)*	*(4) Reform, continuous*	*(5) Reform, dummy*
Age ∗ Infant mortality	0.002				
	[0.002]				
Age ∗ Emissions	0.005*				
	[0.002]				
Age ∗ Income volatility		−0.054			
		[0.082]			
Age ∗ Inequality			0.001		
			[0.001]		
Transition country dummy ∗ Age ∗ Infant mortality	−0.015**				
	[0.006]				
Transition country dummy ∗ Age ∗ Emissions	−0.011*				
	[0.006]				
Transition country dummy ∗ Age ∗ Income volatility		−0.218*			
		[0.114]			
Transition country dummy ∗ Age ∗ Inequality			0.001		
			[0.001]		
Extent of reform in the year when finished education				0.30**	0.20*
				[0.12]	[0.10]
Age	−0.064***	−0.062***		−0.04*	−0.05**
	[0.006]	[0.006]		[0.02]	[0.02]
Age ∗ Age/100	0.068***	0.069***		0.06***	0.07***
	[0.007]	[0.007]		[0.01]	[0.01]
Reform in the current year				0.42*	0.49*
				[0.22]	[0.24]
Year when finished education				0.02	0.02
				[0.02]	[0.02]
Countries in the sample	all	all	all	TC	TC
Waves	all	all	all	4	4
Observations	155,555	155,555	155,555	26,385	26,385
R-squared	0.22	0.20	0.21	0.15	0.15
Countries	54	54	54	16	16
Transition countries	16	16	16	16	16

Note: The list of individual- and country-level controls is the same as in table 3 and columns 3 and 4 of Table 2. Namely, all regressions include wave dummies and the following country-level controls—log per capita GDP, unemployment, inflation, Gini coefficient, media freedom, and democracy—and the following individual-level controls—relative household income, educational attainment, employment status, and marital status. "Immunization" stands for the natural logarithm of the percentage of children between 12 and 23 months old immunized against diphtheria, pertussis, and tetanus. "Infant mortality" stands for the natural logarithm of infant mortality per 1000 infants. "Emissions" stands for the natural logarithm of carbon dioxide emissions in tons per capita. "Income volatility" is the standard deviation of per capita GDP growth over 1989–2004. "Inequality" is the country's Gini coefficient. Standard errors adjusted for clustering at country level are in brackets. Asterisks *, **, and *** denote significance at 10, 5, and 1 percent levels, respectively.

whether this relationship is different for transition countries. We find that in nontransition countries, age does not affect the link between life satisfaction and public goods, volatility, and inequality. In contrast, in transition countries, age aggravates the negative effects of public goods underprovision and increased volatility on life satisfaction. Thus, it is true that older people in transition countries are especially unhappy about bad public goods and income volatility.[13]

This result is consistent with the earlier findings by Alesina and Fuchs-Schündeln (2007), who show that the preferences toward redistribution of older East Germans converge more slowly toward the level of West Germans than the preferences toward redistribution of young East Germans. The plot of the movie "Good Bye Lenin," which Alesina and Fuchs-Schündeln use for the title of their paper, is based on the idea that accepting transition is extremely hard for the older generation.

The Age Effect and Human Capital Depreciation

> *"People who found a good place for themselves in life are very satisfied. But we are not. Just because we missed the last train."*

As we have shown, public goods and volatility explain all of the difference between unhappiness in transition and nontransition countries for the young, but not for older generations. In this section, we consider another potential explanation of the difference in life satisfaction which applies specifically to the old. It is related to the effect of transition on human capital and, therefore, the expected lifetime earnings of those who started their professional careers before transition. Much of the value of the human capital stock accumulated during the command economy could have been wiped out by transition because it was comprised of skills specific to the planned economy and irrelevant for the market economy. If transition delivered an unexpected negative shock to the present value of lifetime earnings, this should have negatively affected life satisfaction. We cannot test for this theory directly because specific skills are unobserved. Neither occupation nor education level capture the relative value of skills in the command economy and in the newly created market economy.

Yet this theory does generate a testable prediction. If the human capital hypothesis holds true, then those educated under the last years of the old regime should feel substantially less happy than those who were educated just after the start of the new regime. For example, students of the history of the communist party, if they had known the transition was coming, should have switched to studying foreign languages or computer science. In columns 4 and 5 of Table 4, we directly test this prediction. Using the sample of transition countries in the wave 4 of the World Values Survey, we regress individual life satisfaction on a variable which

[13] The magnitude of the triple interaction of age, transition country dummy, and public goods is rather small, however. For example, a 10 percent change in infant mortality affects the abnormal unhappiness of a 60 year-old resident of a transition country (relative to his/her counterpart in a nontransition country) by only 0.06 points less than for a 20 year-old.

measures whether the reform had begun by the time the respondent completed his or her education. We control for the age of the respondent, the current state of reform, and all the other standard individual and country-level controls. To proxy for the reform progress on a year-to-year basis, we construct an index using the European Bank for Reconstruction and Development (EBRD) Transition Indicators (⟨http://www.ebrd.com/country/sector/econo/stats/timeth.htm⟩), an index based on an average of country scores on privatization, enterprise restructuring, price liberalization, trade liberalization, financial liberalization, and infrastructure reform for each year. We construct a continuous measure of the extent of reform that varies from zero to three (used in column 4) and a dummy that switches from zero to one in the year when liberalization starts in a country (column 5). The differential timing of reforms across countries and differences in the time of study across individuals of the same age allow us to single out the human capital effect even controlling for age and educational attainment. As columns 4 and 5 of Table 4 illustrate, the human capital depreciation theory is consistent with the data. The presence and extent of reform in the year when the respondent completed education has a positive significant effect on life satisfaction controlling for age and educational attainment. We find that life satisfaction is 0.2 higher for people who were still in school when liberalization started. This effect is robust to using the Life in Transition Survey data instead of the World Values Survey.

An alternative interpretation of the results is as follows: A person who graduated just before transition and had secured a nice job is unhappy after the transition as this job is likely to be discontinued or paid less. A person who graduates right after the transition makes an informed career choice and therefore is happier. This explanation is very similar to the human capital depreciation story above and we do not have data to distinguish between the two.[14]

What Factors Explain the Unhappiness in Transition

> *"My parents got their apartment from the state. They had a guaranteed salary that was in line with prices in the shops. They had a guaranteed pension. They knew they would get free medical care, they studied for free and their jobs were guaranteed. So they had no need to worry about anything . . . I do not have any of these hopes."*

[14] Our analysis is based on the assumption that the graduation year is exogenous. Suppose, in contrast, that individuals can choose to drop out of school or stay in school longer. This could bias our results both ways. First, one would expect a behavioral response to difference in quality of education. Suppose that students in the same cohort privately observe idiosyncratic shocks to the quality of their education. Those who expect that their education would be useless under a market economy have an incentive to quit earlier in order to increase their happiness, while those whose education is useful would stay longer to increase their happiness. The observed gap in happiness between these two groups of people can increase or decrease depending on the relative size of the behavioral response of the two groups. If most of the action is among those with "useless" education, the resulting bias would be towards zero. Second, major socioeconomic transformation may have affected the unhappy individuals' willingness to stay in school. If unhappy people have a harder time staying in school in times of major change in the economy, our results would be biased upwards. Which of the two effects dominates is not clear.

We have presented evidence consistent with the hypotheses that depreciation of human capital, deterioration of public goods, and income volatility play a role in explaining lower life satisfaction in transition. Once we control for age, public goods, and income volatility at the same time (column 5 in Table 3), the value of the coefficient on wave 4 of the transition country dummy drops to 0.36—and is no longer statistically significant. We suspect that if we had more direct and precise measures of the change in quality of public goods and the depreciation of human capital over time, the coefficient on transition economies would fall still closer to zero. Moreover, our analysis of the sample selection effect (that the surveys in the transition economies are biased toward greater sampling of the poor and those whose incomes are not rising) implies that this coefficient is biased upward by about 0.33.

Thus, the seeming puzzle of abnormally low life satisfaction in transition countries largely disappears once we control for income, age, public goods, inequality, income volatility, and unanticipated changes in the value of human capital and account for the sample bias effect.

Robustness Checks

To make sure that our results are not driven by the particularly large measurement error of GDP in transition countries or by unmeasured changes in the unofficial economy in transition countries, we verified that the results are also robust to using various alternative data sources. Some of these have been mentioned in the preceding discussion. We also used alternative measures of economic well-being such as per capita GDP from the Penn World Tables; per capita GDP and consumption in constant U.S. dollars (without a purchasing power parity adjustment), energy use, and automobiles per capita. These results are presented in a technical appendix, available with this paper at ⟨http://www.e-jep.org⟩ and also at ⟨http://www.cefir.ru/ezhuravskaya/research/Appendix_happiness.pdf⟩.

The analysis above is based on the answers to the "life satisfaction" question. We have also repeated the whole exercise for the World Values Survey "happiness" question as well ("Taking all things together, would you say you are: Very happy, Quite happy, Not very happy, Not at all happy?"). The happiness and life satisfaction variables are highly correlated. The results for happiness are similar to those for life satisfaction. That is, there appears at first to be a substantial difference between transition and nontransition countries in happiness, but once we control for age, public goods, income volatility, human capital, and our other control variables, along with the selection bias between transition and nontransition countries, the remaining gap in happiness is virtually trivial.

Conclusion

The transition from communism to a more market-oriented economy did make people unhappy. But when we take a closer look, happiness in transition

countries is associated with income, very much like in other countries. Once we account for depreciation of human capital stock accumulated under central planning, deteriorating public goods, and rising income inequality, along with other individual and country-level controls, the difference in life satisfaction between transition and nontransition countries essentially disappears.

Our results imply that life satisfaction in transition countries will continue to rise conditional on continued economic growth. The first reason for this prediction is the subsequent growth of personal income and the eventual improvement in public goods provision. The second reason is a gradual reduction in the number of people brought up under the command economy who are suffering because of a depreciation of human capital and unmatched expectations of high public goods provision.

This increase in life satisfaction may have already happened, even though it has not yet been observed in the World Values Survey data. The latest available rounds of the World Values Survey were conducted in 1999–2003, either before or shortly after the resumption of growth in most transition countries. In more recent data—such as the Life in Transition Survey or the Russian Longitudinal Monitoring Survey—levels of happiness are rising, following the growth in per capita GDP. Both income levels and income growth rates of survey respondents are below per capita GDP levels and growth rates in these countries (because of problems with sample construction), so the improvement of the survey-based estimates of life satisfaction takes longer than economic recovery.

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