Life Satisfaction and the Economic Transition in Poland

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Abstract

Since 1989 Poland has been considered a leader in economic reform, but did the transition make its people happier? What has determined the course of happiness in Poland? This paper provides evidence of a collapse followed by recovery in life satisfaction. Despite the fact that GDP per capita quickly recovers to pre-transition levels, high unemployment and involuntary early retirement take their toll on the happiness of the Poles. The eventual recovery of life satisfaction is made possible by economic improvements, but also by birth cohort replacement – new generations are better adjusted to the new society and better equipped to cope with the challenges of transition.

JEL classifications: D60, I30, P20, P51
Keywords: subjective well-being, Poland, transition, birth cohort replacement.

1 Introduction

The transition from a planned economy to a Western free market model marked an important turning point for Poland and other countries in Central and Eastern Europe. How has this process affected the Poles' self-reported well-being? What have been the main determinants of life satisfaction in Poland in the two decades since the start of the transition in 1989? Has the impact of the transition been different for different population groups? These are the main questions this paper is concerned with. Economists studying the transition process assume that the changes in economic circumstances brought about by the transition, usually measured by changes in GDP per capita, translate into similar changes in well-being. This study contributes to the transition literature by testing this assumption. In Poland, the switch from communism to capitalism brought a collapse followed by a swift recovery in GDP per capita. In terms of subjective well-being, I find a similar collapse as for GDP per capita, followed though by a slower, yet steady, recovery. While GDP per capita is indeed one of the main determinants of life satisfaction, there are other factors, such as changes in people's marital and employment status, that delay the recovery in terms of subjective well-being after the initial collapse. It is the replacement of older generations, whose value system was formed under communist conditions, by younger generations, raised under new market conditions, that eventually allows life satisfaction to recover. Young, more educated, more skilled individuals generally fare the best during the Polish transition.

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Among the transition countries of Central and Eastern Europe, Poland is of special interest because it was very quickly identified as the "leading economic performer in the region" (EBRD, 1997, p.7). In fact, even before the demise of communism in 1989, Poland was far from the typical idea of a centrally planned economy, with reform efforts more serious than elsewhere. Then, in September 1989, Poland was the first Central and East European country to shrug off communism (for more on the Polish transition see Kołodko (1997, 2000); Rosser and Rosser (2004); Sachs (1992)).

There is a growing, yet far from exhaustive, literature dealing with subjective well-being in transition countries. A number of papers compare life satisfaction in transition economies with that recorded in non-transition countries (Frey and Stutzer, 2002; Helliwell, 2003; Hayo and Seifert, 2003; Sanfey and Teksoz, 2007). They typically find that individuals from the former Soviet Union report the lowest levels of life satisfaction, while Central and Eastern European countries score higher but still below OECD countries and even below most of the countries in Asia or Central and South America. In general, if one looks at survey evidence on self-reported happiness in Central and Eastern Europe compared with Western Europe, it seems that the political isolation of socialism was replaced by an "iron curtain" of unhappiness (Lelkes, 2006). Looking at a number of transition countries Easterlin (2009) finds that life satisfaction plummets and then recovers following the course of the economy as indexed by real GDP, but that this recovery falls short of that in GDP. The current study contributes to this literature by identifying some of the determinants of the life satisfaction trend during the transition in Poland, the role played by birth cohort replacement in the eventual recovery of life satisfaction being of special interest.

The following section describes the data used to establish the happiness trend in Poland since the fall of communism in 1989. It also presents the empirical strategy used to identify the determinants of this life satisfaction trend. Section 3 presents the findings on life satisfaction in Poland during its transition to capitalism, between 1989 and 2009. The last section outlines the conclusions of the analysis.

2 Data and methods

The data used in the analysis come from two main sources – the World Values Survey (WVS, 2009) and the Eurobarometer (EB)[2] – both nationally representative surveys conducted at multiple dates. The WVS is a multi-country survey that covers people's attitudes toward a broad range of issues, such as economics and politics, family and religious values, and environmental awareness. So far five waves of the WVS have

[2]The Eurobarometer surveys were downloaded at http://zacat.gesis.org/.

been implemented, four of which included Poland: wave 2 consists of data gathered in 1989 and 1990, wave 3 was collected in 1997, wave 4 in 1999, and wave 5 in 2005. Because wave 3 does not provide information on the employment status of the respondents, it will be omitted from most of the analysis. In Poland, the EB surveys including life satisfaction among the questions were first part of the Candidate Countries Eurobarometer, between 2001 and 2003, and then part of the Standard Eurobarometer once Poland joint the European Union in 2004. They have been conducted on at least an annual basis until as recently as 2009.

In the WVS life satisfaction is measured through the question "All things considered, how satisfied are you with your life as a whole these days?", with answers on a scale from 1 (most dissatisfied) to 10 (most satisfied). In the EB life satisfaction is assessed on a one to four scale. The question is "On the whole, how satisfied are you with your life in general?" and the answer categories, recoded so that higher numbers indicate a greater satisfaction, are not at all satisfied/ not very satisfied/ fairly satisfied/ very satisfied. In order to get a clearer picture of the life satisfaction trend over time, I also look at data from the Public Opinion Research Center in Poland (CBOS). A question on private satisfaction was included – "How are your life and your family's life?" – and the answer options were very bad/ bad/ neither good nor bad/ good/ very good. Grosfeld and Senik (2010) provide the mean values for private satisfaction for six surveys per year for the interval 1992-2005 in Table A1 of their study. Based on these values I compute annual means for life satisfaction for my analysis. The individual level CBOS data are not freely available, so they will not be analyzed. The values for life satisfaction by survey are listed in table B.1. Mean life satisfaction is shown both on the original scale used in each survey and on the 1-10 scale of the WVS[3].

Both the WVS and the EB provide information on gender, age, education, marital and employment status, occupation, and type of community, which will be used in the analysis. In the WVS there is also a question on income, the respondents being asked to rank their income on a scale from 1 to 10, with 10 being the highest. A detailed description of these variables and the way they are coded is provided in table A.1.

The macroeconomic indicators used to follow the economic trends in Poland are GDP per capita, the unemployment rate, the inflation rate, and the Gini coefficient for income as an indicator of inequality. Their values for the 1989 to 2009 time interval are shown in table B.2. The macroeconomic conditions most likely to be reflected by each life satisfaction observation are determined based on the following methodology: if the survey is carried out in the first half of the year, the corresponding macroeconomic indicators will be an average of the values for the previous and current year; if the survey is carried out in the second half of the

[3]For the EB, $LS_{1-10} = LS_{1-4} * 3 - 2$. For the CBOS, $LS_{1-10} = LS_{1-5} * 9/4 - 5/4$

year, the corresponding indicators will be those for the current year only[4].

In order to assess the success of the Polish transition, I analyze the trend of life satisfaction in Poland during the first two decades of transition. The assumption is that this trend is the result of the various changes that accompanied the process both at the macroeconomic and at the individual level. I first consider the impact of changes at the macroeconomic level on life satisfaction. The basic regression is:

$$LS_{st} = \alpha + \beta \mathbf{Y}_t + \gamma D_S + \epsilon_{st}, \tag{1}$$

where LS_{st} is mean life satisfaction in Poland at time t measured through survey s; $\mathbf{Y}_t$ represents the macroeconomic indicators at each date – GDP, unemployment, inflation, and the Gini coefficient; D_S are dummy variables identifying each survey; ϵ_{st} is the error term.

The analysis then focuses on the impact that individual level circumstances have on life satisfaction in Poland, according to the equation:

$$LS_{it} = \alpha + \beta W_T + \gamma \mathbf{X}_{it} + \epsilon_{it}, \tag{2}$$

where LS_{it} is the mean life satisfaction of individual i at date t; W_T are survey wave dummies; $\mathbf{X}_{it}$ represents the various socio-economic characteristics of individual i at date t, including gender, age, education, marital and employment status, occupation, type of community, and income; ϵ_{it} is the error term. Because the satisfaction variables are ordinal, this equation is estimated using the ordered logit model[5].

Because the WVS and the EB are not panel datasets, the same individuals cannot be followed over time. One way to partially correct for this shortcoming is to use year of birth fixed-effects. This way the life satisfaction of each cohort can be followed over time, even though the responses do not come from the same members of that cohort. By including year of birth fixed-effects in the regressions of life satisfaction on time, one can see to what extent changes in life satisfaction are driven by changes in the surveyed cohorts as opposed to changes in the objective life circumstances of each birth cohort. The equation above then becomes:

$$LS_{it} = \alpha + \beta W_T + \gamma \mathbf{X}_{it} + \phi_c + \epsilon_{ict}, \tag{3}$$

[4]Table B.1 shows the year corresponding to each survey.

[5]Ordinary least square (OLS) regressions were also run and led to quite similar results, suggesting that the findings are robust with regard to methodology. The fact that the results are quantitatively similar is not surprising for the WVS given that the answer scale is fairly wide – 1 to 10. However, even with the much narrower scale of the EB – 1 to 4 – the results obtained using the two methodologies are very similar.

where ϕ_c is the birth cohort fixed-effect. If the results obtained after estimating this equation are different from those obtained from equation (2), changes in life satisfaction are partially driven by the replacement of birth cohorts over time in the survey sample.

The analysis is carried separately for the WVS between 1989 and 2005, and for the EB between 2001 and 2009.

3 Findings

Subjective well-being in Poland first collapses in the first few years of the transition, and then recovers in a slow, but fairly steady manner (figure 1). The WVS data show that life satisfaction at the end of the 1990s is lower than it was at the onset of the transition in 1989, and this difference is statistically significant. By 2005 subjective well-being in Poland increases significantly, being higher than in 1989. It is harder to infer how the 1999 and 2005 values compare with peak happiness under communism. One way to do this is to use the 1989-1990 survey as a benchmark against which to judge later developments. Is mean satisfaction in this early survey really a good approximation of life satisfaction under socialism? Easterlin (2009) argues that it is probably lower than life satisfaction in the 1980s. Social anomie is considered one of the fundamental features of the Polish society throughout the 1980s. While many of the elements favoring anomie in the 1980s vanished with the fall of communism, other, new factors emerged. As early as 1988-1989, before unemployment was even officially recognized, people started realizing that it was very likely that they would lose their jobs. The rapid deterioration of the material situation around this time favors anomie as well, not only through a decline in living standards, but also because a lot of effort and stress come with the attempt to protect a falling living standard (Kolarska-Bobińska, 1990). If the life satisfaction level in Poland corresponding to wave 2 of the WVS is indeed under the peak value reached under socialism, then comparisons with the pre-transition situation as approximated by the wave 2 survey favor the post-1989 developments.

The CBOS data produce somewhat conflicting evidence with the WVS for the 1990s. They show an upward trend in happiness between 1992 and 1997, followed by a subsequent decrease. Is it possible to reconcile the increase in happiness after 1992 with the fact that, according to the WVS, life satisfaction in 1997 is significantly lower than in 1989? Figure 1 in Easterlin (2009, p. 134) indicates that it is possible. In a number of transition countries for which life satisfaction observations are available not only soon after the fall of communism and at the end of the 1990s, but also in the mid-1990s, happiness shows a clear U-shape, with a collapse followed by recovery. The hypothesis that the initial collapse in life satisfaction can be very

dramatic is supported by the evidence for the former GDR. Table A.2 in Easterlin's study shows that the decline in subjective well-being between 1990 and 1991 in East Germany is of such magnitude that the almost constant increase that follows through 1997 is not enough to make up for the initial collapse. The upward trend in happiness during the 2000s is confirmed by the EB data. Although there are some fluctuations, life satisfaction in Poland in every year starting with 2003 is significantly higher than in 2001.

How does the trend in subjective well-being compare with the changes in objective economic indicators brought about by the transition? Figure 2 shows annual and WVS interpolated series for GDP per capita, Gini coefficient, unemployment and inflation rates in Poland for the 1989 to 2009 time interval. The expectation among the Eastern Europeans was that the adoption of a democratic political system and the transition to a market economy would quickly lead to material prosperity (Kołodko, 2000; Zuzowski, 1998). This initial euphoria, however, was soon replaced by the realization that establishing the economic foundations required by the new system would initially bring considerable economic hardship (EBRD, 1998; Hayo and Seifert, 2003). Indeed, real GDP in Poland declined 11.6 percent in 1990 and 7.3 percent in 1991. This output decline was mainly the result of reduced demand following falling real wages, rising costs due to higher taxes, and higher cost of credit and a reduction in its availability (Rosser and Rosser, 2004). The economic growth resumed in 1992 and has continued ever since, making Poland the first transition country to bottom out and begin growing again, and by 1996 the only country to surpass its 1989 pre-reform level of real GDP per capita. The increase in GDP per capita was accompanied by an increase in inequality measured by the Gini coefficient. Inflation was rampant in the first two years of the Polish transition, but subsequently the situation improved fairly steadily and the inflation rate has been under 5 per cent since in 2002. Arguably the biggest challenge of the Polish transition has been the rampant unemployment. The socialist emphasis on employment as a universal entitlement led to a very high proportion of economically active people in the working age population by international standards. At the same time, the state-owned enterprises that dominated the economy employed more people than actually needed so that there would be no open unemployment (Mickiewicz and Bell, 2000). The transition to a market economy, by removing administrative controls, resulted in the emergence of unemployment. The state of being unemployed was fully recognized through the adoption of the Employment Law in December 1989, which stipulated that unemployment compensation was no longer a discretionary benefit (Maret and Schwartz, 1994). From no open unemployment during communism, the rates quickly reached the double digits by 1991, following the decrease in output. Although there was some improvement in the late 1990s, the unemployment rate in Poland remains higher than in neighboring countries and it took until 2008 for it to finally decrease below 10 per cent.

Overall, it appears that the life satisfaction trend most closely follows the trend of GDP per capita, but the recovery in subjective well-being takes longer. One explanation for this can be the persistence of high unemployment. Indeed, when looking at the effect of the various macroeconomic indicators on mean life satisfaction (table 1), GDP per capita is the strongest predictor of happiness. Its impact is stronger after 2000, while the predictive power of the unemployment rate is stronger in the first decade of transition. During the 1989-2000 time interval, it takes a 5.2 per cent increase in GDP to make up for an increase in unemployment of one percentage point, all other things equal. For the 2000-2009 interval a slim 0.6 per cent increase in GDP is sufficient. The selected macroeconomic indicators can explain most of the variation in life satisfaction from one survey date to the next, as reflected by the R^2 values which are very close to 1.

Given the substantial costs that the transition generated for important segments of the population, it is not surprising that in a study carried out in 1999 by the Public Opinion Research Center in Poland, but also in the Czech Republic and Hungary, many more people believe that the losses from transition exceeded the gains than the reverse, and that their "material conditions of living are now a little worse" (Svejnar, 2002). In the same study though, the largest majority of individuals feeling that it was worthwhile to change the political and economic system was found in Poland.

The analysis now focuses on the individual level determinants of life satisfaction and the role they play in explaining the happiness trend in Poland during the transition. What changes in the socio-economic situation of the Poles drive the collapse and subsequent recovery in subjective well-being? Column (1) of table 2 confirms that life satisfaction at the end of the 1990s is significantly lower than it had been in 1989-1990, while in 2005 it is significantly higher. Controlling for demographics – gender, age, and education – ensures that the changes in life satisfaction are not simply the result of changes in the demographic composition of the sample across waves. A U-shape of life satisfaction over the life course emerges, with the middle-aged being the least satisfied group.

The decrease in self-reported well-being in Poland during the first decade of transition can be explained by changes in the marital and employment status of the population. Indeed, when controls for these two life circumstances are added to the regression of life satisfaction on time in column (2) of table 2, the coefficient for wave 4 is no longer statistically significant. Married and employed individuals are the most satisfied with their lives. This is consistent with the findings of previous studies (for marriage see Blanchflower and Oswald (2004); Frey and Stutzer (2002); Layard (2005); Waite (1995); Waite and Lehrer (2003); Zimmermann and Easterlin (2006), or Bernhardt and Fratczak (2005) for Poland; for employment status see Blanchflower and Oswald (2004); Frey and Stutzer (2002)). However, both the percentage of married individuals and that

of employed individuals decreases in the WVS between 1989 and 1999 (table B.3), which explains why life satisfaction in Poland also decreases. In terms of employment, not only does unemployment increase, as the official data also show (table B.2), but the percentage of people not in the labor force increases as well. In order to avoid unemployment, many chose early retirement as the lesser evil. In 1991, the number of pensioners was five times the rate in the previous year (World Bank, 2003). Over time, stricter rules were implemented in order to reduce expenditures, such as stricter eligibility criteria and the indexation based on prices for pensioners' consumer basket (Czepulis-Rutkowska, 1999; Rapacki, 2001), curbing the increase in the proportion of pensioners in the population.

The decrease in marriage rates is due to a higher likelihood of people staying single, but also to an increase in widowhood. This latter increase occurs for women only and is consistent with the increase in mortality among men – by 1991, the difference in female and male life expectancy at birth reached 9.2 years. Since then, male mortality has been showing a steady recovery, largely attributable to falling mortality among men aged 40-64 (Nolte et al., 2000). Looking at mass privatization programs during the transition, Stuckler et al. (2009) found that they were associated with a short-term increase in mortality rates in working-age men, with unemployment rates as a mediating factor. The increase in mortality rates can also be linked to a jump in alcohol consumption after the fall of communism. Even as overall mortality started to decline and life expectancy started to increase in Poland after 1992, mortality due to liver cirrhosis and to causes directly attributable to alcohol leveled off or even increased. As a result of the numerous challenges that people were faced with, "the sudden switch to a market economy [...] aroused profound anxieties, as most households [...] wondered whether they would be able to stay afloat - much less prosper - in the new system" (Sachs, 1990). It is therefore not surprising that people started using alcohol as a coping mechanism. This was facilitated by the fact that the number of alcohol outlets in Poland increased from approximately 30,000 in the late 1980s to 150,000 at the beginning of the 1990s, while the relative prices of spirits decreased in the 1990s to almost half of the 1980s level (Moskalewicz, 2000; Moskalewicz et al., 2000; Wojtyniak et al., 2005).

The subsequent increase in life satisfaction in Poland between 1999 and 2005, to a level even higher than in 1989, cannot be explained by changes in individual circumstances. Even after controlling for a variety of socio-economic characteristics in columns (1)-(3) of table 2, the coefficient for wave 5 is still positive and significant. Indeed, table B.3 shows no improvement in the marital or employment situation of the respondents between 1999 and 2005. One possible explanation for this increase in happiness is the fact that by 2005 GDP per capita reached levels much higher than at the beginning of the transition process, and, as table 1 showed, the impact of GDP on happiness is much stronger after 2000 than before. Another explanation

is the replacement of generations that occurs between 1989 and 2005. Columns (4)-(6) of table 2 show the results of year of birth fixed-effects regressions of life satisfaction on various socio-economic variables. Each individual year of birth identifies a cohort. A coefficient of over 0.2 for wave 5 when an ordered logit regression is run in column (1) quickly becomes virtually zero in column (4) when demographic characteristics are controlled for and birth cohort effects are eliminated. Therefore, the replacement of generations plays a role in the recovery of happiness in Poland by 2005.

Younger generations, entering the WVS sample in the latter waves of the WVS, are more satisfied with their lives than the older generations who are exiting the sample. This becomes apparent when life satisfaction is regressed on dummy variables identifying each of five birth cohorts, in table 3. Controlling for marital and employment status in column (3) further increases the happiness advantage of people born in 1974 or later compared with older cohorts. Only the addition of occupation, income, and town size finally explains to some extent why the younger generations are happier than the older ones. Young people are not spared during the transition. In 1993, about 64 per cent of the registered unemployed were younger than 35 (Kotowska, 1995). However, they are better adjusted to the new society and better equipped to deal with the challenges of transition than older generations, because they have been "[r]aised [...] in the wild" (Easterlin, 2009, p.138). These findings are consistent with the higher degree of adaptation among younger generations that Alesina and Fuchs-Schündeln (2007) find in the former GDR.

Further evidence of a higher degree of adaptation among young people to the transition challenges is found by looking specifically at the effect of employment status on life satisfaction for various birth cohorts (table 4). Although the percentage of unemployed individuals is much higher for the youngest cohort compared with older ones, the relative life satisfaction of the unemployed compared with employed individuals is not as low as it is among the older cohorts. This does not mean that younger people prefer to be unemployed. However, unlike older generations, who grew up without ever expecting to be faced with unemployment, they are much less likely to be blindsided by its occurrence, which can explain why it has a smaller effect on their happiness levels.

The ordered logit regressions of life satisfaction on time using the EB data gathered starting in 2001 confirm the mostly upward trend of life satisfaction during the second decade of transition (table 5). Although table B.3 showed improvements in the marital and employment status of the respondents after 2001, changes in these and other life circumstances do not appear to be the driving force behind the upward trend in subjective well-being. Indeed, adding these variables among the regression controls in columns (2) and (3) has little effect on the coefficients for time. Furthermore, the inclusion of year of birth fixed effects in

the regressions in columns (4)-(6) makes much less of a difference than it did for the WVS. Because the time span of the EB is fairly short, the proportion of the various cohorts in the sample does not change much. Therefore it is not surprising that the changes in life satisfaction between 2001 and 2009 do not appear to be the result of cohort replacement. Most likely, what explains the happiness increases during this time interval are the continuous improvements with respect to GDP per capita. Because no income variable is available in the EB, this hypothesis cannot be tested here at the individual level.

Different socio-economic groups fare differently during the transition. Previous studies have identified various population categories for which the transition has brought more challenges: women, less educated, less skilled individuals, farmers, and people living in rural areas. Post-1989, women bear a higher burden of unemployment, have a greater risk of long-term unemployment, and the wage gap with men is significant. A decline in the access to child care facilities and the gap between male and female wages make it more difficult for women to stay in the labor market (Fodor, 2005; Kotowska, 1995). New market conditions are also difficult for the hundreds of thousands of people who used to work in industrial enterprises, where a sharp loss of jobs occurred. In general, less skilled and less educated individuals are the most likely to be unemployed in post-socialist Poland. The risk of unemployment is highest for Poles with basic vocational education, followed by those with a general secondary education. White-collar workers are not only more likely to be employed, but their relative earnings compared with blue-collar workers also increased after the fall of communism. This is in sharp contrast with the situation under socialism, characterized by a bias toward blue-collar workers (Rutkowski, 1996). The hundreds of thousands of farmers working on small and inefficient farms were quickly affected by the transition as well, because they lost their production subsidies. As the prices of goods that they sold increased at a much slower pace than the price of products bought by peasants, a dramatic decline in their incomes occurred. In general, people in rural areas tend to be worse off than people in urban areas and particularly compared with those in the capital city after the fall of communism.(Ellman, 1997; Gorlach and Mooney, 1998).

As table 4 showed for younger cohorts, the fact that a certain population category is faced with more challenges does not automatically translate into a lower level of life satisfaction. So how do the population groups listed above fare post-1989 when self-reported life satisfaction is used to measure their well-being? In order to assess the change in their relative well-being during the transition, interactions with time are included in the year of birth fixed-effects regressions. The coefficients for the interaction terms are presented in table 6. For the WVS, 1990 is the reference survey, while for the EB, the reference year is 2001. This means that a positive interaction coefficient shows an improvement over time in the life satisfaction of a

given socio-economic group relative to the omitted category. For gender, men are the omitted group; for age, those 29 or younger are the reference; for education in the EB, those with only primary education are omitted; for occupation, the reference group are those with white collar jobs; for type of community, the smallest size is omitted. Column (1) in table 6 points to an increase in the education premium between 1989 and 1999, combined with a decrease in the relative life satisfaction of those with lower skills, particularly those working in agriculture. People living in large cities improve their relative well being compared with those in smaller communities. In all cases though, the gains disappear by 2005, as shown in column (2). The relative happiness of those still in school decreases after 2006 compared with 2001 – columns (4)-(7). Probably related to this is the decrease in the relative life satisfaction of those who never had a job compared with those employed. There is no change in the happiness of women relative to men.

4 Summary and Conclusions

During the first two decades of transition, life satisfaction in Poland first collapses and then recovers. Changes in economic circumstances are an important driving force behind these changes in life satisfaction. The first couple of years after the fall of communism were marked by an economic collapse, accompanied by a collapse in subjective well-being. However, while the economic recovery was fairly swift, especially in terms of GDP per capita which was back to its pre-transition level as early as 1996, the recovery in terms of life satisfaction was much slower. High unemployment and involuntary early retirement took their toll on the happiness of the Poles. Another reason why life satisfaction in 1999 was lower than in 1989 was the decrease in the percentage of married people as a result of more individuals staying single and of an increase in widowhood among women. In addition to significant increases in GDP per capita, the eventual recovery of life satisfaction by 2005 was made possible to an important extent by birth cohort replacement. As the generations raised under capitalism replace the generations raised under communism in the population, subjective well-being tends to increase even if objective circumstances do not necessarily improve. Young people are simply better equipped to deal with the specific problems of capitalism compared with the older generations "well-embarked on a life course set under the conditions of the socialist greenhouse" (Easterlin, 2009, p.138).

Was the Polish transition a success when considering the level of self-reported happiness? Given the fragmentary nature of the data, it is hard to say with certainty how current life satisfaction in Poland compares with the pre-transition level. Piecing the various data sources together, however, it appears that happiness today is higher than in 1989 even when cohort effects are controlled for. As older generations are replaced by

younger ones, average life satisfaction is even more likely to increase. It is clear though that the transition paid off for some people – the young, more educated or better skilled, or for those living in urban areas – but not for others – the middle-aged, less educated, or unskilled. If more had been done to help those most vulnerable to the transformations involved by the transition, the overall outcome could have been better. Ultimately, however, what will allow for a high proportion of the population to embrace the new regime is the replacement of generations.

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Figure 1: Life satisfaction in Poland, 1989-2009

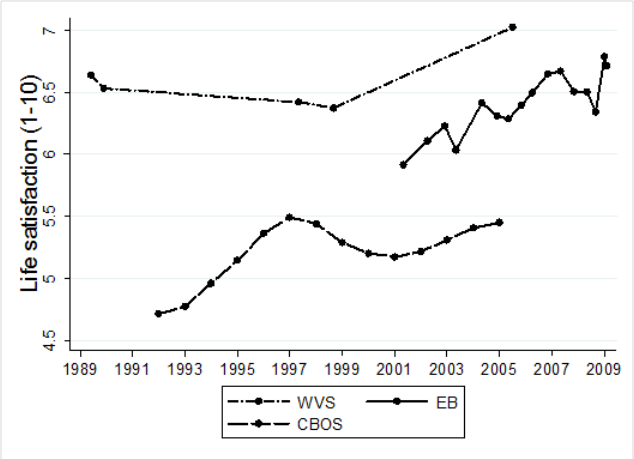
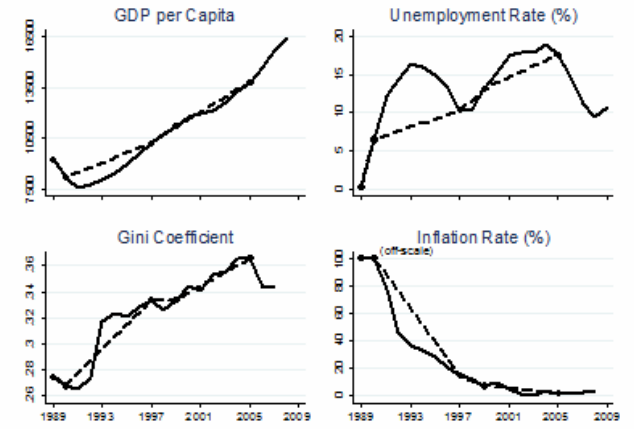


Figure 2: GDP per capita, Gini coefficient, unemployment rate, and inflation rate in Poland, 1989-2009



Source: See table A.1.

Notes: The values for the inflation rate for 1989 and 1990 are over 100% and therefore are off-scale and set at 100% in the graph. For each macroeconomic indicator, the solid line shows the annual series, while the dashed line shows the interpolated series obtained when using only the years when the WVS was carried out in Poland - 1989, 1990, 1997, 1999, 2005.

Table 1: Ordinary least square regressions of life satisfaction on selected macroeconomic indicators

	(1)	(2)	(3)
	1989-	1989-	2000-
Variable	2009	2000	2009
Ln GDP per capita	1.236**	1.103**	2.074**
	(6.61)	(6.80)	(5.03)
Unemployment rate	-0.036**	-0.056**	-0.012
	(-3.36)	(-7.26)	(-0.70)
Inflation rate	-0.000	0.001+	0.011
	(-0.02)	(1.93)	(0.81)
Gini coefficient	1.260	5.766**	1.158
	(1.71)	(5.30)	(1.78)
Constant	-6.109**	-5.981**	-14.546**
	(-3.57)	(-3.80)	(-3.55)
Observations	31	13	19
R^2	0.966	0.996	0.985
Surveys	WVS, EB, CBOS	WVS, CBOS	WVS, EB, CBOS

Because life satisfaction data come from three different surveys, dummy variables for each dataset are included among the controls. Significance levels: ** p<0.01, * p<0.05, + p<0.10.

Table 2: Ordered logit and year of birth fixed-effects regressions of life satisfaction, 1989-2005, WVS

	Ordered logit			Fixed-effects		
	(1)	(2)	(3)	(4)	(5)	(6)
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variable	(t-stat)	(t-stat)	(t-stat)	(t-stat)	(t-stat)	(t-stat)
Wave 2			omitted survey			
(1989-1990)						
Wave 4	-0.203*	-0.103	0.083	-0.438**	-0.361**	-0.201
(1999)	(-2.55)	(-1.29)	(0.85)	(-3.15)	(-2.64)	(-1.21)
Wave 5	0.238**	0.383**	0.510**	0.030	0.120	0.095
(2005)	(3.39)	(5.30)	(4.77)	(0.17)	(0.68)	(0.39)
Male	-0.041	-0.084	-0.173*	-0.069	-0.124	-0.203+
	(-0.69)	(-1.36)	(-1.98)	(-0.89)	(-1.55)	(-1.87)
Age 30-44	-0.326**	-0.520**	-0.382**	0.068	-0.114	-0.084
	(-3.88)	(-5.05)	(-2.74)	(0.33)	(-0.55)	(-0.31)
Age 45-59	-0.449**	-0.630**	-0.348*	0.306	0.261	0.663
	(-5.07)	(-5.91)	(-2.39)	(0.92)	(0.79)	(1.57)
Age 60+	-0.259*	-0.343*	0.083	0.545	0.655	1.323*
	(-2.31)	(-2.46)	(0.39)	(1.12)	(1.37)	(2.15)
Age completed education	0.047**	0.040**	0.032+	0.073**	0.062**	0.047*
	(4.10)	(3.48)	(1.72)	(4.85)	(4.12)	(2.00)
Single		-0.256*	-0.082		-0.546**	-0.227
		(-2.42)	(-0.56)		(-3.92)	(-1.33)
Divorced/ Separated		-0.613**	-0.431+		-0.775**	-0.585+
		(-3.62)	(-1.95)		(-3.38)	(-1.86)
Widowed		-0.375**	-0.459*		-0.439*	-0.475*
		(-2.69)	(-2.32)		(-2.56)	(-2.02)
Unemployed		-0.847**	-1.148**		-1.172**	-1.383**
		(-6.21)	(-4.73)		(-6.48)	(-4.60)
Not in labor force		-0.142+	-0.229		-0.278**	-0.349+
		(-1.88)	(-1.60)		(-2.86)	(-1.93)
Blue collar (no agriculture)			0.184+			0.143
			(1.78)			(1.14)
Agriculture			-0.177			-0.205
			(-1.09)			(-1.04)
Never had job			0.313			0.413
			(1.31)			(1.48)
Income bracket			0.200**			0.240**
			(7.40)			(7.61)
Town size 2,000-20,000			-0.106			-0.084
			(-0.82)			(-0.53)
Town size 20,000-100,000			-0.014			0.041
			(-0.11)			(0.26)
Town size $\geq$ 100,000			-0.036			-0.008
			(-0.31)			(-0.06)
Constant				5.276**	5.842**	4.676**
				(15.79)	(17.45)	(8.84)
Observations	3,768	3,761	2,171	3,768	3,761	2,171
R^2				0.064	0.087	0.154
Pseudo R^2	0.006	0.011	0.024			
Chi^2	98	167	184			
Log likelihood	-7,973	-7920	-4505			

Omitted categories: age 29 or less, married, employed, white collar, town size $\leq$ 2,000.
Cut values for ordered logit regressions not shown.
Significance levels: ** p<0.01, * p<0.05, + p<0.10.

Table 3: Ordered logit regressions of life satisfaction on cohort, 1989-2005, WVS

	(1)	(2)	(3)	(4)
	Coeff.	Coeff.	Coeff.	Coeff.
Variable	(t-stat)	(t-stat)	(t-stat)	(t-stat)
Birth year $\leq$ 1929	0.066	0.237*	0.317*	0.384*
	(0.64)	(2.08)	(2.45)	(2.02)
Birth year 1930-1944	-0.125	-0.058	-0.071	-0.013
	(-1.55)	(-0.67)	(-0.79)	(-0.10)
Birth year 1945-1959			omitted cohort	
Birth year 1960-1973	0.329**	0.302**	0.354**	0.276**
	(4.28)	(3.79)	(4.28)	(2.62)
Birth year $\geq$ 1974	0.521**	0.434**	0.650**	0.240
	(4.70)	(3.85)	(4.88)	(1.28)
Controls	wave	wave, gender, education	wave, gender, education, marital status, empl. status,	wave, gender, education, marital & empl. status, occupation, income, town size
Observations	3,964	3,768	3,761	2,171
Pseudo R^2	0.005	0.007	0.011	0.023
Chi^2	84.502	99.140	167.192	177.952
Log likelihood	-8,395	-7,971	-7,918	-4.507

Significance levels: ** p<0.01, * p<0.05, + p<0.10.

Table 4: The impact of employment status on life satisfaction by birth cohort and wave, 1989-2005, WVS

	Birth year				
	$\leq$1929	1930-1944	1945-1959	1960-1973	$\geq$1974
Wave 2 (1989-1990)					
% unemployed	0.0	0.2	1.1	1.8	
Coefficient		1.979**	-1.082+	-0.602	
% not in labor force	79.9	35.3	13.6	40.6	
Coefficient -0.186	-0.131	-0.294	-0.300		
Wave 4 (1999)					
% unemployed	0.0	2.2	7.8	11.4	20.0
Coefficient		-1.427	-1.209**	-1.275**	-0.679
% not in labor force	97.2	86.5	21.2	14.1	40.0
Coefficient	-1.418+	-0.478	-0.460	0.041	-0.331
Wave 5 (2005)					
% unemployed	2.1	0.0	11.5	12.7	18.7
Coefficient	-0.121		-1.709**	-0.590	-0.182
% not in labor force	96.8	97.3	41.9	9.6	31.2
Coefficient	-0.416	-0.410	-0.438	0.169	0.402

The coefficients are from regressions of life satisfaction for each cohort. Omitted category: employed. Other controls: gender, age, age squared, education, marital status. Significance levels: ** p<0.01, * p<0.05, + p<0.10.

Table 5: Ordered logit and year of birth fixed-effects regressions of life satisfaction, 2001-2009, EB

	Ordered logit			Fixed-effects		
	(1)	(2)	(3)	(4)	(5)	(6)
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variable	(t-stat)	(t-stat)	(t-stat)	(t-stat)	(t-stat)	(t-stat)
Year 2001			omitted year			
Year 2002	0.155	0.181	0.180	0.049	0.058	0.059
	(1.37)	(1.61)	(1.60)	(1.22)	(1.45)	(1.47)
Year 2003	0.155	0.167+	0.167+	0.044	0.044	0.046
	(1.62)	(1.74)	(1.73)	(1.28)	(1.28)	(1.33)
Year 2004	0.426**	0.478**	0.487**	0.120**	0.130**	0.136**
	(4.11)	(4.63)	(4.68)	(3.23)	(3.50)	(3.68)
Year 2005	0.276**	0.312**	0.326**	0.071*	0.078*	0.087**
	(3.05)	(3.46)	(3.61)	(2.16)	(2.36)	(2.65)
Year 2006	0.387**	0.418**	0.436**	0.104**	0.107**	0.118**
	(4.33)	(4.68)	(4.86)	(3.17)	(3.25)	(3.57)
Year 2007	0.624**	0.631**	0.652**	0.180**	0.173**	0.184**
	(6.93)	(7.01)	(7.24)	(5.44)	(5.19)	(5.54)
Year 2008	0.463**	0.471**	0.480**	0.114**	0.108**	0.118**
	(5.19)	(5.28)	(5.38)	(3.39)	(3.19)	(3.48)
Year 2009	0.569**	0.571**	0.587**	0.150**	0.142**	0.154**
	(6.63)	(6.46)	(6.63)	(4.54)	(4.17)	(4.53)
Constant				2.657**	2.793**	2.872**
				(62.50)	(63.67)	(63.73)
Controls	gender, age, education	gender, age, education, marital status, empl. status,	gender, age, education, marital status, empl. status, occupation, location	gender, age, education	gender, age, education, marital status, empl. status,	gender, age, education, marital status, empl. status, occupation, location
Observations	15,376	14,529	14,512	15,376	14,529	14,512
R^2				0.121	0.144	0.151
Pseudo R^2	0.056	0.067	0.071			
Chi^2	1,448	1,604	1,696			
Log likelihood	-15,685	-14,660	-14,577			

Cut values for ordered logit regressions not shown. Significance levels: ** p<0.01, * p<0.05, + p<0.10.

Table 6: Winners and losers of the transition

	WVS: wave 2 omitted		EB: 2001 omitted				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variable	Wave 4 (1999)	Wave 5 (2005)	2004	2006	2007	2008	2009
Gender: reference male							
Women	-0.112	-0.120	0.009	-0.078	-0.051	-0.086	-0.044
Education: WVS-continuous; EB-reference primary education							
Age completed educ.	0.096**	0.049					
High school			0.028	-0.016	0.024	0.105	0.002
University			-0.177	-0.214+	-0.149	-0.116	-0.172
Still in school			-0.159	-0.209+	-0.246*	-0.193+	-0.373**
Occupation: reference white collar							
Blue collar (except agric.)	-0.552*	-0.046	0.053	0.003	-0.015	-0.047	-0.013
Agriculture	-1.032**	-0.435	0.184	0.068	-0.017	-0.123	0.010
Never had job	2.992*	3.160*	-0.515**	-0.350*	-0.485**	-0.503**	-0.448**
Town size: reference 2,000 or less							
2,000-20,000	0.490	0.513+					
20,000-100,000	0.435	-0.196					
100,000 or more	0.900**	0.286					
Type of community: reference rural							
Small or middle sized town			0.055	0.011	0.103	0.107	0.073
Large city			-0.200+	-0.167+	-0.127	-0.021	-0.136

Coefficients obtained by including interaction terms in year of birth fixed-effects regressions.
Controls for demographics – gender, age, education – included in every regression.
Significance levels: ** p<0.01, * p<0.05, + p<0.10.

Appendix A

Table A.1: Variable description

Life satisfaction	
WVS	All things considered, how satisfied are you with your life as a whole these days? "1" means dissatisfied, "10" means satisfied.
EB	On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead? Answers were recoded so that "1" means not at all satisfied and "4" means very satisfied.
CBOS	CBOS: How are your life and your family's life? The answer options were very bad, bad, neither good nor bad, good, very good, coded so that "1" means very bad and "5" means very good.
Education	
WVS	At what age did you (or will you) complete your full time education, either at school or at an institution of higher education? Please exclude apprenticeships. (ACE) The variable is truncated to values between 7 and 23, with a higher value taken to imply a higher level of education.
EB	The education variable is built using two different survey questions, depending on their availability: 2001 - 2004 surveys: What is your level of education? [1] uncompleted primary school; [2] primary school; [3] basic vocational; [4] general and technical secondary school; [5] university degree or more 2001 - 2009 surveys: How old were you when you stopped full-time education? (ACE) [0] still studying; [1] illiterate; separate categories for 7 or older. The resulting dummy variables for education are: "Primary education or less" is equal to one if education level is [1] uncompleted primary school or [2] primary school; if education level is not available, ACE of 16 or less is used as a criterion "Secondary school" is equal to one if education level is [3] basic vocational or [4] general and technical secondary school; if education level is not available, I use ACE between 17 and 22 as a criterion "University" is equal to one if education level is [5] university degree or more; if education level is not available, ACE of 23 or older is used as a criterion "Still in school" is equal to one if ACE is [0] still studying
Marital status	
WVS & EB	The dummy variables are: "married" equal to one if married, remarried, or living together as married; "single" equal to one if single/ never married; "divorced/ separated" equal to one if divorced or separated; "widowed" equal to one if widowed
Employment status	
WVS	Are you employed now or not? [1] Full time; [2] Part time; [3] Self employed; [4] Retired; [5] Housewife; [6] Student; [7] Unemployed; [8] Other. The dummy variables for employment status are: "employed" equal to one if [1] Full time, [2] Part time, or [3] Self employed; "unemployed" equal to one if [7] Unemployed; "not in the labor force (LF)" equal to one if [4] Retired, [5] Housewife, [6] Student, or [8] Other.
EB	What is your current occupation? NON-ACTIVE [1] Responsible for ordinary shopping and looking after the home, or without any current occupation, not working; [2] Student; [3] Unemployed or temporarily not working; [4] Retired or unable to work through illness SELF EMPLOYED [5] Farmer; [6] Fisherman; [7] Professional (lawyer, medical practitioner, accountant, architect, etc.); [8] Owner of a shop, craftsmen, other self-employed person; [9] Business proprietors, owner (full or partner) of a company

Table A.1 (cont): Variable description

EB (cont.)	EMPLOYED [10] Employed professional (employed doctor, lawyer, accountant, architect); [11] General management, director or top management (managing directors, director general, other director); [12] Middle management, other management (department head, junior manager, teacher, technician); [13] Employed position, working mainly at a desk; [14] Employed position, not at a desk but travelling (salesmen, driver, etc.); [15] Employed position, not at a desk, but in a service job (hospital, restaurant, police, fireman, etc.); [16] Supervisor; [17] Skilled manual worker; [18] Other (unskilled) manual worker, servant The dummy variables for employment status are: "employed" equal to one if [5] Farmer through [18] Other (unskilled) manual worker, servant; "unemployed" equal to one if [3] Unemployed or temporarily not working; "not in the labor force (LF)" equal to one if [1] Responsible for ordinary shopping and looking after the home, or without any current occupation, not working, [2] Student, or [4] Retired or unable to work through illness.
Occupation	
WVS	In which profession/occupation do you or did you work? If more than one job, the main job? What is/was your job there? [11] Employer/manager of establishment with 500 or more employed; [12] Employer/manager of establishment with 100 or more employed; [13] Employer/manager of establishment with 10 or more employed; [14] Employer/manager of establishment w. less than 500 employed; [15] Employer/manager of establishment w. less than 100 employed; [16] Employer/manager of establishment with less than 10 employed; [21] Professional worker; [22] Middle level non-manual office worker; [23] Supervisory Non manual -office worker; [24] Junior level non manual; [25] Non manual-office worker; [31] Foreman and supervisor; [32] Skilled manual; [33] Semi-skilled manual worker; [34] Unskilled manual; [41] Farmer: has own farm; [42] Agricultural worker; [51] Member of armed forces; [61] Never had a job; [81] Other The dummy variables for occupation are: "white collar" equal to one if [11] Employer/manager of establishment with 500 or more employed through [25] Non manual-office worker, or [51] Member of armed forces; "blue collar" equal to one if [31] Foreman and supervisor through [42] Agricultural worker, or [81] Other; "never had job" equal to one if [61] Never had a job.
EB	Same question as for employment status, plus a similar question asked of those not doing any paid work currently: Did you do any paid work in the past? What was your last occupation? It includes answer option Never did any paid work, in addition to the answer options above. The dummy variables for occupation are: "white collar" equal to one if [7] Professional (lawyer, medical practitioner, accountant, architect, etc.) through [15] Employed position, not at a desk, but in a service job (hospital, restaurant, police, fireman, etc.); "blue collar" equal to one if [5] Farmer, [6] Fisherman, or [16] Supervisor through [18] Other (unskilled) manual worker, servant; "never had job" equal to one if Never did any paid work in the additional question asked of those not currently doing any paid work.
Scale of incomes	
WVS	[1] Lower step to [10] Tenth step
GDP per capita	
	Data from the World Bank (2009) World Development Indicators in PPP constant 2005 international dollars (retrieved from http://data.worldbank.org/data-catalog/world-development-indicators), except 1989 obtained by extrapolation from Economic Commission for Europe (2003), Table B.1.
Registered unemployment	
	Data from the Central Satistical Office of Poland (http://www.stat.gov.pl/gus/index_ENG_HTML.htm). 1989 value from January 1990; 1990-2008 values from December of the respective year; 2009 value from July.
Inflation	
	Data from the World Bank's World Development Indicators (retrieved from http://data.worldbank.org/data-catalog/world-development-indicators), based on consumer prices (annual %).
Gini coefficient	
	Data from UNICEF (2009) TransMONEE Database, based on the distribution of income.

Appendix B

Table B.1: Mean life satisfaction by dataset and survey date, on original scale and on 1-10 scale, 1989-2009

Survey date		Life satisfaction			Year for
Year	Month	Mean (original scale)	Standard error	Mean (1-10)	macroeconomic data
WVS: original scale 1-10					
1989	11	6.639	(0.08)	6.639	1989
1990	05	6.531	(0.07)	6.531	1989.5
1997	10	6.421	(0.08)	6.421	1997
1999	02	6.374	(0.07)	6.374	1998.5
2005	12	7.023	(0.00)	7.023	2005
EB: original scale 1-4					
2001	10	2.638	(0.03)	5.914	2001
2002	09	2.703	(0.03)	6.109	2002
2003	05	2.743	(0.03)	6.230	2002.5
2003	10	2.679	(0.03)	6.036	2003
2004	10	2.805	(0.02)	6.414	2004
2005	05	2.770	(0.02)	6.310	2004.5
2005	10	2.762	(0.02)	6.285	2005
2006	04	2.798	(0.02)	6.395	2005.5
2006	09	2.832	(0.02)	6.497	2006
2007	04	2.882	(0.02)	6.647	2006.5
2007	10	2.890	(0.02)	6.671	2007
2008	04	2.836	(0.02)	6.507	2007.5
2008	10	2.834	(0.02)	6.503	2008
2009	02	2.781	(0.02)	6.344	2008.5
2009	06	2.929	(0.02)	6.786	2008.5
2009	07	2.906	(0.02)	6.717	2009
CBOS: original scale 1-5					
1992		2.651		4.714	1992
1993		2.677		4.773	1993
1994		2.761		4.962	1994
1995		2.841		5.143	1995
1996		2.939		5.362	1996
1997		2.997		5.493	1997
1998		2.973		5.440	1998
1999		2.906		5.288	1999
2000		2.868		5.202	2000
2001		2.855		5.173	2001
2002		2.874		5.217	2002
2003		2.915		5.309	2003
2004		2.958		5.405	2004
2005		2.978		5.451	2005

Table B.2: Selected macroeconomic indicators for Poland, 1989-2009

	GDP per capita		Registered	Inflation	Gini
	Index	Absolute	unemployment	rate	coefficient
Year	(1989=100)		(%)	(%)	(income)
1989	100.0	9,235	0.3	244.6	0.275
1990	88.4	8,164	6.5	555.4	0.268
1991	81.9	7,568	12.2	76.7	0.265
1992	83.8	7,740	14.3	45.3	0.274
1993	86.8	8,015	16.4	36.9	0.317
1994	91.1	8,413	16.0	33.3	0.323
1995	97.4	8,991	14.9	28.1	0.321
1996	103.4	9,545	13.2	19.8	0.328
1997	110.6	10,213	10.3	15.1	0.334
1998	116.0	10,717	10.4	11.7	0.326
1999	121.3	11,204	13.1	7.3	0.334
2000	127.2	11,743	15.1	10.1	0.345
2001	129.5	11,959	17.5	5.5	0.341
2002	131.4	12,137	18.0	1.9	0.353
2003	136.6	12,615	18.0	0.8	0.356
2004	144.0	13,297	19.0	3.6	0.366
2005	149.3	13,784	17.6	2.1	0.366
2006	158.6	14,648	14.8	1.1	0.343
2007	169.3	15,638	11.2	2.4	0.345
2008	177.4	16,388	9.5	4.3	
2009			10.8		

Source: see table A.1

Table B.3: Marital and employment status by date, 1989-2009, WVS and EB

	WVS			EB				
	1989-1990	1999	2005	2001	2003	2005	2007	2009
Sample size	1,897	1,085	989	994	1,981	1,975	1,978	2,939
Mean life satisfaction (WVS: 1-10; EB: 1-4)	6.58	6.37	7.02	2.64	2.71	2.77	2.89	2.87
% married	74.0	66.4	58.1	54.4	64.7	63.0	61.8	76.8
% single	14.8	19.7	25.7	34.7	23.1	20.2	21.4	14.2
% divorced/separated	2.9	3.3	4.6	2.7	3.5	5.7	5.7	4.1
% widowed	6.9	10.5	8.9	8.3	8.8	11.1	11.1	4.9
% employed	61.7	49.7	45.8	39.1	36.6	39.9	43.2	45.6
% unemployed	0.8	9.0	11.5	13.0	13.6	13.2	8.3	9.8
% not in labor force	37.5	41.3	42.7	47.9	49.8	46.9	48.5	44.6
Unemployment rate	1.3	15.3	20.0	24.9	27.1	24.8	16.1	17.6

The data from the EB surveys of 2002, 2004, 2006, 2008 not shown.