The Effects of Transition on Life Satisfaction in Poland

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Abstract

Since 1989 Poland has been considered a leader in economic reform, but did the process of transition from a planned economy to a free market model make its people happier? A look at the life satisfaction levels reported in the World Values Survey shows that the answer is no. The disruptive effects of transition on marriage rates, as well as the increased unemployment and withdrawal from the labor force seem to have mattered more for the happiness of Poles than the recovery in terms of GDP per capita. People over thirty and those less educated are the ones who suffered the most and this led to an increase in life satisfaction inequality. Overall, there is not a significant difference in the levels of subjective well-being of women and men. However, while both genders report lower levels in 1999 compared with 1990, the difference between the two dates is only significant in the case of men. For them, only after considering the changes in marital and employment status the decrease in life satisfaction over this interval can be accounted for.

I. Introduction

This paper studies how subjective well-being in Poland was affected by the process of transition and, by this measure, who are the gainers and the losers. By subjective well-being I mean people's self-reported evaluation of their level of happiness through survey answers. By transition I mean the process by which the post-Soviet economies switched from a planned economy to a Western free market model. Transition economies underwent economic liberalization, letting market forces set prices and lowering trade barriers. Macroeconomic stabilization became a priority, so as to bring the immediate high inflation under control. Restructuring and privatization were also necessary in order to create a financial sector and move from public to private ownership of resources. These changes typically led in the beginning to increased inequality of incomes and wealth, high unemployment, and a fall in GDP.

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However, little has been done so far to examine their impact on people's feelings of well-being.

The fall of communism was initially welcomed with euphoria by the citizens of the Central and Eastern European countries who expected that the adoption of a democratic political system and the transition to a market economy would automatically and quickly lead to material prosperity (Zuzowski, 1998). They soon realized though that the transition process would not happen overnight and that it would bring considerable economic hardship through declining industrial production, increasing unemployment, high inflation, and decreasing real wages and salaries (EBRD, 1998; Hayo and Seifert, 2002).

Even in Poland, considered a leader in economic reform, "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).

A lot of attention has been dedicated to the analysis of the transition process through the perspective of economic indicators such as the ones mentioned above. However, they do not tell the whole story in terms of the effects of transition on different segments of the population. Of great importance are the perceptions of people themselves on how satisfied they are with their lives and the way these perceptions have changed over time as reforms were implemented more or less successfully. Furthermore, especially when reliable objective data are hard to find, the subjective measures of well-being can provide a useful complement to conventional economic data.

This paper will focus on Poland, a country in which the rate of growth has been sufficient so that by the end of the 1990s the relative income gap with the advanced OECD economies would return to its 1989 level (Svejnar, 2002). It is, however, also a country in which the unemployment rate tended to be higher than in the other countries in the area. This trade-off makes it especially interesting to see how life satisfaction has evolved in Poland in the years after communism fell. Economists tend to focus on the recovery of

GDP per capita as a measure of the success of the transition process. Might it be though that unemployment can have a stronger effect on well-being, either directly or indirectly, through the disruption it causes to people's lives?

Another reason why Poland is of special interest is the fact that in a study carried out by the Public Opinion Research Center (1999) in the Czech Republic, Hungary, and Poland, the largest majority of individuals feeling that it was worthwhile to change the political and economic system was found in Poland, where the political revolts in the 1980s were the strongest and the GDP growth in the 1990s the fastest. Even so, in each country 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).

The transition in Poland

The initial hope that by switching to a market system, the previously centrally planned economies would generate rapid economic growth and finally catch-up with the developed countries of Western Europe was soon shattered when their performance fell short of expectations. Some of the reasons behind this failure were the unusually good performance of the Western economies in the 1990s, which raised the bar for perceptions of economic success, the fact that the economic problems associated with the transition had been widely underestimated, and the questionable choices made by policymakers.

The economic transition in Poland started with the so-called "big bang" reform of August 1989 to January 1990. The communist government introduced significant, partial reforms as it left power in August 1989, such as ending food price controls. In January 1990 the Balcerowicz plan was implemented by the new government, which ended price controls on most other products, thus leading to substantial inflation and changes in relative prices. According to IMF estimates, real GDP registered large declines (11.6 percent in 1990 and 7.0 percent in 1991) in the context of reductions in state orders for manufactured goods and

restraints on credit for state-owned enterprises, and external shocks such as increased import competition and the collapse of the Council for Mutual Economic Assistance trade bloc (Keane and Prasad, 2002). Another consequence was a sharp increase in unemployment. While these effects were more severe than in neighboring transition economies, they were also of shorter duration and economic growth resumed in 1992 and has continued ever since (Huffman and Johnson, 2002). Table 1 presents some key economic indicators for Poland from 1988 to 2001, illustrating the dramatic changes brought about by the transition process.

Not only was the economic growth in Poland the fastest among the Central and Eastern European countries, but it also generated one of the smallest increases in inequality. This was achieved through a high level of social (cash) transfers. In fact, social transfers as a percent of GDP averaged 17.7% in Poland during 1990-1997, the highest level in any transition country (Keane and Prasad, 2002).

On a social level, life expectancy at birth in Poland increased from 71.0 in 1989 to 73.2 in 1999, while the fertility rate measured as the total births per woman considerably decreased in the same interval from 2.08 to 1.40. Marriage rates have been declining over time in most western countries as well, but the rate of decline accelerated in most transition economies. In Poland, the marriage rate per 1,000 inhabitants fell from 6.8 in 1989 to 3.6 in 1999. However, while transition appears to have had a strong negative effect on marriage formation and fertility, the divorce rate per 1,000 inhabitants remained relatively constant at 1.2. This seems to indicate that transition has not destroyed existing marriages (Svejnar, 2002). I believe though that this is also the result of the decline in marriage rates: as a percentage of married people, and not of all inhabitants, divorce rates have in fact increased.

All these aspects indicate that there were winners and losers in the process of transition. This paper aims at identifying who benefited and who lost in terms of the self-reported levels of life satisfaction of Polish people. One would expect that the major upheaval generated by the transition process for most people would be reflected in their self-reported

well-being in the early years of transition, but that their assessments might gradually improve as circumstances get better and people become used to the new regime.

The study of subjective well-being

Subjective well-being (SWB) is studied by using surveys in which respondents report on their feelings of well-being. Two measures are commonly used to this purpose. The first is happiness. A typical survey question is that used in the World Values Survey (WVS): Taking all things together, would you say you are: very happy, quite happy, not very happy, not at all happy? To facilitate analysis, the responses are often assigned integer values, with a range from least satisfied or happy equal to 1, up to the total number of response options (in the present example, 4). The other often-used question relates to general life satisfaction. In the World Values Survey (WVS) the following question is asked: All things considered, how satisfied are you with your life as a whole these days?, followed by a scale from "1" to "10", where "1" is dissatisfied and "10" is satisfied.

A substantial methodological literature addresses the issues of reliability, validity, and comparability of the answers to questions regarding subjective well-being (Frey and Stutzer, 2002; Kahneman, Diener, and Schwartz, 1999; Veenhoven, 1993). Reliability, that is the extent to which two or more measures dealing with the same dimension of happiness agree with one another, as well as the extent to which an individual's responses stay the same if all else is equal when asked the same question, may be undermined by distorted appraisal or by distorted response. Studies show though that subjective well-being is moderately stable and appropriately sensitive to changing life circumstances (Headey and Wearing, 1991). Furthermore, these problems can be mitigated by a careful survey design. Validity requires that a certain measure reflects the concept that it is intended to reflect. Biases can appear due to absence of opinion or to distorted reporting, but they are typically random and therefore do not affect aggregate cross-section analysis. The ones remaining

can also be mitigated through careful survey design. Consistency refers to how well people's inner feeling of happiness as measured by the index of well-being corresponds to other observations of the same phenomenon. Frank (1997, p. 1833) provides examples of such observations that subjective well-being correlates with (Frey and Stutzer, 2002, p. 32-33).

The study of the "economics of happiness" was pioneered by Richard A. Easterlin (1974) who finds that, when asked about happiness, wealthy people tend to be happier than poorer ones within countries, but that there is no such relationship among countries or over time. Similar conclusions were reached by many subsequent studies (Diener, 1984; Blanchflower and Oswald, 2004; Frey and Stutzer, 1999). He also concludes that absolute income levels matter up to a certain point, after which relative income differences matter more. Diener et al (1993) find that it is perceptions of differences rather than objective differences in circumstances that have a negative impact on happiness.

This suggests that looking only at the way economic indicators have changed after the fall of communism does not provide a comprehensive view of how the transition process has affected the people living in Central and Eastern Europe and that measures of subjective well-being should also be studied.

If income is not the key to happiness, then what is it that makes people happy? Some studies find that marriage has a strong positive effect on subjective well-being (Blanchflower and Oswald, 2004; Frey and Stutzer, 2002; Layard, 2005; Waite, 1995; Waite and Lehrer, 2003; Zimmermann and Easterlin, 2006). At the same time, unemployment and poor health have a negative effect on happiness (Blanchflower and Oswald, 2000; Frey and Stutzer, 2002), the same being true for inflation (DiTella, MacCulloch, and Oswald, 1997).

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, 2002; Sanfey and Teksoz, 2005). 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 most of those in Asia or Central and South America.

In general, if one looks at survey evidence of individual 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).

Other papers analyze happiness in specific transition countries. Veenhoven (2001) and Graham et al (2004) look at Russia and find high levels of unhappiness; Namazie and Sanfey (2001) focus on one of the poorest transition countries, the Kyrgyz Republic. While for Russia the usual U-shaped relationship between age and happiness that is found in more advanced countries emerges, in the Kyrgyz Republic satisfaction appears to decline steadily with age. In neither of the countries, does education seem to have an impact on life satisfaction. The relevant "reference" income is found to have an important positive contribution to happiness in Russia (Senik, 2002). In Hungary, the main winners from increasing economic freedom seem to have been the entrepreneurs (Lelkes, 2006).

Based on the World Values Survey data, the patterns of happiness that emerge in post-1989 Poland indicate that economic recovery was not automatically followed by an increase in people's self-reported levels of life satisfaction. Furthermore, transition has increased inequality not only in incomes, but in self-reported happiness as well. Life satisfaction in Poland was significantly lower in 1999 compared with 1990. Although there is no significant difference in the levels of happiness reported by women and men, the level of life satisfaction in 1999 is only significantly lower for men, mostly due to the negative effects of unemployment. For both genders, people over 30 and those less educated appear to have been the most affected by transition, as a result both of increases in unemployment and labor force withdrawal, and of lower marriage rates and more dissolution of existing

marriages through divorce, separation, or widowhood.

The paper will proceed as follows: the next section will present the data and methods used, followed by a section containing the main results of the paper, and finally a summary and conclusions part.

II. Data and Methods

The data used in this paper come from the World Values Survey (WVS), 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 four waves of the WVS have been implemented: 1981-1984, 1989-1993, 1994-1999, 1999-2004. For Poland, surveys were carried out in waves 2, 3, and 4. Wave 2 consists of data gathered in 1989 and 1990, wave 3 was collected in 1997 and wave 4 in 1999. Since wave 3 does not include any question on the employment status of the respondents, it will be omitted from most of the analysis. Thus, we will compare the self reported life satisfaction of the Polish people between the early and the late 1990s.

Appendix A presents the descriptive statistics for the variables covered in the analysis. The key question from the WVS is "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).

Each individual has certain "fixed" characteristics that, based on the literature, are expected to influence his life satisfaction: gender, age, education. In addition to these, a number of life circumstances will affect his/ her happiness. This paper focuses on two of them: marital status and employment status.

Since the answers to survey questions take on discrete, ordered values, the analysis of the data will be based on ordered logit regressions.

The analysis uses dummy variables for the main characteristics: gender, marital status, employment status. Age and education are also divided into four and, respectively, two categories using dummy variables. For marital and employment status, some of the categories are collapsed together in the dummy variables, due to their similarities, thus allowing for a more representative sample. The categories to which this applies are: single and cohabitating, divorced and separated, and not in the labor force (retired, housewife, students, other).

III. Results

Mean life satisfaction in Poland has decline from 6.58 to 6.37 between 1990 and 1999, as it can be seen in Table 2. Both men and women showed a decline. This happened despite the fact that by 1996 the country's GDP per capita had returned to its pre-transition level and continued to stay above that afterwards. Figure 1 plots life satisfaction data for the three waves available from the WVS (1990, 1997, and 1999) against outside data for GDP per capita, unemployment, and inflation, data presented in Table 1. Its first panel clearly shows that once GDP per capita starts growing, it starts diverging from the average life satisfaction. The second panel proves that inflation cannot account for the persistent decrease in happiness either because it almost continually decreased after a spike in 1990. The one economic variable that life satisfaction seems to have followed most closely is the unemployment rate, especially if one looks at the dark line connecting the years for which life satisfaction is available, rather than at the lighter line connecting the yearly data. This is consistent with the literature mentioned before regarding the relationship between happiness and unemployment.

But life satisfaction has not just declined on average, and its annual frequency distributions prove that. As table 2 shows, the cumulative frequency of life satisfaction answers

lower than or equal to 5 increases from 31.95 per cent to 38.82 per cent between the early and the late 1990s. Correspondingly, the cumulative frequency of levels higher than 5 decreases from 68.05 per cent to 61.18 per cent. This suggests that there might have been an increase in inequality in terms of happiness after 1990. This conjecture is confirmed by table 3, panel A, which uses a variety of measures all showing that life satisfaction inequality increased in the time interval covered. As mentioned before, Poland was actually one of the transition countries with the lowest rise in inequality. Yet, table 3, panel B, indicates that income inequality, determined using a ten-step perceived income scale question, also increases after 1990, despite the overall increase in GDP per capita. Therefore, the trend in life satisfaction inequality in fact follows the trend of inequality in perceived income.

This observation is supported by existing literature. Using data from the Household Budget Surveys conducted by the Polish Central Statistical Office, Keane and Prasad (2002) find that earning differentials across education levels increased rapidly during transition, reflecting sharp increases in education premia, while the premium for labor market experience fell sharply. This translated into a deterioration of the position of older workers relative to younger ones. Combined with the targeting of social transfers towards public sector pensions, it led to a marked increase in the number of pensioners since the relative income position of this category was improving. Such measures were necessary to achieve initial support for the "big bang"reform strategy. After 1993 though, the growth in transfers was halted and overall inequality began to rise gradually.

One would therefore expect that older people and less educated ones are among the population categories for which life satisfaction decreased during transition. This hypothesis is tested in the first column of Table 4 with the use of an ordered logit regression of life satisfaction on fixed characteristics. Since the literature suggests that women and men differ in terms of self-reported happiness, the regression also controls for gender. Time dummies are included in order to capture the trend of life satisfaction during transition. The negative

and significant coefficient on the time dummy for 1999, -0.1499, confirms that the Poles did become less happy after 1990. Furthermore, life satisfaction is lower for older age categories than for those under 30, but it is lowest for people between 45 and 59 years old, so the usual U-shaped relationship between age and life satisfaction emerges. As expected, less educated people are also less happy.

Although there is not a significant difference in the life satisfaction of women and men in Poland, it is reasonable to suspect that the two sexes were not affected in the same way by the changes brought about by transition. This is why in columns 2 and 3 of table 4, the regression of life satisfaction on fixed characteristics is run separately for the two genders. The men are significantly less satisfied in 1999 compared with 1990 (-0.1985), but although the coefficient for women is negative, it is not significant. It is however clear that women suffer more than men from the effects of age, especially at older ages, while men benefit more from having a higher education.

Since controlling for these fixed characteristics still leaves part of the population significantly less happy in 1999 compared with 1990 despite the economic recovery, some additional life circumstances must be important for their life satisfaction. The literature suggests two obvious candidates: marital status and employment status. As mentioned above, being married and having a full time job are expected to increase happiness, but transition led both to a decrease in marriage rates and to an increase in unemployment. Thus, the next step is to look at the frequency distributions of the main population categories by marital and employment status and see to what extent controlling for these characteristics might at least partially account for the decrease in life satisfaction.

Table 5 shows that the percentage of married people decreased considerably from 73.93 to 66.55, while the percentages of divorced, single, and widowed people all increased. At the same time, fewer people are employed (49.84 per cent in 1999 compared with 61.55 per cent in 1989) due to an increase in unemployment from virtually 0 to almost 9 per cent

and to an increase in the withdrawal from the labor force. All these aspects are in line with the trends presented in the introduction, which shows that the sample in the WVS is representative for Poland in the transition years.

In terms of gender differences, women seem to have suffered most from the changes that occurred in marital status, with over ten percentage points fewer women being married at the end of the interval compared with the period immediately following the fall of communism. The corresponding decrease for men was much lower, just over three percentage points. Both genders show an increase in the percentage of people staying single or opting for cohabitation. However, while for men this seems to be the main reason behind the decrease in marriage rates, for women the increase in widowhood, a life event known to decrease life satisfaction, plays just as an important role. Unemployment greatly affected both genders, but slightly more so the men than the women, while a larger percentage of women chose withdrawal from the labor force. The frequency distributions thus suggest that there were significant changes in marital and employment status between 1990 and 1999, the former affecting the women more, and the latter affecting the men more. In order to get a better idea of the magnitude of the impact that these life circumstances had on self-reported happiness, one has to look at the regression results of life satisfaction on fixed characteristics, as well as on marital and employment status.

Indeed, after controlling for these two life circumstances, the coefficients on time for the overall population, as well as for women and men separately, are all insignificant at 10 per cent. The overall coefficient and the coefficient for men on time increase to -0.0451 (table 6, column 1) and -0.082 (table 6, column 3), respectively; for women, it becomes positive, 0.0013 (table 6, column 2).

As it was to be expected, divorced and widowed people are significantly less happy than married ones, while the unemployed and those not in the labor force are significantly less happy than employed people (table 6, column 1). The regressions by gender though are

somewhat surprising. Divorce makes both genders significantly less satisfied, but as the tabulations in Table 5 showed, the increase in divorce rates was fairly small. Widowhood on the other hand, which affected women considerably more in 1999 compared with 1990 but decreased for men, only has a significantly negative effect on the well-being of the latter compared with being married (table 6, columns 2 and 3). This is quite surprising and goes against previous literature so it deserves additional consideration in an extension of this paper.

In terms of employment, women's life satisfaction is negatively and significantly affected by unemployment, but not by withdrawal from the labor force. The coefficients for both unemployment and not being in the labor force are negative and significant for men, but the former is particularly low. These differences between the genders are not surprising. One of the questions in the WVS asks who the chief wage earner in the household is and the answers show that it is typically the man. While the percentage of women who are chief earners does increase between 1990 and 1999 from less than 30 per cent to almost 40per cent, it is still considerably lower than that for men which even in 1999 was over 70 per cent. This means that the entire family suffers more when the man loses his job. When a woman loses her job though, as long as the husband still works, the effect on life satisfaction is not as large.

IV. Summary and Conclusions

Using the World Values Survey data on life satisfaction in Poland during transition, I find that the fall of communism did not automatically make people happier. Even after the economic recovery had been achieved, people's life satisfaction was still not back to its 1990 level. Furthermore, transition seems to have increased inequality, not only in incomes, but in self-reported well-being as well. It is, however, surprising that when conducting a separate analysis by gender, only the life satisfaction of men appears to be significantly

lower due to the side effects of transition.

The shock therapy adopted by Poland in the early years of transition led to dramatic increases in unemployment and early retirement, which inevitably had an impact on people's life satisfaction. The lower marriage rates and the more frequent dissolution of existing marriages through divorce, separation, or widowhood, also had a negative impact on the Polish people. These two life circumstances seem to be enough to explain the decrease in life satisfaction for men.

These results point to the fact that in judging the success of the transition process one should not just look into whether GDP per capita and other economic indicators have recovered. Only by analyzing people's life satisfaction can one tell the whole story of how successful transition was from the point of view of those for whose benefit reforms were supposedly undertaken to begin with.

This paper is far from being exhaustive in analyzing the effects of transition on subjective well-being. There are many other life circumstances that one should look into: personal income and relative income, profession, religiosity, town size, to name just a few. Furthermore, the analysis should be extended to include more of the transition countries, some more successful than other.

It would also be interesting to see how satisfaction with those domains of life that people usually find important, such as family, job, financial, or health satisfaction, changes during transition and to compare each of them with the trend in overall life satisfaction. This would give a better picture of the areas in which transition was successful, as opposed to those areas in which it fell short of expectations.

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Table 1: Selected Economic Indicators for Poland, 1989 - 1999

	*GDP per capita**		*Relative GDP per capita (1988 = 100)*	*Registered Unemployment***		CPI (2000=100)***	
Year	*Value*	*% change*	*%*	*%*	*% point change*	*%*	*% change*
1988	5,789	1.9	100.0				
1989	5,684	-1.8	98.2	0.0	0.0	1.4	
1990	5,113	-10.0	88.3	3.4	3.4	9.2	567.9
1991	4,738	-7.3	81.8	9.0	5.5	16.2	76.8
1992	4,842	2.2	83.6	12.9	4.0	23.7	46.1
1993	5,010	3.5	86.5	15.0	2.1	32.5	37.0
1994	5,261	5.0	90.9	16.5	1.5	43.2	33.0
1995	5,623	6.9	97.1	15.2	-1.3	55.3	28.0
1996	5,957	5.9	102.9	14.3	-0.9	66.2	19.8
1997	6,324	6.2	109.2	11.5	-2.8	76.1	14.9
1998	6,667	5.4	115.2	10.0	-1.5	84.9	11.6
1999	6,938	4.1	119.8	12.0	2.0	91.0	7.2
2000	7,215	4.0	124.6	14.0	2.0	100.0	9.9
2001	7,491	3.8	129.4	16.2	2.2	105.4	5.4

*Source: Maddison. Measure: 1990 International Geary-Khamis dollars.

**Source: Central Statistical Office. Measure: Share of the unemployed persons in civilian economically active population.

***Source: OECD Statistics.

Table 2: Life Satisfaction Time Trend, 1990 and 1999

	All years		*1990*		*1999*	
Life satisfaction	*Frequency*	*Percent*	*Frequency*	*Percent*	*Frequency*	*Percent*
dissatisfied	119	3.99	60	3.16	59	5.44
2	65	2.17	37	1.95	28	2.54
3	159	5.32	96	5.06	63	5.77
4	172	5.76	114	6.01	58	5.32
5	513	17.21	299	15.76	214	19.75
6	373	12.50	257	13.55	116	10.68
7	423	14.19	296	15.60	127	11.71
8	547	18.34	355	18.71	192	17.68
9	266	8.91	167	8.80	99	9.09
satisfied	346	11.62	216	11.39	130	12.02
Total	2,982	100.00	1,897	100.00	1,085	100.00
Mean	6.51		6.58		6.37	
Std. Dev.	2.35		2.27		2.48	
<u>Women</u>						
Mean	6.50		6.54		6.43	
Std. Dev.	2.38		2.32		2.48	
<u>Men</u>						
Mean	6.52		6.63		6.31	
Std. Dev.	2.31		2.21		2.47	

Table 3: Measures of Life Satisfaction and Income Inequality, 1990 and 1999

A. Life Satisfaction Inequality

Measure	*1990*	*1999*
Relative mean deviation	0.1415	0.1698
Coefficient of variation	0.3442	0.4077
Standard deviation of logs	0.4775	0.5757
Atkinson inequality measure (ϵ=1)	0.0837	0.1184
Gini coefficient	0.1931	0.2306

B. Income Inequality

Measure	*1990*	*1999*
Relative mean deviation	0.1495	0.1961
Coefficient of variation	0.3817	0.4778
Standard deviation of logs	0.5080	0.6043
Atkinson inequality measure (ϵ=1)	0.0973	0.1408
Gini coefficient	0.2107	0.2682

Table 4: Regression of Life Satisfaction on Time and Fixed Individual Characteristics: Ordered Logit Statistics

Sample	*All*	*Females*	*Males*
	(1)	*(2)*	*(3)*
t1990	reference year		
t1999	-0.1499*	-0.0766	-0.1985^{+}
	[-1.98]	[-0.73]	[-1.80]
Male = 1	-0.0056		
	[-0.08]		
$Age < 30$	reference group		
$30 \leq$ Age ≤ 44	-0.3598**	-0.4519**	-0.2805^{+}
	[-3.58]	[-3.23]	[-1.93]
$45 \leq$ Age ≤ 59	-0.5443**	-0.6843**	-0.4344**
	[-5.15]	[-4.49]	[-2.93]
Age ≥ 60	-0.3321**	-0.6394**	-0.0368
	[-2.66]	[-3.61]	[-0.21]
Less Than Secondary School	reference group		
Secondary School or More	0.1207^{+}	-0.0040	0.2092*
	[1.68]	[-0.04]	[2.02]
Observations	2,804	1,501	1,303
Pseudo R-squared	0.0033	0.0046	0.0035
Chi^2	35.16	24.36	16.91
Log likelihood	-6,016.2	-3,229.5	-2,776.5

$^{+}$ p<0.10, * p<0.05, ** p<0.01

Note: cut values not shown.

Table 5: Frequency Distributions by Gender: 1990 and 1999

			All		*Women*		*Men*	
			1990	*1999*	*1990*	*1999*	*1990*	*1999*
	n		1,913	1,095	997	577	914	518
			376	238	188	122	188	116
	Less than 30	%	19.65	21.71	18.86	21.12	20.57	22.36
			625	319	333	167	292	152
Age	30 - 44	%	32.67	29.13	33.40	28.93	31.95	29.36
categories			546	292	296	139	248	153
	45 - 59	%	28.54	26.70	29.69	24.07	27.13	29.63
			366	246	180	149	186	97
	60 and over	%	19.13	22.46	18.05	25.87	20.35	18.65
	Secondary School		1,276	699	647	329	627	371
Education	Not Completed	%	72.91	64.05	70.17	57.28	75.91	71.54
	Secondary School		474	392	275	245	199	147
	or More	%	27.09	35.95	29.83	42.72	24.09	28.46
			1,418	729	713	349	703	380
	Married	%	73.93	66.55	71.30	60.44	76.75	73.35
			310	214	141	103	169	111
Marital	Single	%	16.16	19.55	14.10	17.83	18.45	21.46
Status			56	36	36	22	20	14
	Divorced	%	2.92	3.32	3.60	3.82	2.18	2.75
			134	116	110	103	24	13
	Widowed	%	6.99	10.59	11.00	17.91	2.62	2.44
			1,178	546	532	245	644	300
	Employed	%	61.55	49.84	53.41	42.53	70.31	57.98
Employment			15	97	7	46	8	51
Status	Unemployed	%	0.78	8.90	0.70	8.05	0.87	9.83
			721	452	457	285	264	167
	Not in Labor Force	%	37.67	41.27	45.88	49.42	28.82	32.19

Table 6: Regression of Life Satisfaction on Specified Independent Variables: Ordered Logit Statistics

Sample	*All*	*Females*	*Males*
	(1)	*(2)*	*(3)*
t1990	reference year		
t1999	-0.0451	0.0013	-0.0820
	[-0.59]	[0.01]	[-0.74]
Male = 1	-0.0718		
	[-0.98]		
$Age < 30$	reference group		
$30 \leq$ Age ≤ 44	-0.5052**	-0.6232**	-0.3558*
	[-4.21]	[-3.86]	[-2.02]
$45 \leq$ Age ≤ 59	-0.6708**	-0.8712**	-0.4183*
	[-5.35]	[-4.98]	[-2.32]
Age ≥ 60	-0.3038^{+}	-0.7097**	0.1760
	[-1.95]	[-3.23]	[0.78]
Less Than Secondary School	reference group		
Secondary School or More	0.0872	-0.0200	0.1813^{+}
	[1.21]	[-0.20]	[1.76]
Married	reference group		
Single or Cohabitating	-0.1432	-0.2267	0.0587
	[-1.14]	[-1.34]	[0.32]
Divorced or Separated	-0.5436*	-0.4320^{+}	-0.7228^{+}
	[-2.52]	[-1.75]	[-1.71]
Widowed	-0.3621*	-0.1165	-0.9963**
	[-2.21]	[-0.60]	[-2.80]
Employed	reference group		
Unemployed	-1.0677**	-0.8592*	-1.2817**
	[-5.11]	[-2.51]	[-4.96]
Not in Labor Force	-0.1906*	-0.1629	-0.2993*
	[-2.17]	[-1.51]	[-1.99]
Observations	2,797	1,495	1,302
Pseudo R-squared	0.0077	0.0074	0.0112
Chi^2	79.89	40.48	55.42
Log likelihood	-5,974.2	-3,207.0	-2,753.4

APPENDIX A

DESCRIPTIVE STATISTICS

All Years

Variable	Number of Observations	Mean	Standard Deviation	Min	Max
Life Satisfaction	2,982	6.51	2.38	1	10
Male = 1	3,013	0.48	0.50	0	1
Age	3,008	44.47	16.23	16	95
Education	2,842	0.30	0.46	0	1

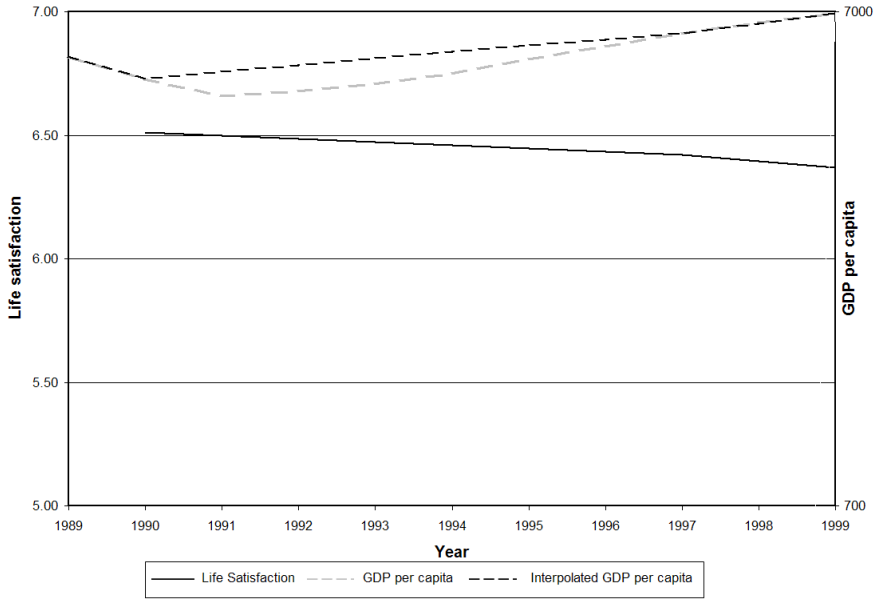
1990

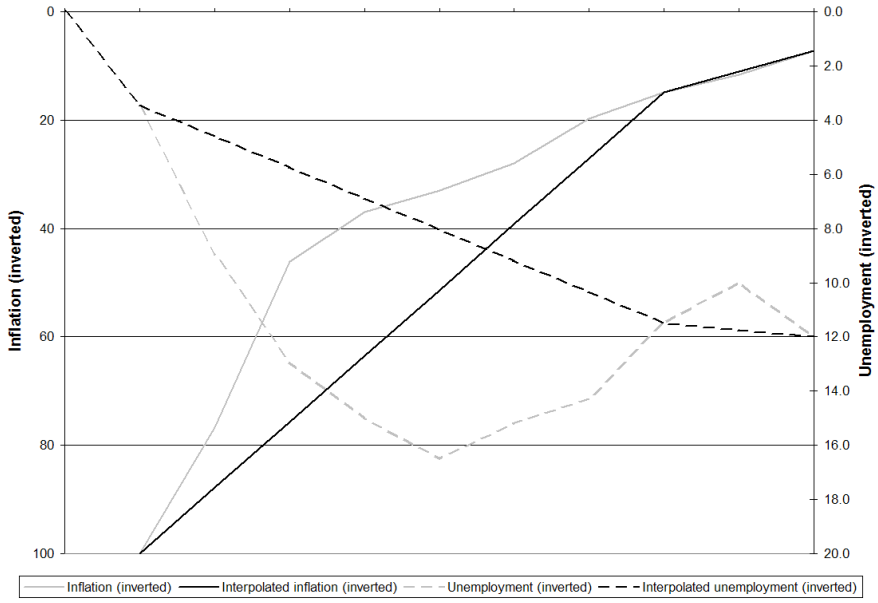
Variable	Number of Observations	Mean	Standard Deviation	Min	Max
Life Satisfaction	1,897	6.58	2.27	1	10
Male = 1	1,918	0.48	0.50	0	1
Age	1,913	44.21	15.64	16	88
Education	1,750	0.27	0.44	0	1

1999

Variable	Number of Observations	Mean	Standard Deviation	Min	Max
Life Satisfaction	1,085	6.37	2.53	1	10
Male = 1	1,095	0.47	0.50	0	1
Age	1,095	44.92	16.97	18	95
Education	1,092	0.36	0.48	0	1

Figure 1
Life Satisfaction and Specified Economic Variables in Poland, 1989 - 1999





Source: Table 1 and WVS.