The Determinants of Happiness and its Changes: An Empirical Analysis Based on Panel Data from Russia

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Abstract

In this paper we take advantage of a longitudinal survey of Russian households and individuals by using an ordered logit model to explore the determinants of life satisfaction and its changes in modern Russia. Most prior research on well-being in Russia is focused on the transition years. In contrast, we focus our attention on the more recent (and economically stable) period from 2004 to 2008. We extend prior models to include more determinants. In particular, we are interested in the effect of living space, perceived economic rank and other subjective attitudes and perceptions on well-being. In addition, we endeavor to correct for bias due to unobserved personality factors by instrumenting for "permanent" happiness. Our results clearly indicate the importance of non-economic determinants of reported well being.

JEL classification codes: D60; I31

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1. Introduction

Happiness is not a horse. You cannot harness it. Russian Proverb
Happiness does not lie in happiness, but in its attainment. Fedor Dostoyevsky

Economics may be a dismal science, but in the last two decades happiness research has gained increasing popularity. In the 1930s, Sir John Hicks and Lord Lionel Robbins among others revolutionized the field of economics by successfully proving that utility cannot and need not be measured. Yet today more and more economists are using self-reported subjective measures of well-being in their quest to explain the relationship between a host of socio-economic factors and happiness. Despite early concerns, studies such as Sandvik et al. (2009) have shown that subjective self-reported well-being validly measures the happiness construct, even when compared to non self-reported measures.

Traditionally, it is assumed that rational consumers maximize their utility in their choices of certain bundles of products over others. However, research has shown that consumers are not necessarily rational or fully-informed. For instance, individuals are prone to overestimating the happiness they will derive from income growth and underestimating the benefits of what is known as inconspicuous consumption, for example having more leisure time. Using measures of subjective well-being[1] (SWB) rather than objective observed preferences allows us to study the effects of decisions that deviate from rational choice. SWB measures also shed light on the value individuals place on immaterial factors such as having children or feeling respected by their community. Individuals derive utility not only from concrete outcomes such as income but also from processes. This means that how one earns a living and in what environment one lives play just as important a role in determining life satisfaction as income.

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[1]The terms "happiness", "general satisfaction", "life satisfaction" and "subjective well-being" are used interchangeably by sociologists, psychologists and most economists who study individual happiness based on subjective questions. We continue this practice.

Happiness research has undermined some of the fundamental assumptions behind the traditional approach to economic policy. For example, it has been shown that beyond a minimal threshold, increases in income, and on the national level in gross national product, do not lead to increased well-being.[2] In large part because of adaptation individuals adjust to higher incomes very quickly and any benefits from such increases quickly disappear.

In general, a reported SWB_{it} measure for each individual i at time t is assumed to be a positive monotonic transformation of an underlying metaphysical concept called welfare and denoted by W, so that if $SWB_{it} > SWB_{it+1}$ then $W_{it} > W_{it+1}$ (i.e. increasing values of SWB_{it} correspond to higher welfare).[3] In addition, reported satisfaction is assumed to be comparable among individuals, resting on the assumption that individuals share a similar opinion of what it means to be happy.[4] General satisfaction is interpersonally ordinally comparable, such that if $SWB_{it} > SWB_{jt}$ then $W_{it} > W_{jt}$. Psychologists often relax the ordinality assumption and treat SWB measures as cardinal while economists tend to treat SWB as strictly ordinal.

In either case, $SWB_{it} = r(W_{it})$ where observed well-being is some reporting function of true welfare, determined by various factors X_{kit} which can be but are not limited to the following categories: socio-demographic (e.g. age, gender, ethnicity, marital status, number of children, urban living); economic (e.g. income); socio-economic (e.g. occupation, unemployment, education); contextual (e.g. health); as well as related to personality and attitudes. Individual differences due to unobserved effects are captured within the error term $\varepsilon_{it.}$ Most life satisfaction

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[2] See Easterlin (1974). His findings, known as the "Easterlin" paradox, deal with the fact that in several countries, including the United States, income adjusted for inflation has increased since the 1950s however happiness levels have not, and in certain cases have even fallen.

[3] These assumptions and their alternatives are discussed in more detail in Ferrer-i-Carbonell and Frijters (2002).

[4] This is supported by research which shows that individuals can predict with reasonable accuracy the well-being of others. For example, see Sandvik et al. (1999).

research is done in cross-sectional settings. However, it is notoriously difficult to make casual inferences without accounting for time-invariant unobserved factors (such as personality) which are related to initial levels of observed factors but not their changes.

In this paper we build on the first part of Graham et al. (2004) to evaluate the determinants of happiness and its changes. Graham et al. use the Russia Longitudinal Monitoring Survey,[5] focusing on the period from 1995 to 2000. They focus on the second half of "transition" years known for their extreme volatility in price indices and exchange rates, low GDP growth rates, and institutional mayhem. We do not know of any research on well-being using Russian data that has not had the years of transition in the 1990s as its primary focus. In contrast, we use the same data source, but focus on the last half-decade. Despite the global financial crisis of 2008, these years were characterized by relative stability and prosperity. We hope that this would decrease the degree to which unobserved changes in happiness are related to macroeconomic events.

In addition, we extend Graham's model to look at a larger number of happiness determinants, including those which have gotten little attention in previous literature. In particular, we are interested in the effect of living space, perceived economic rank and other "attitudes/perceptions" on happiness. Happiness in this case is defined by the response of the survey participant to the question: "To what extent are you satisfied with your life in general at the present time?" with the possible responses of "not at all satisfied" (=1), "less than satisfied" (=2), "both yes and no" (=3), "rather satisfied" (=4), and "fully satisfied" (=5). We endeavor to

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[5] The Russia Longitudinal Monitoring Survey (RLMS) is a series of nationally representative surveys designed to monitor the effects of Russian reforms on the health and economic welfare of households and individuals in the Russian Federation. Data have been collected sixteen times since 1992. The last year of available observations (as of April 2010) is 2008.

correct for bias due to unobserved personality factors both through the inclusion of attitudes and by instrumenting for "permanent" happiness.

When looking at changes in happiness, Graham et al. (2004) run an ordered logit regression on the individual differences in happiness between 1995 and 2000. This approach is problematic because it ignores the fact that the probability of having a higher change in happiness heavily depends on original happiness.[6] Given this fact, Graham's interpretation of the coefficients as the effect of independent variables on changes in happiness is erroneous. We diverge from their methodology. Instead we estimate the determinants of changes away from neutral happiness levels to either positive or negative assessments of life satisfaction, as well as movements from one side of the spectrum to the other. While this reduces the information available to us (we lose any changes within categories), we escape the pitfalls of Graham et al. (2004). In addition, both changes away from neutrality and across the spectrum of happiness are interesting because their determinants, by extension, play an important role in individual well-being.

The rest of the paper proceeds as follows. Section 2 discusses past literature on the determinants of happiness. Section 3 provides background information on Russia as it transitioned from the "rocky" 1990s into the "era of stability" of the 2000s. Section 4 describes the data and its summary statistics. Section 5 describes the model and estimation results, and discusses their significance. In particular, in sub-section 5.1 we first estimate the effect of standard explanatory variables on happiness, taking advantage of having information for a two year panel to assess whether the relative importance of these determinants changes over time.

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[6] For example, at an initial happiness of 1 on a 1 to 5 happiness scale happiness can change by +4, + 3, +2, +1 or 0. In contrast, at an initial level of 5, happiness can only change by 0, -1, -2, -3, or -4.

We then proceed to include a measure of living space per person, economic rank, and other subjective attitudes. As a final effort to control for personality factors, we include a proxy for "permanent happiness." In sub-section 5.2, we describe the profile of those whose happiness changes as opposed to those whose happiness remains within the happy, average, or unhappy ranges[7]. We then estimate the effect of status changes, life events, and changes in scale variables on changes in happiness as measured by the four dummy variables representing the developments discussed above. We conclude in section 6.

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[7] We do not analyze the determinants of moves toward neutrality (that is from 1 or 2 to 3, or from 4 or 5 to 3).

2. Some Relevant Literature on the Determinants of Happiness

In this literature review we briefly cover the potential influences on happiness that have been identified by prior research. Dolan et al. (2008) provides a more comprehensive discussion of the latest findings. In addition, Frey (2008) discusses major developments in economic happiness research and their implications in more depth. We used these two texts and the works they reference as the basis of our literature survey, but we also discuss additional findings whenever appropriate.

Economists quite naturally have devoted much of subjective well-being research toward the study of income and its effects, both on the microeconomic and macroeconomic scales. Most economists take it as given that higher income leads to higher happiness. Not all economists subscribe to the idea, however. The focus on income and its role was catalyzed by the original Easterlin study in 1974, and its results were later generalized to other industrialized nations. The general consensus was that beyond a certain minimal threshold income increases cease to importantly affect happiness levels. However, studies focusing on microeconomic determinants of individual happiness have found that increased income is consistently associated with higher happiness levels. Clark et al. (2007) suggest that this is consistent with the presence of relative income terms in the utility function. These relative income terms can use a reference group or past income as a point of comparison. Expenditures and their composition can also affect happiness. Dunn (2008) finds that spending on others is significantly correlated with higher happiness levels.

At the international level many studies provide conclusive evidence that people in poorer countries are on average less happy than those living in rich countries (Diener et al. 1995). However, these differences may not be due to income effects but rather due to other factors. For

example, rich countries tend to have more stable government systems and a more effective system of law and order, both of which may be important to individuals and their well-being.

The direction of causality between income and happiness, both at the macroeconomic and microeconomic level, is unclear. We could argue that happiness makes people work harder thus raising the GDP of the country as well as their personal economic well-being. Graham et al. (2004) attempt to isolate unexplained happiness in order to estimate its effect of on income and establish a causal link. Though they find that residual happiness has a significant and positive affect on future income, it is questionable whether pseudo-residuals from ordered logit regressions can be used as valid estimates of unexplained variance.

For the purposes of economic research, the effects of personality and demographic characteristics are not interesting. Individual attitudes are likely to be influenced by economic factors (pessimism about the future increases for example during times of financial distress such as the recent financial crisis). However if these factors exert an independent influence on general life satisfaction, we will need to control for them in order to not introduce bias into our results (since we cannot be certain that these same factors do not exert an influence on our dependent variables).

Two personal qualities associated with higher happiness are optimism and self-esteem. Optimists tend to interpret their surroundings in a more positive manner. Because of this they tend to set higher goals and work harder to achieve them. Their success in turn makes them happier and even more optimistic (Scheier and Carver 1985). Self-esteem is also highly correlated to happiness because in their efforts to maintain a positive self-image people tend to ignore unpleasant reality and remain happy even in the face of unfortunate events (Dunning et al. 1995).

With regard to demographic characteristics, age is consistently found to have a negative relationship with happiness while age squared – a positive one (Graham et al. 2004, Dolan et al. 2008). This suggests a U-shaped curve with younger and older individuals being happier then those in the middle. The effect of gender varies depending on what controls are used suggesting that other correlates are more important in affecting life-satisfaction. In the United States whites are happier than African American however on average Hispanics are happier than whites. This cautions against the use of dummy variables which compare whites to "others" without differentiating for contradictory effects.

Health and happiness are highly-correlated though this only holds for self-reported health ratings. In addition people adapt to their medical conditions however this adaptation is often incomplete. Thus paraplegic victims of accidents are likely to feel better about their life with time however their happiness levels do not rebound back to pre-accident levels fully (Frey and Stutzer, 2002, p. 56). Married people report significantly higher satisfaction scores than those who are single, divorced, widowed or separated and marriage does not benefit one gender more than another. Education's effect on happiness is ambiguous. It is a good predictor of future income and can influence happiness through that channel but it also raises aspirations level. This translates into higher unhappiness levels under adversity, for example in the case of bankruptcy or unemployment. In turn, the effects of unemployment on happiness are highly negative (Frey 2008, p. 48-49).

3. Background on Russia: From Chaos to Relative Stability

The shock therapy of the 1990s, which aimed to quickly transform Russia's state-planned economy into a free-market society, wreaked tremendous havoc on the economic stability during the 1990s. In contrast to this volatile decade (which has been the focus of most life satisfaction research in Russia), the 2000s have been characterized by relative economic stability, low inflation rates, positive real GDP growth and increasing real GDP per capita.

Table 3.1: Economic Indicators for the Russian Federation 1993-2008

	Real GDP Growth, %	Inflation Rate, %	Real GDP per capita, 2000 = 1	Life Expectancy
1993	-8.7	874.622	1.09	65
1994	-12.7	307.634	0.95	64
1995	-4.1	197.471	0.91	65
1996	-3.6	47.742	0.88	66
1997	1.4	14.767	0.9	67
1998	-5.3	27.675	0.85	67
1999	6.4	85.742	0.91	66
Average	-3.8	222.24	0.93	65.7
2000	10	20.776	1	65
2001	5.1	21.461	1.06	65
2002	4.7	15.783	1.11	65
2003	7.3	13.666	1.2	65
2004	7.2	10.887	1.3	65
2005	6.4	12.683	1.4	65
2006	7.7	9.679	1.5	67
2007	8.1	9.007	1.62	68
2008	5.6	14.108	1.71	.
Average 2000-2008	6.9	14.23	1.32	65.625
Average 2004-2008	6.4	11.29	1.506	66.25
Source: International Monetary Fund, World Economic Outlook Database, October 2009				

For example, inflation has been 11.29 % from 2004 to 2008 (an astounding improvement over the 875 % or 308 % of 1993 and 1994 respectively), life expectancy has returned to where it was before the reforms and real GDP and real GDP per capita have continued to grow (see table 3.1 and figures 3.1, 3.2 and 3.3).
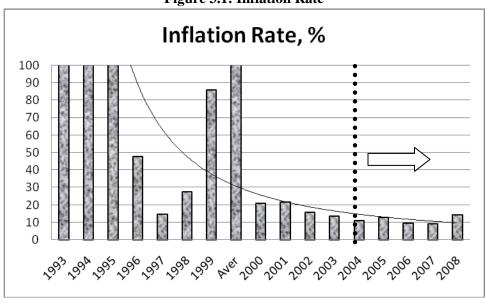
Figure 3.1: Inflation Rate

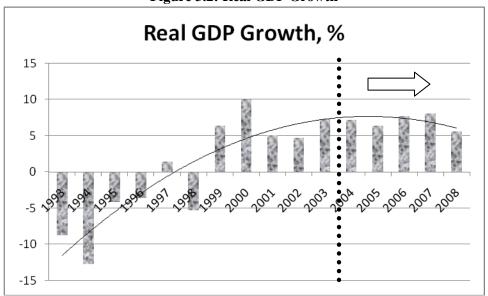Source: International Monetary Fund, World Economic Outlook Database, October 2009

Figure 3.2: Real GDP Growth

Source: International Monetary Fund, World Economic Outlook Database, October 2009
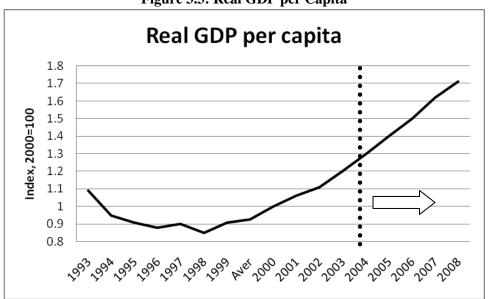
Figure 3.3: Real GDP per Capita

Source: International Monetary Fund, World Economic Outlook Database, October 2009

Yet paradoxically, according to a European Bank for Reconstruction and Development study conducted in the summer of 2006[8] (well before (!) the financial crisis hit Russia), 40 % of Russians continued to report that their financial situation was better in 1989 than currently while only 28 % thought the opposite. This may suggest that actual improvements in economic factors are not as important in determining well-being as comparisons to some real or imagined past associated with romanticized notions.

As such, the major advantages of pre-reform days to today according to the survey's respondents are stability, security, a strong welfare state, and the rule of law. The advantages of today are the freedom to earn more money, buy consumer goods and travel. Political freedom, democracy, civil rights, and other aspects of the political life were rarely mentioned. This would

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[8] The EBRD initiated a study of Russian attitudes and aspirations to learn about the hopes, values and lifestyle of Russian people in different parts of the country. The results of this study were presented at the EBRD Annual Meeting on 20-21 May 2007 in Kazan. The purpose of the survey was to demonstrate the positive and negative sides of socio-economic reforms for different groups of the Russian population and to study their views on future trends and developments in Russian society. The survey results can be found at http://www.ebrd.com/pubs/econo/asp.pdf.

suggest that in contrast to the findings of Frey and Stutzer (2002) political effects on happiness may be less immediate in Russia.

The study finds that perceptions of life now and in 1989 are defined by myths and symbols. As such, the olden days are associated with stability while the modern era is defined by possibilities and opportunities. For our purposes this suggests that satisfaction may be influenced by subjective opinions and interpretations of life in Russia as much as or even more than by concrete factors.

It is particularly important that those who feel that they can and have benefitted from the new economic conditions are more likely to be satisfied with their current life. One of the attitudes we look at in the results section is the effect of individuals' subjective evaluation of their economic value in modern Russia. Given these findings, we would expect this attitude to be highly significant in determining well-being.
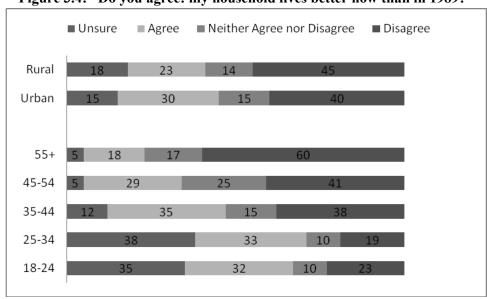
Figure 3.4: "Do you agree: my household lives better now than in 1989?"

Source: EBRD, Life in Transition Survey

In figure 3.4 the breakdown of EBRD's results by age and by location is presented. The results suggest that the elderly and those who live in rural areas are less likely than others to

think that they current life is better than their life in 1989. Given that we define our life satisfaction by comparison (both with others and with prior states), we may find that the effects of age are more negative in Russia and more convex. We should also expect a positive though not necessarily strong effect of living in an urban area when we do not control for personality.[9]

When people use the 1990s as a frame of reference for their current economic well-being, they are more likely to see positive changes, in the decreased wage arrears, regular salaries and higher economic stability. In addition, people have had the chance to adapt to the new system and find their place within it. Negative changes in happiness over the past five years are not associated with the general macroeconomic indicators but rather status changes such as leaving the job market either to retire, become a housewife or to go on maternity leave. We thus expect these changes to be significant in determining changes in happiness. Stability is seen as a more important determinant of well-being than increased income. This suggests that the effect of changes in income on changes in happiness may not be strong.

ERBD also found important differences in people's daily needs by demographic status. The retired, small town residents and single-parent families had more "basic needs" (e.g. health care, food). Coupled with their dependence on declining social provisions, they are less likely to be happy than others. Residents of larger cities, students, young single people, and people with children were concerned with intermediate needs such as acquiring separate housing (from their families), being able to afford entertainment or a car, as well as education. They are also eager but not always able to save to be more confident about the future. They may be especially affected by living space and savings rate.

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[9] Since it is possible that those who are happy self-select to live in urban areas, when we do control for personality effects we may not see any significant effect of living in an urban area on happiness. Alternatively, people living in urban areas may have higher incomes and better jobs, so urban living may increase their happiness levels indirectly through other channels.

The ERBD survey finds that housing is a need for all groups of Russians in all cities, with people often lacking a separate apartment or having to share it with too many people. High housing costs and interest rates on loans prevent people from getting more housing. This suggests that living space will have a significant effect on happiness in our analysis.

Respondents to the EBRD survey indicated that they viewed increased lack of respect for the rule of law, increase in individualism and decline of collective values, lack of trust between individuals, and higher corruption as negative consequences of the reforms. Though we will be unable to capture the effect of these variables on individual happiness since it is assumed they affect all respondents equally, it is possible that the changes in these variables will affect the results we get from 2008 data as opposed to 2004 data.

According to EBRD, the 2000s saw a change in people's values away from earning money quickly toward establishing a career (as opposed to merely a job) and living comfortably. A major concern for people is corruption while they aspire to better housing, education and travel opportunities. Optimism has never been a Russian national trait. However, according to ERBD, the proportion of those have optimistic views has been growing in Russia over the past 5 to 6 years, though they are still less represented in the population than the pessimists. Those who believe that they can achieve success through their own abilities and hard work, as well as those who believe in the potential of the Russian economy to grow, are more likely to have optimistic views. The old are more likely to be pessimistic because of the weak public safety net and meager pensions. Optimism and pessimism can affect happiness in two ways. On the one hand optimists tend to be happier because they interpret events in a more positive light. On the other hand they may have higher aspirations, which may in turn set them up for failure or motivate

them to seek higher and higher levels of income, health and other factors to remain at the same level of happiness.

One of the goals of this paper is to evaluate what the determinants of happiness are and how their relative importance has changed from 2004 until 2008 in Russia. Building on the growing body of subjective well-being literature, this paper seeks to confirm previous findings on life satisfaction determinants and to establish any discrepancies with past literature.

4. Data and Summary Statistics

As previously mentioned, we use data from the Russia Longitudinal Monitoring Survey from the rounds of XIII and XVII focusing on the adult demographic. Out of the more than 10600 respondents present in the survey in 2004, 6904 respondents remain in the panel in 2008. We lose 3,696 cases. In comparison, Frijters (2004), who uses data from RLMS rounds 6 to 10, loses 7637 individuals from 1995(11,098 cases) to 2001(3,461 remaining cases). Our attrition rate while still important is thus much lower than in previous literature, undoubtedly because we focus on less volatile post-transition years.

RLMS data is of very high quality as discussed by Ravallion and Lokshin (2001). However, as noted by Frijters (2004) this data has an important characteristic which must be noted. Households and thus individuals which comprise them who move are not followed[10], which makes attrition levels fairly high. Though housing mobility is on average much lower in Russia than in the United States, this still presents several challenges for any researcher interested in changes of variables over time for the same individuals.

Frijters (2004) mentions two other concerns, namely that the panel has not been replenished with new entrants leading to a decrease in its size and concerns over its representativeness. However, in 2001 in round 10 the Moscow/St. Petersburg sample was replaced with a new sample. Those who were in the original 1994 sample for the Moscow/St. Petersburg, while still included in the data, are not treated as part of the cross-sectional sample representative of Russia as a whole.

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[10] With the exception of households which split. In such cases, RLMS makes every effort to follow the individuals who moved away from the old household whenever this is possible. New households are not part of the representative cross-section and as such are not weighted.

In general RLMS assigns weights to households (each member of the household is then assumed to share the household's weight) in order to account for attrition and non-response. To further complicate the matter, the weights are different for each year. If we were to use weights, it is generally recommended to use the weights for the latest applicable year. Since the 1994 Moscow/St. Petersburg respondents are not treated as part of the cross-section, and their weight is 0 in each round subsequent to 2001. This is problematic because we would like to keep as many respondents in our panel as possible. However, this may put the representativeness of our panel under question. The weighted and unweighted means for 2004 and 2008 are presented in table 4.3. As one can see, the weighted and unweighted means for each year do not differ importantly.[11] Moreover, when we performed our regressions with and without weights the results did not qualitatively change. For our purposes of having the fullest panel possible, we thus made the choice to not use weights in our regressions.

When we compare 2004 and 2008 means we see that on average respondents' incomes increase. Happiness levels also increase though in both years the mean is around the middle value, indicating neither satisfaction nor dissatisfaction with life. When we look at the distributions of reported happiness levels for our samples in figure 4.1, we see that the change in the mean happiness is driven by a jump in the proportion of respondents who report feeling "rather satisfied" with their life (SWB=4). In both years extremes, whether of happiness or

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[11] That is not to say that there are no *significant* differences between the weighted and unweighted means. In a t-test we found that means for age (and thus age squared), male, minority, urban, have partner, # of minor children, household size, living space, unemployed, student, and retired are significantly different at the 95% confidence level for year 2004. However we don't believe that they differ by an important amount for our purposes. On average, our sample when compared to the weighted sample is .85 years younger, 4 % more female, 2 % less minority, 2 % more urban, 1 % less unemployed, 2 % less student, and 3 % less retired; its representatives have a partner 2 % more often, and have .03 more children, .08 more people in the household and .015 % less living space.

unhappiness, are rare.   Extreme unhappiness, however, is more prevalent than extreme happiness.

Figure 4.1: Distributions of Happiness Scores[a]

Life Satisfaction in 2004

Life Satisfaction in 2008

[a] Constructed by the author from RLMS data for years 2004 and 2008 (rounds XII and XVII)

When we compare happiness and income mobility in tables 4.1 and 4.2, we see that both income and happiness fluctuate from 2004 to 2008. However, on average income is more stable than happiness (the simple correlation between 2004 quintile and 2008 quintile is 0.456 while the simple correlation between happiness scores is .327). Happiness is more volatile at the extremes. By contrast, income is less volatile at the bottom and top quintiles. In other words while the very poor and the very rich are less likely to change quintiles than those in the middle three quintiles, the very unhappy and the very happy are more likely than those in the middle to change their happiness level. However extreme changes in happiness (such as from happy to unhappy or vice

versa) are less likely to occur, especially among those who are very unhappy and those who are

"happy" (scores of 4 and 5) in 2004.

Table 4.1: Happiness Mobility 2004-2008[a]

Happiness in 2004	Happiness in 2008						% Total
	1	2	3	4	5	Total	% Total
[a]							of 2004
1	**188 (28.5)**	224(34)	132(20)	104(15.8)	11(1.7)	659 (100)	9.7
2	242(12.3)	**642(32.7)**	500(25.4)	525(26.7)	56(2.8)	1965(100)	28.8
3	134(7.7)	386(22.3)	**566(32.7)**	573(33.1)	74(4.3)	1733(100)	25.4
4	116(5.5)	342(16.3)	424(20.2)	**1029(49.1)**	183(8.7)	2094(100)	30.7
5	26(7)	38(10.2)	64(17.3)	173(46.6)	**70(18.9)**	371(100)	5.4
Total	706	1632	1686	2404	394	6822(100)	100
% Total of 2008	10.3	23.9	24.7	35.2	5.8	100	

[a] Values in parentheses are percentages indicating likelihood of obtaining a given happiness score in 2008, given 2004 happiness score

Source: Constructed by the author from RLMS data for years 2004 and 2008 (rounds XII and XVII)

Table 4.2: Income Mobility 2004-2008[a]

Quintile in 2004	Quintile in 2008						% Total
	1	2	3	4	5	Total	% Total
[b]							of 2004
1	**584(44.6)**	308(23.5)	178(13.6)	121(9.2)	118(9)	1309(100)	20
2	360(27.1)	**393(29.6)**	315(23.8)	166(12.5)	92(6.9)	1326(100)	20
3	146(11.2)	307(23.6)	**348(26.7)**	324(24.9)	177(13.6)	1302(100)	20
4	147(11.2)	198(15.1)	284(21.7)	**379 (29)**	301 (23)	1309(100)	20
5	81(6.2)	119(9)	198(15.1)	313(23.8)	**604(45.9)**	1315(100)	20
Total	1318	1325	1323	1303	1292	6561(100)	100
% Total of 2008	20	20	20	20	20	100	

[a] Values in parentheses are percentages indicating likelihood of being in a given income quintile in 2008, given 2004 quintile

Source: Constructed by the author from RLMS data for years 2004 and 2008 (rounds XII and XVII)

In 2008 respondents are more likely to have a college diploma (this makes sense given that some of the students in the 2004 sample would have graduated from college by 2008). Following similar logic, the precipitous drop in the proportion of students in 2008 and the rise in the proportion of retired people occur as a result of aging. Respondents are less healthy in 2008 (this is likewise logical, since as our sample population ages they are more likely to have more health problems).

A smaller portion of the population is unemployed. Since the increase in the proportion of the retired population is smaller than the decrease in the student population, we can infer that more people entered the job force then left it in the time period under consideration (since the other observed occupations' proportions stayed constant). The lower fraction of the unemployed in 2008 despite this increase in the workforce is testament to the economic growth of the period. It is possible that this decrease in the proportion of the unemployed will make those who remain unemployed less happy because the social stigma of being unemployed increases as general unemployment decreases.

A 1 % decrease in the fraction of married people and the corresponding increase in the divorced population suggest that some of the unions in the 2004 sample disintegrated. Aging explains the decrease in the number of minor children. The drop in household size is ambiguous: it can indicate that some of the grown children moved out into their own households or that some of the (older) household members died. The effects on happiness of this change in household size would accordingly depend on its cause. The increase in living space per person makes sense when we consider this drop in household size. The increase in the proportion of household heads can also occur for reasons that range from divorce and death of previous household heads, to minors moving out and becoming heads of their own households.

On average, individuals have higher savings ratios and spend more of their income on luxuries, while devoting less of their income to helping others in 2008. This is consistent with the increasing individualism and concern for financial stability revealed by the EBRD survey that we discussed previously. The perceptions of survey respondents have also changed on average from 2004 to 2008. In general, respondents feel more powerful, economically valuable and secure in their ability to provide themselves with the bare necessities, and less poor. However, they feel slightly less respected in society. The loss in perceived respect is logical if we consider the aging population.   However, the gains in perceived economic and power ranks, as well as higher security and perceived economic value, suggest that overall despite the negative affects of aging the sample population feels better off in 2008 than in 2004.[12][13]

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[12] Still, it must be noted that in both years on average respondents place themselves on the lower half of both the economic and the power ladders, and report some degree of concern about providing necessities. More than half do not feel valued. We can interpret these findings as proof of Russian inherently negative nature. Alternatively, low financial security and feelings of lacking valuable skills can be indicative of the persistent trauma of the abrupt transition and the ensuing volatility.

Table 4.3: Variable Means (with Standard Deviations) and Definitions

Standard Variables and Controls	Unweighted 2004	Unweighted 2008	Weighted[a] 2004	Weighted[a] 2008	Definition
Happiness	2.93 (1.09)	3.02 (1.11)	2.93 (1.1)	2.99 (1.13)	To what extent are you satisfied with your life in general at the present time?(1=min, 5=max)
Log Income	7.767 (0.75)	8.305 (0.71)	7.755 (0.73)	8.314 (0.71)	Log of total reported real household income in 1992 rubles per capita
Age	42.42 (17.87)	46.42 (17.87)	43.27 (18.34)	47.27 (18.34)	Age of respondent at time of survey in years
Age^2	2119 (1643)	2474 (1784)	2209 (1692)	2571 (1837)	Age in years squared
Male	0.41 (0.49)	0.41 (0.49)	0.45 (0.5)	0.45 (0.5)	Gender dummy (1=male)
Minority	0.17 (0.37)	0.17 (0.37)	0.19 (0.39)	0.19 (0.39)	Minority dummy (1=non-Russian)
College Grad	0.17 (0.38)	0.2 (0.4)	0.16 (0.37)	0.19 (0.39)	Education dummy (1=has a university degree)
Health	3.19 (0.71)	3.14 (0.77)	3.19 (0.73)	3.14 (0.8)	How would you evaluate your health? (1=very bad, 5=very good)
Student	0.1 (0.3)	0.04 (0.19)	0.12 (0.32)	0.04 (0.21)	Occupation = student dummy (1=student)
Retired	0.21 (0.41)	0.25 (0.43)	0.23 (0.42)	0.27 (0.45)	Occupation = retired dummy (1=retired)
Disabled	0.02 (0.13)	0.02 (0.13)	0.02 (0.13)	0.02 (0.13)	Occupation = disabled and unable to work dummy (1=disabled)
Housewife	0.03 (0.18)	0.03 (0.17)	0.03 (0.17)	0.03 (0.17)	Occupation = housewife dummy (1=housewife)
Farmer	0 (0.03)	0 (0.05)	0 (0.03)	0 (0.05)	Occupation = farmer dummy (1=farmer)
Entrepreneur	0.02 (0.13)	0.02 (0.15)	0.02 (0.13)	0.02 (0.14)	Occupation = entrepreneur dummy (1=entrepreneur)
Unemployed	0.1 (0.3)	0.08 (0.27)	0.11 (0.31)	0.09 (0.29)	Occupation = unemployed (whether looking for work or not) dummy (1=unemployed)
Married	0.54 (0.5)	0.53 (0.5)	0.53 (0.5)	0.51 (0.5)	Marriage status = married dummy (1=married)
Have a Partner	0.09 (0.28)	0.09 (0.28)	0.07 (0.25)	0.07 (0.25)	Marriage status = living together but unmarried dummy (1=partnered)
Divorced	0.07 (0.26)	0.08 (0.28)	0.07 (0.26)	0.08 (0.27)	Marriage status = divorced dummy (1=divorced)
Widowed	0.11 (0.31)	0.13 (0.34)	0.11 (0.31)	0.13 (0.34)	Marriage status = widowed dummy (1=widowed)
# Children	0.5 (0.77)	0.44 (0.74)	0.47 (0.77)	0.38 (0.71)	Number of minor children
Urban	0.65 (0.48)	0.65 (0.48)	0.63 (0.48)	0.63 (0.48)	Urban dummy (1=urban)
HH Size	3.379 (1.55)	3.237 (1.64)	3.457 (1.64)	3.355 (1.77)	Total number of people in the household
Head of HH	0.42 (0.49)	0.46 (0.5)	0.43 (0.5)	0.46 (0.5)	Head of household dummy (head of household =1)

Other Explanatory Variables	Unweighted 2004	Unweighted 2008	Weighted 2004	Weighted 2008	Definition
Log Living Space	2.832 (0.52)	2.92 (0.53)	2.845 (0.51)	2.915 (0.52)	Log of reported general usable household living space in square meters per person
Savings Ratio	0.025 (0.09)	0.037 (0.11)	0.021 (0.08)	0.037 (0.11)	Ratio of reported household savings to household expenditures
Prosocial Ratio	0.051 (0.3)	0.045 (0.18)	0.052 (0.25)	0.047 (0.19)	Ratio of reported help to non-household members to total household expenditures
Luxuries Ratio	0.026 (0.11)	0.034 (0.12)	0.025 (0.11)	0.035 (0.12)	Ratio of reported expenditures on luxuries[b] to total expenditures
Economic Rank	3.98 (1.49)	4.04 (1.43)	4 (1.52)	4.05 (1.46)	On a 9-step ladder with the poorest people on the bottom, where do you stand?
Power Rank	3.69 (1.71)	3.81 (1.65)	3.71 (1.73)	3.82 (1.69)	On a 9-step ladder with those with the least amount of power/rights, where do you stand?
Respect Rank	6.09 (1.61)	6.07 (1.62)	6.09 (1.62)	6.04 (1.63)	On a 9-step ladder with people who get no respect on the bottom, where do you stand?
Security	2.08 (1.2)	2.16 (1.22)	2.09 (1.2)	2.17 (1.23)	Concerned about providing bare necessities for the next year? (1=very, 5= not at all)
Valued	0.46 (0.5)	0.49 (0.5)	0.46 (0.5)	0.48 (0.5)	Valued dummy (1= feel that they have some characteristics valuable in current economy)[c]
Valid Observations	5086	5041	3245	3205	Observations where no variables are missing

[a] Using 2008 weights provided by the RLMS

[b] Luxury expenditures are defined by RLMS (rather arbitrarily) to consist of purchases of cars, motorcycles, summer housing, garages, and building materials

[c] To be more precise, 1 in this case equals a response of "definitely or most likely does not describe me" to the following question: Does this expression describe you or not - "It seems to me that I don't have many characteristics that are valuable in the current economy."

Source: RLMS Rounds XIII and XVII

5. Model and Estimation Results

Our main model is of the following latent variable form:

$$SWB_{it}^* = \beta x_{it} + \varepsilon_{it} + v_i$$

(1)

$$SWB_{it} = k \leftrightarrow \lambda_k \leq SWB_{it}^* < \lambda_{k+1}$$

where SWB_{it}^* is the latent variable; $SWB_{it} \in \{1..5\}$ is observed life satisfaction; λ_k is the cut-off

point (increasing in k) for responses to the life satisfaction question; x_{it} is a vector of observable

time-varying characteristics for each individual, ε_{it} is a time-varying logit-distributed error term

and $\varepsilon_{it} \perp x_{it}$. We use an ordered logit to estimate this model in section 5.1. If there are time-

invariant unobserved factors, v_i , related to initial levels of observed factors but not their

changes, that is to say if $cov\ (v_i, x_{it}) \neq 0$ and $cov\ (v_i, \Delta x_{it}) = 0$ then our estimates in the cross-

sectional analysis will be biased unless we attempt to control for these time-invariant traits. We

attempt to do so by including variables that proxy for personality traits.

In section 5.2 in order to look at changes in happiness[14] we create four dummies to look

at the following two categories of happiness mobility:

"Reversals":

$$\text{Happy } (SWB_{it} = 4 \text{ or } 5) \rightarrow \text{Unhappy } (SWB_{it} = 1 \text{ or } 2)$$

$$\text{Unhappy } (SWB_{it} = 1 \text{ or } 2) \rightarrow \text{Happy } (SWB_{it} = 4 \text{ or } 5)$$

"Moves away from neutrality":

$$\text{Neutral } (SWB_{it} = 3) \rightarrow \text{Unhappy } (SWB_{it} = 1 \text{ or } 2)$$

$$\text{Neutral } (SWB_{it} = 3) \rightarrow \text{Happy } (SWB_{it} = 4 \text{ or } 5)$$

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[14] As we discussed in the introduction, simply using a first-difference estimator of the form $SWB_{it} - SWB_{it-1} = \beta\ \Delta x_{it} + \Delta \varepsilon_{it}$ leads to nonsensical results.

We then estimate the determinants of the changes in the probability of each event occurring using a simple logit regression. As with a first-difference estimator any time-invariant effects cancel out since we are looking at changes.

5.1 Cross-Sectional Analysis of the Determinants of Happiness

We begin by running standard regressions for both 2004 and 2008. The results are reported in table 5.1. Similar to Graham, we find that there is a quadratic relationship between age and happiness since the coefficient on age is negative but the coefficient on age squared is positive (though small). When we do not control for household head status males are more likely to be happy than females in 2004 though we do not observe the same effects in 2008. This could be due to changes in the status of women in Russia through the years. Given that our cohort has aged, it may also indicate that as women and men age the differences in their happiness levels decrease on average. When we control for household head status, the coefficient on male is no longer significant even in 2004. Given that the simple correlation between male and household head is .539 in 2004 and .523 in this could be due to multicollinearity.

Minorities are happier than ethnic Russians in 2004. Graham observes the same effect for 1995 and 2000. This is quite different from trends in the United States where African Americans tend to be less happy than whites.[15] However, this effect disappears in 2008. Given increasing incidents of xenophobic attacks by skinheads and the growing popularity of the slogan "Russia for Russians," minorities are expected to be worse off in Russia today than in 2004.[16]

College graduates are on average happier than non-graduates. Unsurprisingly, health is highly correlated with happiness and in fact is the single most important factor in our standard

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[15] See Blanchflower and Oswald (1999).
[16] The Russian Public Opinion Research Center found that 34 % of all Russians supported the slogan in 2006 as long as Russian was understood to mean "all Russian citizens". In 2004 only 23 % expressed support.

model in its influence on general well-being. Students are significantly happier in 2004 than non-students, probably because they are younger and in general supported economically by parents, thus insulating them from the problems of the adult world. Given the attrition of students due to graduation through the years, it is unsurprising that we do not observe the same effects in 2008. Being retired and disabled is associated with lower happiness. These effects are more significant in 2008, probably because of the aging of the sample.

Entrepreneurs are happier than non-entrepreneurs on average (of course, given the limitations of cross-sectional analysis we cannot make causal references at this point: it is possible that happier people self-select into a career as entrepreneurs; a related explanation would suggest that people who are entrepreneurs have certain traits such as self-confidence and initiative which are also positively correlated with happiness, thus biasing the effect on the entrepreneur dummy upward).

Being married or having a partner have a similar positive and significant effect on the odds of being happier in 2004. However by 2008 the benefits to marriage as opposed to simple cohabitation increase. It is logical to assume that while people who cohabit enjoy some of the same benefits as married couples, those who remain unmarried after four years but continue living together may not be as compatible or as happy as those who chose to formalize their union. Married individuals are more likely to be happier by a smaller margin in 2008 than in 2004. A potential reason for this is adaptation: we get used to the benefits we receive from being married, and do not appreciate them as much as time goes on. The same logic can be applied to the effect of being unemployed. In both years the unemployed are on average less likely to be happy than those who have a job. They are however less likely to be unhappy in 2008 than in

2004, potentially because those who continued to be unemployed have adapted to their situation and learned coping strategies to offset some of its negative effects.

The coefficient on income is highly significant and positive in both years. However its relative effect on happiness is small. For example, having income that is twice as large is associated with a smaller change in the odds of falling into a higher category of happiness than being married or feeling one point healthier. Last, living in a larger household is correlated to slightly higher odds of being happier. As before, we cannot offer a causal interpretation: it may well be that those who are happier self-select to have larger families.

Our results fall in line with prior research. Despite the relative macroeconomic stability of the time period in question we observe some differences in the effect of exogenous variables on happiness. In particular, the positive effect of being male or a minority disappears in 2008. As discussed above, it is likely that these changes can be explained by the changing social context. In contrast, the changes in the effect of being a student, retired, and disabled are most likely explained by the aging of the sample.

Table 5.1: Standard Ordered Logit Regressions on Happiness[a]

Year	2004			2008		
Variable	(1)	(2)	(3)	(1)	(2)	(3)
Log Income	0.46***	0.47***	0.47***	0.45***	0.46***	0.45***
	(0.037)	(0.037)	(0.037)	(0.038)	(0.038)	(0.038)
Age	-0.09***	-0.09***	-0.09***	-0.06***	-0.06***	-0.06***
	(0.010)	(0.010)	(0.010)	(0.009)	(0.009)	(0.010)
Age^2	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Male	0.18***	0.18***	0.13	0.03	0.03	0.09
	(0.052)	(0.052)	(0.073)	(0.051)	(0.051)	(0.069)
Minority	0.27***	0.23***	0.23***	0.08	0.04	0.05
	(0.066)	(0.067)	(0.067)	(0.065)	(0.066)	(0.066)
College Grad	0.22***	0.24***	0.24***	0.24***	0.24***	0.24***
	(0.064)	(0.064)	(0.064)	(0.059)	(0.059)	(0.059)
Health	0.77***	0.76***	0.76***	0.67***	0.67***	0.67***
	(0.042)	(0.042)	(0.042)	(0.040)	(0.040)	(0.040)
Student	0.52***	0.49***	0.50***	0.16	0.15	0.14
	(0.142)	(0.142)	(0.142)	(0.297)	(0.298)	(0.298)
Retired	-0.20*	-0.20*	-0.19	-0.25**	-0.25**	-0.26**
	(0.099)	(0.099)	(0.099)	(0.089)	(0.089)	(0.090)
Disabled	-0.45*	-0.46*	-0.46*	-0.64***	-0.66***	-0.67***
	(0.187)	(0.187)	(0.187)	(0.189)	(0.189)	(0.189)
Housewife	0.06	0.02	0.02	-0.12	-0.15	-0.15
	(0.138)	(0.138)	(0.138)	(0.142)	(0.142)	(0.142)
Farmer	-0.00	-0.04	-0.05	-0.67	-0.76	-0.74
	(0.826)	(0.825)	(0.825)	(0.489)	(0.494)	(0.495)
Entrepreneur	0.40*	0.40*	0.40*	0.43**	0.43**	0.43**
	(0.182)	(0.182)	(0.182)	(0.160)	(0.160)	(0.160)
Unemployed	-0.67***	-0.69***	-0.69***	-0.56***	-0.58***	-0.58***
	(0.087)	(0.087)	(0.087)	(0.097)	(0.097)	(0.097)
Married	0.56***	0.56***	0.56***	0.48***	0.47***	0.46***
	(0.096)	(0.096)	(0.096)	(0.090)	(0.090)	(0.090)
Have a Partner	0.47***	0.49***	0.49***	0.23*	0.24*	0.23*
	(0.115)	(0.115)	(0.115)	(0.110)	(0.110)	(0.110)
Divorced	-0.10	-0.05	-0.07	-0.09	-0.07	-0.05
	(0.123)	(0.124)	(0.125)	(0.112)	(0.112)	(0.113)
Widowed	0.19	0.24	0.22	0.08	0.10	0.12
	(0.126)	(0.126)	(0.128)	(0.116)	(0.116)	(0.117)
# Children	0.01	-0.03	-0.03	0.06	0.03	0.05
	(0.038)	(0.039)	(0.039)	(0.039)	(0.039)	(0.040)
Urban	-0.08	-0.07	-0.07	-0.06	-0.05	-0.05
	(0.052)	(0.052)	(0.052)	(0.051)	(0.051)	(0.051)
HH Size		0.07***	0.07***		0.05**	0.04*
		(0.018)	(0.020)		(0.017)	(0.019)
Head of HH			0.07			-0.09
			(0.075)			(0.069)
Observations	6,013	6,013	6,013	6,270	6,270	6,270
Pseudo R^2	0.07	0.07	0.07	0.05	0.05	0.05

[a]Standard errors are in parentheses; *** p<0.001, ** p<0.01, * p<0.05

We then assess the effects of determinants that are less prominent in past research.[17] "The housing question" has plagued Russia since its Soviet days when rapid industrialization lead to a burgeoning urban population, a shortage of housing, and the advent of so called "kommunalkas": communal apartments where several families shared a kitchen and bathroom. Today, as we saw in the EBRD survey, affordable housing continues to be an issue, forcing families to live in crammed conditions. Unsurprisingly, when we add living space as a variable into our model it is significant and has a positive effect on the odds of being happy. Moreover, when we account for living space, the effect of income on happiness becomes less important.

Dunn et al. (2008) suggest that how people spend their money may be just as important as income in affecting happiness. She theorizes that income's positive but surprisingly weak effect on well-being can be explained by the inefficient (from the perspective of lasting happiness) ways in which increased income is spent. In particular, she finds that higher prosocial spending (helping acquaintances, donating to charity, etc.) is associated with happiness. To test this assertion we control for the ratio of expenditures devoted to prosocial causes and the ratio of spending set aside for luxuries, as well as the savings ratio. We find, contrary to Dunn's findings, that only the savings ratio is significantly related to happiness. Dunn does not control for other determinants of happiness aside from income which can explain why our results are different. The significant and positive effect of higher savings ratios can be explained by the added security that it provides to respondents. The effect of the savings ration for 2008 is smaller, suggesting that increases in overall economic stability make precautionary savings and the psychological comfort they provide less important.

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[17] We do not include the results of all of our regressions here. Whenever the inclusion of a particular group of variables had the same or very similar effect as the inclusion of any one of those variables, we only reported group results.

One innovation of this paper is the attempt to control for perceptions and attitudes. We include three rank variables: a perceived power rank, a perceived respect rank, and most importantly a perceived economic rank which can be interpreted as an individual's assessment of her economic condition based on whichever frame of reference she chooses. Using a reported subjective economic ranking instead of a constructed relative income measure allows us to escape the pitfalls of attempting to determine the individual's frame of reference. We can just assume that the individual assesses her own economic standing based on a frame of reference she deems appropriate.

We find that the rankings are positively correlated with happiness. The economic rank is the most important of the three in determining happiness confirming the importance of relative income to subjective well-being. Moreover, when we account for the perceived rankings, we see that the effects of many of the objective determinants of happiness decrease or even disappear. For example, the positive effects of income, health, having a partner, living space, and the savings ratio on well-being decrease in both years while the negative effects of unemployment are tempered. At the same time college education and entrepreneur status stop being significant. The effect of minority status (which was not significant in 2008) also stops being significant for 2004 once we control for ranking perceptions. The negative effects of being disabled and retired decrease in both significance and value for the year 2008 (as we discussed previously, these effects were not significant in 2004).

Besides reflecting attitudes, these perceptions can of course also relate to specific personality characteristics which also influence happiness. This is especially true for the respect rank since it is very stable across years: in a paired t-test we found that on average each year's respect rank does not statistically differ from the mean of the two years at the 95 % confidence

level. As such while their inclusion can be seen as a control on personality, to the extent to which the rankings reveal certain personality traits that also positively influence happiness, their coefficients will be biased up.

When in addition to perceived ranks we include a measure of perceived financial security and perceived skill value in our regression, their coefficients are positive and significant. These findings confirm the conclusions of EBRD, which as we discussed previously revealed the importance of financial stability and feeling able to succeed in the market as important predictors of satisfaction with life. We find that the effects of income and health further decrease in size with the inclusion of these attitudes, while living space and savings ratio decrease in both effect size and significance.

Finally we construct a measure of permanent happiness. Our method is simple and is an extension of van Praag (2003) who uses the average of income for each individual to proxy for permanent income. We follow this same methodology and proxy for permanent happiness by including the mean of the two reported life satisfaction scores in the regression. Some psychologists hold the view that people are genetically predisposed to be at a certain level of happiness around which they oscillate depending on changes in their life. [18] This baseline of happiness is what we call "permanent happiness."

An attempt to control for this permanent happiness greatly decreases either or both the effect and the significance of most objective factors. The income effect disappears for both years while the effect of health decreases by more than half. The negative effects of unemployment also decrease by half, and benefits to marriage decrease in both years but especially in 2008.

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[18] See Headey and Wearing (1989) whose dynamic equilibrium theory explains how happiness fluctuates around a fundamental level of subjective well-being defined by a natural capacity to be happy.

Once we control for permanent happiness, the effect of a college education actually becomes negative, suggesting that while happy people tend to get a college education, people of equal permanent happiness are less happy if they have a college degree. This could reflect the low returns to education in post-transition Russia, where many government-funded organizations were forced to close down after the transition because of low funds. This forced many people with advanced degrees into jobs in fields unrelated to their education in order to simply make a living. For example, it is not uncommon in Russia to meet taxi drivers with double college degrees.

The effects of living space and the savings ratio effectively disappear. In addition, the effect of feeling valued becomes insignificant when we control for permanent happiness; the effects of the other perceptions remain significant but smaller probably because these attitudes are highly influenced by personality which in turn determines permanent happiness.

We find that higher permanent happiness has a very large effect on reported happiness in each year compared to the other determinants. However the high correlation between permanent happiness and each year's happiness (.811 for 2004 and .818 for 2008) would bias the coefficient on permanent happiness up. Because of this high correlation, our permanent happiness measure is imperfect. However it is useful to understand that in general controlling for genetic predisposition toward happiness decreases the effect and significance of material factors on well-being. This makes intuitive sense within the framework of dynamic equilibrium theory, since people's happiness would depart from their "natural" levels only in response to changes in material factors, not their levels.

Table 5.2: Ordered Logit Regressions on Happiness with Non-Standard Determinants[a]

Year	2004				2008			
Variable	(4)	(5)	(6)	(7)	(4)	(5)	(6)	(7)
Log Income	0.42***	0.34***	0.27***	0.08	0.41***	0.31***	0.25***	-0.08
	(0.038)	(0.039)	(0.041)	(0.045)	(0.040)	(0.041)	(0.044)	(0.049)
Age	-0.09***	-0.08***	-0.07***	-0.05***	-0.06***	-0.05***	-0.05***	0.05***
	(0.010)	(0.011)	(0.011)	(0.012)	(0.010)	(0.010)	(0.011)	(0.013)
Age^2	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	-0.00**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Male	0.13	0.14	0.04	-0.14	0.11	0.05	-0.00	-0.20*
	(0.074)	(0.077)	(0.081)	(0.091)	(0.071)	(0.074)	(0.079)	(0.090)
Minority	0.21**	0.01	0.04	0.04	0.06	-0.01	-0.04	-0.04
	(0.069)	(0.071)	(0.075)	(0.084)	(0.068)	(0.072)	(0.076)	(0.085)
College Grad	0.20**	0.11	0.03	-0.23**	0.21***	0.12	0.09	-0.16*
	(0.066)	(0.067)	(0.070)	(0.078)	(0.061)	(0.063)	(0.067)	(0.076)
Health	0.76***	0.65***	0.59***	0.26***	0.67***	0.60***	0.53***	0.23***
	(0.043)	(0.044)	(0.046)	(0.052)	(0.041)	(0.043)	(0.046)	(0.052)
Student	0.45**	0.46**	0.36*	0.09	0.06	0.33	0.11	-0.05
	(0.145)	(0.149)	(0.157)	(0.177)	(0.303)	(0.323)	(0.334)	(0.379)
Retired	-0.19	-0.16	-0.09	-0.04	-0.27**	-0.18	-0.25*	-0.27*
	(0.100)	(0.103)	(0.108)	(0.120)	(0.092)	(0.096)	(0.102)	(0.115)
Disabled	-0.48*	-0.48*	-0.46*	-0.04	-0.71***	-0.54*	-0.60**	-0.38
	(0.190)	(0.200)	(0.207)	(0.229)	(0.193)	(0.210)	(0.226)	(0.257)
Housewife	-0.01	-0.02	-0.06	-0.04	-0.24	-0.21	-0.23	0.02
	(0.141)	(0.145)	(0.150)	(0.166)	(0.146)	(0.155)	(0.164)	(0.182)
Farmer	-0.16	-0.23	-0.44	0.69	-0.92	-0.64	-0.70	-0.23
	(0.824)	(1.035)	(0.992)	(0.983)	(0.501)	(0.558)	(0.592)	(0.771)
Entrepreneur	0.37*	0.07	0.02	-0.02	0.40*	0.26	0.17	-0.17
	(0.184)	(0.192)	(0.196)	(0.222)	(0.163)	(0.171)	(0.175)	(0.196)
Unemployed	-0.70***	-0.65***	-0.61***	-0.31**	-0.56***	-0.45***	-0.46***	-0.31*
	(0.089)	(0.091)	(0.096)	(0.108)	(0.100)	(0.105)	(0.111)	(0.126)
Married	0.57***	0.53***	0.56***	0.29*	0.47***	0.47***	0.53***	0.02
	(0.099)	(0.102)	(0.107)	(0.120)	(0.093)	(0.098)	(0.104)	(0.118)
Have a Partner	0.55***	0.51***	0.49***	0.46**	0.28*	0.26*	0.32*	-0.00
	(0.119)	(0.123)	(0.129)	(0.144)	(0.115)	(0.121)	(0.128)	(0.145)
Divorced	-0.06	0.04	0.07	0.09	-0.05	-0.01	0.05	-0.01
	(0.128)	(0.133)	(0.139)	(0.154)	(0.117)	(0.122)	(0.130)	(0.148)
Widowed	0.18	0.25	0.22	-0.10	0.10	0.11	0.23	0.17
	(0.131)	(0.135)	(0.141)	(0.158)	(0.120)	(0.126)	(0.134)	(0.150)
# Children	-0.01	0.00	0.04	0.02	0.07	0.03	0.02	-0.06
	(0.040)	(0.041)	(0.044)	(0.048)	(0.042)	(0.043)	(0.046)	(0.052)
Urban	-0.02	0.03	-0.04	-0.01	-0.02	-0.04	-0.12*	-0.20**
	(0.054)	(0.056)	(0.060)	(0.067)	(0.053)	(0.056)	(0.060)	(0.067)
HH Size	0.12***	0.04	0.07**	0.04	0.11***	0.08***	0.07**	-0.01
	(0.023)	(0.024)	(0.025)	(0.028)	(0.023)	(0.024)	(0.025)	(0.029)
Head of HH	0.05	0.05	0.11	0.25**	-0.13	-0.04	-0.04	-0.08
	(0.076)	(0.079)	(0.083)	(0.093)	(0.071)	(0.075)	(0.079)	(0.090)
Log Living	0.28***	0.18**	0.18*	0.08	0.26***	0.19**	0.16*	-0.00
	(0.064)	(0.066)	(0.070)	(0.077)	(0.065)	(0.068)	(0.071)	(0.081)
Savings Ratio	0.91**	0.82**	0.74*	-0.01	0.74***	0.68**	0.41	-0.11
	(0.279)	(0.289)	(0.311)	(0.338)	(0.216)	(0.224)	(0.241)	(0.265)
Prosocial Ratio	0.01				0.07			
	(0.098)				(0.137)			
Luxuries Ratio	0.18				0.21			
	(0.223)				(0.196)			
Economic Rank		0.34***	0.31***	0.21***		0.24***	0.21***	0.09**
		(0.023)	(0.024)	(0.027)		(0.025)	(0.026)	(0.030)
Power Rank		0.13***	0.12***	0.05*		0.15***	0.14***	0.05*
		(0.020)	(0.021)	(0.023)		(0.020)	(0.022)	(0.025)
Respect Rank		0.08***	0.10***	0.06**		0.10***	0.10***	0.06**
		(0.017)	(0.018)	(0.020)		(0.017)	(0.018)	(0.021)
Security			0.38***	0.25***			0.37***	0.24***
			(0.025)	(0.027)			(0.024)	(0.027)
Valued			0.19***	-0.05			0.21***	0.10
			(0.055)	(0.061)			(0.058)	(0.065)
Permanent Happiness				2.85***				3.15***
				(0.056)				(0.061)
Observations	5,821	5,610	5,171	5,134	5,981	5,610	5,041	5,020
Pseudo R^2	0.07	0.11	0.13	0.39	0.06	0.09	0.11	0.40

[a]Standard errors are in parentheses; *** p<0.001, ** p<0.01, * p<0.05

5.2 Changes in Happiness: Away from Neutral and Across the Spectrum

Table 5.3: Frequencies of changes

Change type	Direction of Change	Frequency
"Reversal"	Happy (SWB_{it} = 4 or 5) → Unhappy (SWB_{it}= 1 or 2)	532
	Unhappy (SWB_{it}= 1 or 2) → Happy (SWB_{it} = 4 or 5)	714
"Away from neutrality"	Neutral (SWB_{it} = 3) → Unhappy (SWB_{it}= 1 or 2)	520
	Neutral (SWB_{it} = 3) → Happy (SWB_{it} = 4 or 5)	660
No relevant change		4437

In looking at changes in happiness we focus on two categories: complete reversals and movements from neutral states to non-neutral states. The frequencies of movements are presented in table 5.3. Roughly a third of respondents experience one of the changes that we analyze. The means of various indicators for the changers, the non-changers and the total population are presented in table 5.4. In general those who move in a positive direction are on average more likely to be college graduates in 2004, less likely to have a live-in partner, have more minor children, and are more likely to be urban than those who move in a negative direction. Those whose happiness drastically reverses are more likely to be housewives, have fewer children, be less urban and be a head of the household when compared to those whose happiness changes from a neutral level. When compared to non-changers, changers are more likely to belong to a minority group and to be unemployed, and less likely to be disabled or urban. We noted a curiosity: those who experience a drastic positive change are on average older, less likely to be a student, but more likely to be retired, widowed or divorced, female and Russian, less likely to be an entrepreneur but more likely to be unemployed, and are less well off in 2004 when compared to those who experience a drastic negative change. In contrast the opposite is true of those whose happiness level changes from neutral to happy as opposed to unhappy: they tend to be better off economically, younger, and so forth. This means that drastic changes are catalyzed by different factors than changes from a neutral happiness level, and that

distinct populations are impacted by the two kinds of changes. We know from the EBRD findings discussed in section 2 that different subpopulations in Russia have different needs (basic, intermediate, and advanced) the fulfillment of which results in their increased well-being. If these subpopulations are distributed non-randomly among different happiness levels, then we would observe that factors which influence the happiness levels of the population with neutral happiness levels in 2004 are different from the factors that cause the "unhappy" to become "happy" and vice versa.

Table 5.4: 2004 Means of Select Statistics by Type of Happiness Change

Change Type	Reversal		Shift away from neutrality		No Change	Total
Variable	H→ Unh[a]	Unh→ H[b]	N→Unh[c]	N→H[d]		
Income Quintile	3.09	2.87	2.80	3.08	3.02	3.00
Age	41.48	44.78	42.24	38.81	42.69	42.40
Male	0.47	0.39	0.40	0.44	0.40	0.41
Minority	0.23	0.19	0.18	0.21	0.15	0.17
College Grad	0.14	0.15	0.12	0.21	0.18	0.17
Student	0.12	0.07	0.09	0.12	0.11	0.10
Retired	0.19	0.24	0.20	0.15	0.22	0.21
Disabled	0.01	0.01	0.02	0.01	0.02	0.02
Housewife	0.03	0.03	0.04	0.04	0.03	0.03
Farmer	0.00	0.00	0.00	0.00	0.00	0.00
Entrepreneur	0.03	0.01	0.02	0.03	0.01	0.02
Unemployed	0.10	0.13	0.12	0.10	0.09	0.10
Married	0.54	0.54	0.51	0.59	0.53	0.54
Have a Partner	0.09	0.08	0.11	0.07	0.09	0.09
Divorced	0.06	0.07	0.09	0.05	0.08	0.07
Widowed	0.09	0.15	0.09	0.07	0.11	0.11
# Children	0.46	0.51	0.51	0.53	0.50	0.50
Urban	0.60	0.62	0.62	0.65	0.66	0.65
HH Size	3.66	3.41	3.30	3.57	3.32	3.38
Head of HH	0.42	0.42	0.42	0.38	0.42	0.42

[a] H→ Unh = Happy (SWB_{it} = 4 or 5) → Unhappy (SWB_{it}= 1 or 2)
[b] Unh→ H = Unhappy (SWB_{it}= 1 or 2) → Happy (SWB_{it} = 4 or 5)
[c] N→Unh = Neutral (SWB_{it} = 3) → Unhappy (SWB_{it}= 1 or 2)
[d] N→H = Neutral (SWB_{it} = 3) → Happy (SWB_{it} = 4 or 5)

In table 5.5 we present the results of our regressions on the changes in happiness. For each change we run two regressions, including only objective changes in the first regression, and both objective changes and shifts in subjective attitudes in the second regression. As we conjectured, dramatic changes in happiness and changes away from neutral happiness are driven by factors that are somewhat different.

5.2.1 The determinants of unhappiness

5.2.1.1 What factors affect the likelihood of a shift from $SWB_{it} = 4, 5$ to $SWB_{it} = 1, 2$?

We find that getting divorced, becoming unemployed, retiring, becoming disabled, becoming a housewife, and stopping being an entrepreneur significantly increase the likelihood of a dramatic decrease in happiness. These findings agree with common-sense and prior research. For example, Ravallion and Lokshin (2001) also find that personal unemployment depresses happiness in the Russian context. We should note that in part 5.1 we discovered that unemployment as a static influence also has a significant and large negative impact. This can be explained by the severe psychological affects of being unemployed which result in depression and anxiety and persist well after the material consequences of losing one's jobs dissipate. However, the isolated effect of remaining unemployed does not significantly affect happiness when we use "not unemployed" as reference.

Being disabled was also highly correlated with happiness in our cross-sectional analysis though the effects of becoming disabled are proportionally more important. "Retiring" has a more negative effect on happiness than the effect of "being retired" that we identified in part 5.1. This can be explained by adaptation: initially when people retire they struggle to adapt their lifestyle to the new circumstances, and in the context of Russia, to the low pension income; as they adapt they learn to focus on the positive facets of the life change and to take advantage of

them. The same logic can be extended to explain why we did not find a significant effect of being a housewife or divorced on happiness in the cross-sectional analysis despite their significant dynamic effects.

Those who end their career in entrepreneurship may do so because their business fails, because they want to retire, because they tire of dealing with the chaotic Russian business world, its corruption and bureaucracy, and for many other factors. The significance of this status change in increasing the likelihood of major negative happiness changes suggests that whatever the reason for leaving entrepreneurship, the transition is painful.

In turn, better health, increases in living area, recovering from disability and increases in the savings ratio decrease the odds of a large drop on happiness. These findings confirm our cross-sectional results. When we control for changes in subjective rankings, we find that they are significant in decreasing the odds of a large drop in happiness. Changes in perceptions of value and relative income have a larger impact than changes in power or respect rankings. Given that personality is seen as time-invariant, changes in subjective evaluations are assumed to reflect reality. This means that within the Russian context when people feel that their skills are more useful in the economy they are less likely to become unhappy. Similarly, when their relative income increases, they are less likely to experience a precipitous drop in happiness. Even though relative income is important in preventing happiness decreases, actual income does not have a significant effect. This seems to confirm the idea that Robert Frank expresses in *Luxury Fever* (1999) – that income and in particular its changes have little to do with happiness after a sustenance threshold has been crossed.

The effects of retiring and becoming disabled become insignificant after we control for changes in attitudes. This suggests that adverse status changes affect well-being not only

through direct channels but also through changes in perceptions. Changers in this scenario are influenced by changes in occupation status, health, living circumstances, subjective evaluations and perceived economic well-being. This suggests that the changers in this scenario have advanced needs.

5.2.1.2 *What factors affect the likelihood of a shift from SWB_{it} = 3 to SWB_{it}= 1, 2?*

The determinants of becoming unhappy from a neutral starting point differ somewhat from the factors we discussed in the section above. Just as in the previous section, becoming unemployed and disabled increase the odds of crossing over into unhappy territory. However remaining unemployed continues to have significant and positive effects that remain less in magnitude than the effects of a fresh pink slip. Remaining married and getting married decrease the odds of falling into a lower category of happiness. Surprisingly, continued widowhood also reduces the likelihood of decreases in happiness. This can be explained by widows having adapted to their status to such a point that it no longer adversely effects their well-being. Given that the reference group is singles, who are likely to be looking for a partner and as result be dissatisfied about not having one, long-term widows by comparison are more likely to be content with their situation. Coming out of retirement has a significant effect on reducing the chance of lower happiness, probably because of the increased control and economic opportunities it provides. Also, attaining a college degree decreases the odds of falling into a less happy category when we do not control for attitudes. This is in line with our findings in the cross-sectional analysis which show a positive correlation between having a college diploma and happiness.

As in the previous scenario, changes in perceived relative economic well-being decrease the odds of lower happiness. However the effects of relative income are not as important as in the last section. By contrast, changes in real income have an important effect that is about twice

the effect of perceived relative income. This suggests that the changers from neutral to lower happiness levels have needs that are more basic than the needs of the previous cohort.

5.2.2 The determinants of becoming happy

5.2.2.1 What factors affect the likelihood of a shift from $SWB_{it} = 1, 2$ to $SWB_{it} = 4, 5$?

For the unhappy in 2004, attaining a college diploma has a significant and negative effect on moving into the happy category. This is somewhat surprising since education was positively correlated with happiness in the cross-section, while attaining a diploma had negative effects on moving into a lower category from a neutral level of happiness in the previous analysis. A possible explanation would be that unhappy college students become unhappy graduates who are less likely to take full advantage of the opportunities their education offers them. This is further confirmed by the negative and significant coefficient on leaving school (in the sense of stopping being a student). Staying in school also has a negative correlation with becoming happy. Since young people on average are happier than adults, those who are not may just be naturally prone to being unhappy which would reduce their chances of increasing their happiness level. This conjecture is supported by the decrease it the significance of the coefficient on staying in school with the inclusion of changes in subjective attitudes.

Aside from education, the determinants of changes to happiness are very similar to those in previous sections. Getting married, remaining widowed, and coming out of retirement have a positive effect on the odds of becoming happy, as do positive changes in health, real and perceived relative income, and feelings of being valued and respected.

5.2.2.2 What factors affect the likelihood of a shift from $SWB_{it} = 3$ to $SWB_{it} = 4, 5$?

Last, for those who have neutral life satisfaction in 2004, remaining married, as well as increases in health and perceived economic and power ranks increase the odds of becoming

happy. Becoming unemployed has a negative effect. When we control for changes in attitudes, staying in school and stopping being a housewife (and thus entering the job force), as well as stopping being an entrepreneur, have positive affects. Given the stressful nature of doing business in Russia, this seems rational. These findings suggest that this last cohort values stability. To our surprise, in no scenarios did being widowed or losing a child significantly affect happiness.

Table 5.5: Simple Logit Regressions on Dummies of Changes in Happiness[a]

		Positive Changes				Negative Changes			
		H→ Unh		N→ Unh		Unh→H		N→H	
Domain	Variables	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Education	Received	0.08	0.05	-0.78**	-0.46	-0.67**	-0.68**	0.24	0.13
	Coll. Degree	(0.25)	(0.31)	(0.37)	(0.38)	(0.30)	(0.32)	(0.21)	(0.25)
Marital	Remained	-0.16	-0.18	-0.42***	-0.45***	0.10	0.04	0.27**	0.28*
Status	Married	(0.15)	(0.17)	(0.15)	(0.16)	(0.13)	(0.15)	(0.13)	(0.16)
*Reference:	Remained	-0.27	-0.38	-0.01	-0.04	-0.11	-0.25	-0.29	-0.29
Stay Single	Divorced	(0.26)	(0.31)	(0.23)	(0.25)	(0.23)	(0.28)	(0.26)	(0.30)
	Remained	-0.16	-0.21	-0.52**	-0.61**	0.50***	0.48**	-0.43*	-0.34
	Widowed	(0.22)	(0.27)	(0.23)	(0.26)	(0.18)	(0.21)	(0.24)	(0.27)
	Got	-0.25	-0.24	-0.55*	-0.66**	0.51**	0.53**	0.26	0.38
	Married	(0.27)	(0.32)	(0.31)	(0.34)	(0.20)	(0.23)	(0.21)	(0.24)
	Found a	-0.34	-0.46	-0.24	-0.31	-0.09	-0.18	0.35	0.56*
	Partner	(0.39)	(0.49)	(0.37)	(0.42)	(0.33)	(0.39)	(0.29)	(0.33)
	Got	0.50*	0.66**	0.11	0.02	-0.01	-0.03	-0.24	-0.22
	Divorced	(0.27)	(0.30)	(0.29)	(0.32)	(0.27)	(0.32)	(0.31)	(0.36)
	Was	0.28	0.16	0.08	0.03	-0.08	-0.08	-0.61	-0.50
	Widowed	(0.29)	(0.34)	(0.29)	(0.31)	(0.29)	(0.33)	(0.37)	(0.40)
Children	Had Child	-0.07	-0.30	-0.29	-0.15	-0.02	0.11	0.10	0.05
		(0.18)	(0.22)	(0.21)	(0.23)	(0.16)	(0.17)	(0.15)	(0.17)
	Lost Child	0.23	0.08	0.17	0.15	0.08	0.09	-0.01	0.15
		(0.23)	(0.28)	(0.25)	(0.27)	(0.20)	(0.24)	(0.25)	(0.27)
Health	Change	-0.32***	-0.36***	-0.06	0.00	0.32***	0.29***	0.26***	0.22***
	in Health	(0.07)	(0.09)	(0.08)	(0.08)	(0.06)	(0.08)	(0.07)	(0.08)
Living	Change in	-0.26*	-0.27*	0.12	0.02	0.25**	0.21	0.20*	0.27**
Space	Living Area	(0.13)	(0.16)	(0.14)	(0.15)	(0.11)	(0.13)	(0.12)	(0.13)
Income	Change in	0.02	-0.02	-0.16**	-0.20***	0.24***	0.23***	-0.04	-0.08
	Income	(0.07)	(0.08)	(0.07)	(0.08)	(0.05)	(0.06)	(0.06)	(0.07)
Occupation	Became	0.66***	0.21	0.87***	0.79***	-0.41	-0.29	-0.84***	-0.72**
*Reference:	Unemployed	(0.20)	(0.27)	(0.20)	(0.22)	(0.26)	(0.30)	(0.29)	(0.33)
Not	Remained	-0.13	-0.44	0.61**	0.57**	0.35	0.48*	-0.18	-0.02
Unemployed	Unemployed	(0.31)	(0.38)	(0.24)	(0.27)	(0.22)	(0.27)	(0.27)	(0.32)
	Ended	-0.29	-0.26	-0.16	-0.15	0.21	0.18	0.07	0.26
	Unemployment	(0.23)	(0.27)	(0.24)	(0.27)	(0.17)	(0.20)	(0.18)	(0.20)
*Reference:	Entered	1.28	1.50	0.90	1.16	0.78	2.14**	0.16	0.69
Non-Student	School	(1.11)	(1.27)	(1.11)	(1.17)	(0.87)	(1.08)	(1.11)	(1.27)
	Stayed in	0.23	-0.47	-0.34	0.03	-0.75**	-0.75*	0.34	0.62**
	School	(0.27)	(0.40)	(0.32)	(0.33)	(0.31)	(0.42)	(0.23)	(0.29)
	Left School	0.03	-0.41	-0.11	-0.02	-0.39*	-0.24	-0.05	0.03
		(0.23)	(0.30)	(0.24)	(0.26)	(0.23)	(0.27)	(0.21)	(0.26)
*Reference:	Retired	0.87***	0.71***	0.37	0.32	-0.19	-0.10	-0.27	-0.34
Not retired		(0.20)	(0.22)	(0.23)	(0.25)	(0.22)	(0.25)	(0.23)	(0.27)
	Stayed	-0.02	-0.19	0.11	0.01	0.01	0.13	-0.28*	-0.19
	Retired	(0.16)	(0.18)	(0.16)	(0.17)	(0.13)	(0.15)	(0.15)	(0.17)
	Came Out of	-0.48	-0.16	-1.40*	-1.96*	0.66**	0.80**	0.51	0.24
	Retirement	(0.50)	(0.55)	(0.75)	(1.04)	(0.31)	(0.35)	(0.34)	(0.43)
*Reference:	Became	0.84**	0.47	1.01**	0.96**	-0.74	-1.26	-0.90	-1.04

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Not disabled	Disabled	(0.38)	(0.46)	(0.41)	(0.45)	(0.54)	(0.77)	(0.61)	(0.76)
	Remained Disabled	0.06	0.11	-0.44	-1.00	-1.37	-0.88	-1.29	-0.81
		(0.61)	(0.76)	(0.73)	(1.03)	(1.02)	(1.03)	(1.02)	(1.03)
	Became Able To Work	-2.11**	-1.97*	-0.55	-0.54	0.29	-0.14	-0.25	-0.01
		(1.02)	(1.05)	(0.62)	(0.63)	(0.41)	(0.51)	(0.54)	(0.56)
*Reference: Remain Housewife	Became a Housewife	0.88***	0.67*	0.15	-0.14	0.06	0.18	-0.11	-0.20
		(0.30)	(0.37)	(0.41)	(0.48)	(0.28)	(0.33)	(0.30)	(0.36)
	Remained a Housewife	0.14	-0.10	0.57	0.28	-0.48	-0.56	-0.29	0.17
		(0.53)	(0.62)	(0.48)	(0.61)	(0.53)	(0.74)	(0.48)	(0.55)
	No Longer a Housewife	-0.50	-0.40	-0.07	-0.06	-0.31	-0.28	0.38	0.63**
		(0.40)	(0.44)	(0.37)	(0.39)	(0.36)	(0.38)	(0.28)	(0.29)
*Reference: Not Entrepreneur	Became Entrepreneur	-1.02	-1.47	-0.13	-0.12	-0.39	-0.44	0.28	0.27
		(0.72)	(1.01)	(0.52)	(0.60)	(0.40)	(0.44)	(0.32)	(0.34)
	Stayed Entrepreneur	-0.06	0.06	0.04	-0.03	-1.24*	-0.93	0.36	0.31
		(0.60)	(0.62)	(0.60)	(0.74)	(0.73)	(0.74)	(0.39)	(0.45)
	No Longer Entrepreneur	0.83**	1.06**	-0.24	-0.40	0.34	0.53	0.88**	1.17***
		(0.41)	(0.42)	(0.61)	(0.74)	(0.45)	(0.50)	(0.38)	(0.42)
Head of HH Status	Became Head of HH	0.09	0.16	0.14	0.22	-0.13	-0.17	-0.05	-0.13
		(0.19)	(0.23)	(0.19)	(0.21)	(0.17)	(0.21)	(0.18)	(0.22)
*Reference: Not Head of HH	Remained Head of HH	0.07	0.12	0.08	0.14	-0.06	-0.05	-0.13	-0.09
		(0.11)	(0.13)	(0.12)	(0.13)	(0.10)	(0.11)	(0.10)	(0.12)
	No Longer Head of HH	-0.11	0.02	0.03	0.12	-0.07	-0.04	-0.09	-0.08
		(0.27)	(0.30)	(0.28)	(0.29)	(0.23)	(0.25)	(0.25)	(0.28)
Savings Ratio	Change in Savings Ratio	-0.79**	-0.87*	0.28	0.56	0.09	-0.11	-0.02	-0.01
		(0.38)	(0.46)	(0.38)	(0.42)	(0.32)	(0.37)	(0.32)	(0.37)
Relative Income	Change in Econ. Rank		-0.20***		-0.11**		0.19***		0.17***
			(0.04)		(0.04)		(0.04)		(0.04)
Attitudes / Perceptions	Change in Power Rank		-0.07**		0.00		0.04		0.09***
			(0.04)		(0.04)		(0.03)		(0.03)
	Change in Respect Rank		-0.12***		-0.00		0.07***		0.04
			(0.03)		(0.03)		(0.03)		(0.03)
	Change in Feeling Valued		-0.22**		-0.62***		0.25***		-0.10
			(0.10)		(0.12)		(0.08)		(0.09)
Expenditure Ratios	Change in Luxury Ratio	-0.12		-0.20		0.31		-0.28	
		(0.32)		(0.34)		(0.27)		(0.27)	
	Change in Prosocial Ratio	0.05		-0.23*		0.10		-0.00	
		(0.19)		(0.13)		(0.17)		(0.16)	
	Observations	6,025	4,626	6,025	4,965	6,025	4,626	6,025	4,626
	Pseudo R^2	0.03	0.07	0.03	0.05	0.03	0.06	0.03	0.05

[a]Standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05

6. Conclusions

In order to evaluate the determinants of happiness, it is not enough to simply look at cross-sectional data. Individuals in various life stages are not random samples and select into those stages based on certain personality traits which we would find hard to control for at the cross sectional level. This makes causal interpretation very precarious. However, by looking at satisfaction changes as individuals move from one set of variables to another in panel data we can ascertain causal effects.

We evaluated the determinants of subjective well-being and its changes by taking advantage of detailed macroeconomic data provided by the Russia Monitoring Longitudinal Survey for the years 2004 and 2008. Under the assumption that reported subjective well-being is a latent function for the metaphysical concept of welfare, which is ordinally comparable among individuals, we used an ordinal logit model to estimate the effect of a large number of potential happiness determinants, including those which have gotten little attention in previous literature.

As a second step, we also evaluated the effects of changes in status variables and scale measures on changes in happiness by running four separate simple logit regressions with dummy outcomes. In particular, in addition to looking at the effects of income, perceived economic rank, and personal unemployment, as well as the usual demographic characteristics thought to influence welfare, we estimated the effect of living space and subjective attitudes on overall well-being.

We found that there was considerable variation in results depending on which factors were included and excluded. Real income per capita had a positive effect on happiness until we included a measure for a subjective perception of economic rank. We interpreted this subjective measure as an instrument for relative income. Consistent with that interpretation, we found that

relative income mattered at least as much as real income per capita in its influence on happiness. We found that our coefficients on age and age squared were significant and in concordance with previous findings, with a negative coefficient on age and a positive coefficient on age squared. Most importantly, we discovered that subjective attitudes that describe an individual's perceived power rank, respect rank and economic value in society, consistently show positive significant effects on happiness.

In contrast to Dunn (2008)'s findings, we did not find a significant relationship between spending on others and happiness. Unemployment tended to impact happiness negatively while being married had a positive affect even when we attempted to control for personality influences.

Our study confirms that the same determinants of happiness which influence the well-being of people in industrial countries are at play in determining Russian's life satisfaction. One of the strategies which we were unable to try in our analysis was a fixed effects ordinal logit model, because it does not form part of our statistical package. It would be useful to confirm our findings through the use of such a model.

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