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Authors
Zavisca, Jane
Hout, Michael

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University of California, Berkeley

Does Money Buy Happiness in Unhappy Russia?

*Jane Zavisca, Statistical and Applied Mathematical
Sciences Institute, and
Michael Hout, Sociology, University of California, Berkeley*

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Does Money Buy Happiness in Unhappy Russia?

Jane Zavisca, Statistical and Applied Mathematical Sciences Institute, and
Michael Hout, Sociology, University of California, Berkeley

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Abstract: Surveys rank Russians among the unhappiest people in the world. Contrary to popular accounts of a uniquely melancholic national character, the subjective wellbeing of Russians depends heavily on both individual and collective economic wellbeing. Individual differences in living standards account for much of the variation in happiness levels among Russians in cross-sectional survey data. These effects are particularly sharp when we expand our measure of economic status beyond income to incorporate household wealth. Individual changes in wealth, however, cannot explain the recent, dramatic improvement in the distribution of happiness in Russia. Based on panel analysis of longitudinal survey data, this shift should be attributed to the collective experience of recovery from the shock of the 1998 ruble crisis, rather than to individual economic trajectories.

"Happy families are all alike; every unhappy family is unhappy in its own way."
                                        – Leo Tolstoy, opening line of *Anna Karenina*

Tolstoy's famous dictum about families might apply to countries, especially to his native Russia. Indeed, surveys rank Russians among the unhappiest people in the world. This may reflect post-Soviet economic woes, or national gloom may be a permanent part of the Russian condition. The idea of a uniquely melancholic Russian national character has a long history and remains powerful today (McDaniel 1996).[1] Russians commonly portray their nation as more soulful and less materialistic than others.

The spirits of soulful Russians are not immune to the ups and downs of the economy, according to our analysis. In recent years at least, personal living standards have been strongly associated with subjective wellbeing, even after controlling for other influences such as age, education, marital status, and religiosity. Household income has moderate effects familiar to analysts who have examined happiness in other countries. Our more comprehensive approach to living standards takes account of household possessions and housing quality and yields stronger results. Our study contributes to the sociology of wealth by showing that assets matter for an important social outcome – the distribution of happiness.

However, individual gains in living standards do not explain the dramatic upward shift in the aggregate distribution of happiness in Russia that accompanied economic recovery from the 1998 ruble collapse. National wealth and income affect happiness too. Economic collapse in the early 1990s, and then again in the late 1990s, left Russians at all economic levels feeling worse then they had in 1991. Improvements in Russia's

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[1] In our own qualitative research in Russia, we found the idea of a melancholic national character to be a common trope in life history interviews with Russians with a variety of economic circumstances.

economy since 1998 have improved all Russians' chances for happiness, regardless of their individual economic trajectories. The nation's morale has political implications. We find that happier people are more likely to support capitalist transition. Taken together, our evidence implies that improving living standards for the poor, and maintaining recent gains for others, would not only lead to a happier population, but also enhance political stability in Russia.

THE STATE OF KNOWLEDGE: NATIONS, INCOMES, AND HAPPINESS

Ruut Veenhoven, a leading researcher on subjective wellbeing, defines happiness as "…the degree to which a person evaluates the overall quality of his present life-as-a-whole positively. In other words, how much the person likes the life he/she leads" (1997). A large body of survey research asks people to rate how happy they are, or how satisfied they are with their lives in various domains. We prefer the "life satisfaction" formulation, especially because "happy" translates poorly into Russian (Di Tella et al. 2003: 5; Saris and Andreenkova 2001: 107).[2]

The World Values Survey and World Bank living standards monitoring surveys ask respondents to rate how satisfied they are with their lives in general. Table 1 lists average life satisfaction levels (standardized to a scale of 0 to 10) for selected countries.[3]

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[2] The Russian word for happy that is used in international comparative surveys, *chastlivo*, has connotations of luckiness. For example, the Russian version of the "Who Wants to Be a Millionaire" gameshow is called "O Chastlivchik!", i.e. "Oh Lucky Person!" Satisfaction with life in general translates more directly as *udovletvorenie zhizn'iu v tselom*. For convenience sake, we use the words happy and satisfied interchangeably to indicate subjective wellbeing, but the survey responses we analyze are limited to questions on satisfaction.

[3] Data are drawn from the World Database of Happiness, http://www.eur.nl/fsw/research/happiness/.

Table 1: Mean Life Satisfaction for Selected Countries

Country	Mean	SD	Country	Mean	SD
Austria 02	8.4	1.4	France 00	6.2	1.9
Denmark 02	8.2	1.5	India 96	6.2	2.9
Ghana 95	7.7	2.3	Czech Rep. 02	6.1	1.9
Brazil 00	7.7	1.3	Japan 94	5.6	2.1
Netherlands 01	7.5	1.8	Portugal 02	5.6	1.9
Mexico 00	7.5	1.8	Peru 00	5.5	1.9
USA 95	7.4	2.1	Greece 00	5.4	2.1
Sweden 02	7.4	1.7	South Africa 96	5.1	3.1
El Salvador	6.8	2.0	Latvia	5.1	2.2
Chile 2000	6.7	1.9	Turkey 02	5.0	2.6
Belgium 02	6.5	1.7	Georgia 97	4.1	2.9
Phillipines 96	6.5	2.6	Bulgaria 02	4.0	2.3
China 95	6.5	2.7	**Russia 01**	**3.8**	**2.7**
Nigeria 95	6.5	3.0	Armenia 97	3.7	2.6

Russia and its former territories are exceptional, being the only countries with average satisfaction levels below 5.

Our primary goal is to explain differences among people and over time within Russia, rather than to make cross-national comparisons. But Russia's (un)happiness is interesting, in part, because it stands out as one of the world's gloomiest nations. Add to that Russia's size, global importance, and dramatic economic transformation, and you have a compelling case for considering it.

Does Money Explain Why Russia Is Such An Unhappy Country?

Russians may report being less dissatisfied with their lives than people in other countries do because: 1) the question means something else in Russia, 2) the Russian national character is gloomy, 3) their poverty is good cause for dissatisfaction, or 4) the shock of recent economic and political transformations.

First, we must consider the possibility that Russian survey responses are not comparable with other nations. Perhaps Russians understate satisfaction so as not to appear to be boasting, or to fulfill cultural stereotypes that negativity indicates depth of soul (the opposite may be true in the US, where people try to "put on a happy face"). Yet social psychologists have extensively tested the validity of satisfaction measures across cultures, and find no evidence that cultural tendencies toward humility produce cross-national differences in responses (Diener and Oishi forthcoming).

Similarly, perhaps Russians do not think about their lives in terms of "how satisfied" they are, or they may understand the question exclusively with reference to living standards, such that survey responses do not measure general states of subjective wellbeing. Others have conducted validity tests on Russians' answers to satisfaction

questions. They conclude from high response rates and differences in reported satisfaction in various domains of life that Russians understand the questions quite well, and are willing to answer them (Saris and Andreenkova 2001; Veenhoven 2001).

Maybe Russian culture really produces gloomy people – this is the culturalist analog to the argument made by some psychologists that personality explains most of the variation in happiness.[4] It is difficult to measure national character and compare it across nations. We can get some leverage by comparing Russia with itself over time. If Russians are inherently pessimistic, satisfaction levels should not be strongly affected by the state of the Russian economy, since people will be unhappy no matter what. However, this is far from the case, as we shall see. National character cannot be an adequate explanation if Russian morale falls and rebounds over time.

Third, Russians may be so unhappy because their country is so poor. GDP is strongly associated with average happiness levels of nations (Christoph and Noll 2003; Di Tella et al. 2003; Diener and Biswas-Diener 2002; Hagerty and Veenhoven 2003; Schyns 2002). Most of the literature also finds diminishing returns: rich countries are on average happier than poor ones, but relatively small differences in GDP have an appreciable effect on happiness levels in poorer countries (Easterlin 1974; Hagerty and Veenhoven 2003: 14; Oswald 1997).

Figure 1 plots average satisfaction with life against gross domestic product (standardized to per capita purchasing power parity) for various countries. At first glance, the poverty hypothesis seems reasonable: people in more affluent countries report

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[4] One study, for example, justifies concentrating on variation between rather than within countries by asserting that personality explains most differences between individuals (Heylighen and Bernheim 2000).

higher levels of satisfaction with life, and the former Soviet territories are both poor and

unhappy.   Yet many countries, including Ghana, India, and Nicaragua, are substantially

worse off than Russia, but people report being more satisfied. Brazil has a similar GDP

to Russia, but its population is among the happiest in the world.

The dashed line in Figure 1 plots the best-fitting version of the diminishing

returns model (based on regressing the natural logarithm of GDP on satisfaction): the line

grows rather steeply at first, and then nearly levels off once GDP exceeds $15,000 per

capita. The solid line fits the data without priori assumptions about the shape of the

national income-happiness relationship. Free to follow the data, the solid line shows

steady, relatively small gains in satisfaction as GDP rises up to about $20000 per capita,

and then – contrary to theory – not only continues rising but rises more sharply. The

second result casts doubt on the diminishing returns argument. The nonparametric fit

confirms that GDP poorly explains variation in happiness among these relatively poor

countries in general, and Russia's very low score in particular.[5] Note that if we were to

exclude the former Soviet territories from the plot, the nonparametric line would be even

flatter for relatively poor countries.

A fourth possible explanation for Russian dissatisfaction is economic "shock."

Russians have lived through tremendous changes since the collapse of the Soviet Union,

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[5] GDP crudely measures national wealth and says nothing about distribution of wealth. The emerging

literature on inequality and happiness shows that increased inequality can depress everyone's chances for

happiness (Blanchflower and Oswald 2004). Russia is indeed very unequal – but then so are the much

happier countries of the United States and Ghana. Furthermore, GDP's association with happiness may not

be due to a direct effect of national income, but because high-GDP nations tend to be more democratic and
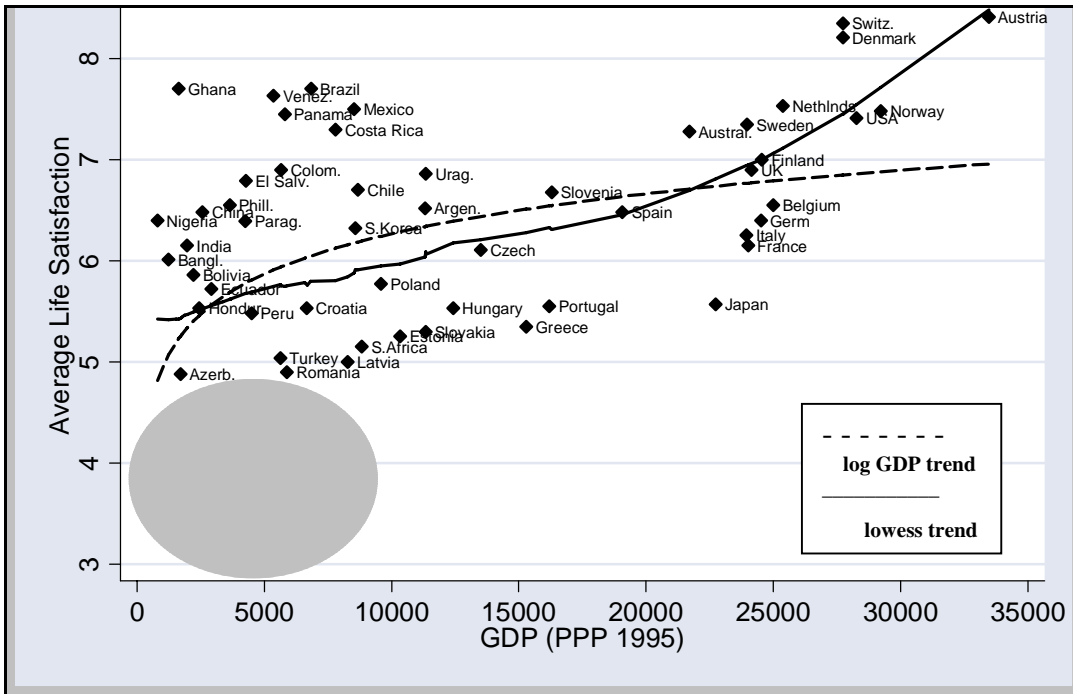
individualistic (Frey and Stutzer 2000).

Figure 1. Average Life Satisfaction by Per Capita GDP
Data Sources: World Database of Happiness,
World Bank World Development Indicators

and many have become poorer in the past decade. Even those who are doing relatively well have little sense of long-term security. The instability that causes income fluctuations may be more important than absolute levels of individual or national income per se for determining both individual and aggregate happiness levels (Diener and Oishi forthcoming; Veenhoven 2001).

Several theories describe happiness and satisfaction as a balance between expectations and reality. Russians expected the end of communism to improve their lives; shock therapy made them worse. Expectations went up and reality went down. The gap sent morality way down. Support for expectations theory comes from the U.S., where people were no happier in the 1990s than in the 1950s despite growing GDP per capita because people's expectations in the 1990s were higher (Easterlin 1996).

Happiness dynamics in the more prosperous post-socialist societies of East Germany and Hungary further support the shock hypothesis. In both countries, even though living standards improved rapidly, aspirations outpaced reality because many people expected Western living standards. In the early years of transition, satisfaction declined even as income grew – once greater stability set in and expectations modulated, satisfaction levels steadily improved (Headey and Headey 2003; Lelkes 2002b). By contrast, positive shocks such as the end of apartheid in South Africa and EU accession in Europe led to an immediate upswing in aggregate well-being, followed by decline when initial euphoria dissipates and expectations are not met (Delhey 2001; Harris 1997).

If economic shock is driving satisfaction levels in Russia, what trends would we expect over time? Happiness levels should be the lowest right after the major shocks of the 1991 collapse of the Soviet Union and the 1998 ruble collapse, and improve steadily
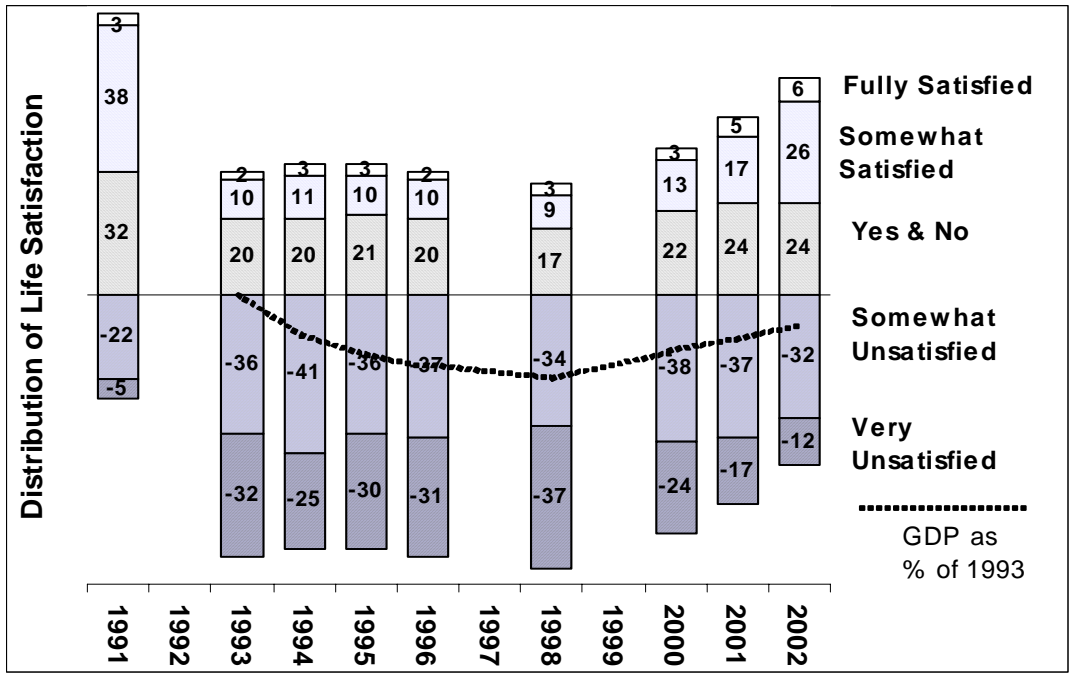
Figure 2. Trends in Life Satisfaction and GDP in Russia
Sources: 1991=GSS-USSR; 1992-2002=RLMS

during the more stable periods after these shocks.   Figure 2 graphs the distribution of satisfaction levels from 1991 to 2002.

In 1991, satisfaction levels were considerably higher than in any later year. At that time, even though food shortages were intense and Eastern European satellites had broken away, few imagined that the Soviet government was about to collapse. By 1993, we see a precipitous drop in happiness – the percentage of very and somewhat unsatisfied people more than doubled from 27% to 68%. From 1993 to 1997, GDP steadily declined, as did satisfaction levels (slightly). In the wake of the 1998 ruble devaluation, the percentage of somewhat or very unsatisfied respondents reached a high of 71%, and more were very unsatisfied than ever – 37%. As the economy rebounded, happiness levels quickly recovered and by 2000 were already higher than at any point since 1993. By 2002, although GDP had still not quite recovered to its 1993 level, less than half of the population reported being very or somewhat unsatisfied for the first time since 1991, and only 12% were very unsatisfied.

These trends support the shock hypothesis – satisfaction levels track the direction of GDP, but the rate of change is associated more with proximity to destabilizing events than with GDP per se. Economic recovery after a destabilizing event such as the 1998 ruble collapse appears to have had a disproportionately positive effect on societal happiness. If economic recovery stagnates or slows, some of the post-1998 bounce may be short-lived, and happiness levels might decline.

Does Money Explain Who Is More or Less Happy Within Russia in Any Given Year?

Not everyone in Russia is equally unhappy, and some even claim to be quite satisfied. The poverty among nations hypothesis has an analog among individuals – rich

people are happier than poor people within any given nation. In other words, money does buy happiness. Many studies find that the relationship between income and happiness is even stronger in poor countries than in rich ones. Thus, we would expect to find the following in Russia. ***H1A:*** *Other things being equal, individual life satisfaction rises with household income.*

The effect of income on happiness is probably not linear, however. Increases affect poor people's happiness the most, with diminishing returns to higher and higher levels of income once basic needs are met (Ahuvia 2002; Diener and Biswas-Diener 2002; Frey and Stutzer 2000; Heylighen and Bernheim 2000: 331-332). ***H1B****: The effect of income on life satisfaction is log-linear, with the greatest returns to a unit increase observed at low levels of income, and little effect at high income levels.*

Recent improvements in income may matter more for current happiness than actual income level. Two people may have the same income now, but the one who attained it most recently may be happier due to the recent experience of upward mobility. Adaptation theory posits that short-term gains in happiness driven by economic mobility dissipate with time as the current living standard comes to be perceived as normal rather than improved (Diener and Biswas-Diener 2002). ***H1C: Change in income has an independent effect on life satisfaction, holding current economic wellbeing constant.*

Income is an important but inadequate measure of economic wellbeing in Russia. First, income in developing countries is often underreported and seasonally fluctuates; consumption measures are therefore a more reliable indicator of economic wellbeing (Bookwalter and Dalenberg 2004; Deaton and Grosh 2000). Second, even if income is adequately measured, money income is not the only source of economic value,

particularly in an economy where many assets are inherited or received in kind. We may need a broader conception of economic resources than income to test the spirit of the old adage "money doesn't buy happiness." **H2**: *Household wealth enhances life satisfaction, independently of income.*

Alternatively, perhaps neither monetary nor non-monetary wealth buy happiness. Studies of developed capitalist economies find only a weak association between income and happiness (see Frey & Stutzer 2002 for a review). A few studies posit that countervailing suppressor variables mask a true and strong relationship (Hellevik 2003; Saris 2001). Still, most scholars conclude that money does not buy very much happiness, although it does so more in poor nations than rich ones (Diener and Biswas-Diener 2002; Frey and Stutzer 2000). In a study of subjective wellbeing in Russia, Ravallion & Loshkin concede the point that money does not buy happiness per se, without testing it. They explain why they limit their analysis to satisfaction with *income*, rather than satisfaction with life in general, as follows: "We focus on the more narrow concept in the expectation that it will offer sharper results on the welfare effects of economic variables: yes, 'money does not buy you happiness', but surely it makes you think you are less poor?" (Ravallion and Lokshin 2001: 337).[6] **H3**: *Income, housing, and durable possessions have little effect on life satisfaction.*

Finally, economic wellbeing, whether of the individual or the society, is of course not the only determinant of subjective wellbeing. By controlling for the most common

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[6] Another study of satisfaction in Russia subordinates the question of life satisfaction per se to the relationship between income satisfaction and life satisfaction (Schyns 2001). Our study is distinct from both of these studies in our focus on life satisfaction, and in our analysis of much more recent data (Schyns studies the period 1993-1995; Ravallion and Lokshin take up the period 1994-1996).

non-economic influences on happiness identified in the literature, we both improve the models' estimates of economic effects, and also indirectly test the validity of satisfaction questions as measures of happiness in Russia. If we find a similar relationship in Russia between happiness and, for example, age, marital status, and religiosity as has consistently been found elsewhere, we can have further confidence in the cross-cultural comparability of statistics on satisfaction. Thus, we pose the following set of subsidiary hypotheses based on findings in other countries. Other things being equal:

H4A*: Unemployed people are less happy than people who are employed or not in the labor force* (Blanchflower and Oswald 1998; Blanchflower and Oswald 2000; Frey and Stutzer 2000).

H4B*: Higher education is associated with greater happiness* (Blanchflower and Oswald 2000).

H4C*: Married people are happier than unmarried, divorced, or widowed people* (Blanchflower and Oswald 2000; Di Tella et al. 2003; Diener and Oishi forthcoming).

H4D*: People who believe in God are happier than those who do not* (Ferriss 2002; Kim 2003; Lelkes 2002b).

H4E*: Healthy people are happier than unhealthy people* (Frey and Stutzer 2001).

H4F*: Women are slightly happier than men* (Frey and Stutzer 2001).

H4G*: Increasing age slightly decreases happiness; happiness then begins to increase again with old age* (Di Tella et al. 2003).[7]

H4H*: Ethnically dominant groups are happier than ethnic minorities or subjugated groups* (Blanchflower and Oswald 2000; Frey and Stutzer 2000; Harris 1997).

Two additional controlling hypotheses are specific to the Russian case. First, large cities, particularly Moscow, had greater economic opportunities and greater stability during crises, which should make its residents more satisfied on average than others.

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[7] In post-socialist societies, there are especially strong returns to being young, since young people are better positioned to adapt psychologically as well as economically (Lelkes 2002a: 6).

H4I: *Residents of Moscow are happier than residents of other large cities, who are happier than others.*

Second, we expect entrepreneurs to be more likely to report being satisfied – Lelkes found this to be true in Hungary (2002a; 2002b). They are better positioned to gain from capitalist transition, and there is a greater normative tendency to optimism among entrepreneurs.[8]

H4J*: Entrepreneurs and managers are happier than others.*

Does Money Explain Changes in Individual and Aggregate Happiness Levels Over Time?

The previous hypotheses concern differences between individuals at a single point in time. Longitudinal data allow us to test hypotheses about the effects of *changes* in individual and macro-level economic conditions on the distribution of life satisfaction. First, we expect that upward economic mobility would increase someone's chances of being happier. Conversely, downward mobility could depress people relative to their earlier sense of wellbeing. ***H5****: Changes in life satisfaction vary with changes in living standards.* Note this differs from Hypothesis 1C in that here the dependent variable is the change in life satisfaction between time 2 and time 1, rather than life satisfaction at any given time.

Next, we examine to what extent changes in living standards account for the observed improvement in average happiness levels in recent years. ***H6A****: Improvements in aggregate happiness levels over time are entirely the result of individual improvements*

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[8] As a rhetoric scholar and a market researcher both told us, and as we have observed ourselves, if you ask an average Russian "how are you," the response will likely be "Okay" (*normal'no*), while entrepreneurs and managers in private firms usually say "Very good! Excellent!" (*Ochen' khorosho! Otlychno!*).

in living standards. If **H6A** is true, we can interpret this as evidence against the "shock" hypothesis that macro-level (un)certainty, rather than income per se, drives happiness. Alternatively, economic growth and reduced inflation since the 1998 currency collapse may have benefited everyone psychologically, independently of effects on economic wellbeing.[9] The shock hypothesis would remain plausible if we find the following.

H6B: *Individual improvements in economic resources do not fully explain aggregate improvements in life satisfaction.*

DATA

Data is drawn from the 2001 and 2002 waves of the Russian Longitudinal Monitoring Survey, a nationally representative survey of households modeled on the World Bank living standards surveys for developing countries. We restrict analysis to these two waves both to simplify the models of change, and because the Moscow and St. Petersburg samples were replaced in 2001 due to high attrition rates.[10] There was significant mobility of both life satisfaction and income over this one year period, which permits analysis of change over time using just these two waves. Real incomes rose at least 20% for half of respondents, and fell at least 20% for one-quarter of respondents. Likewise, over one-third of respondents reported higher life satisfaction levels in 2002 than in 2001, while one-fifth reported lower levels.

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[9] The inflation caused by the ruble collapse not only reduced real incomes, but created inflationary uncertainty, which makes people less happy (Di Tella et al. 2003) (Graham and Pettinato 2001). Economic growth since 1998 has been accompanied by reduced inflation and greater predictability of prices and behavior of banks and government, all of which enhance subjective evaluations of stability.

[10] In future analysis, we plan to fit latent curve models to longer term trends in the panel.

The cross-sectional samples include 7253 adults age 18 and older in 2001, and 7236 in 2002.[11] 6214 cases were interviewed in both 2001 and 2002 (a retention rate of 86%). 710 cases were dropped due to missing data on key variables, for a final sample size of 5504.[12] All analyses reported here use only cases with valid data in both years. Table 2 provides descriptive statistics for the cross-sectional and longitudinal samples. The marginal distributions of variables do not differ notably, with the exception of under-representation in the longitudinal sample of Moscow/St. Petersburg residents, who are more likely to move and more difficult to follow. Because all adults in each sampled household are interviewed, observations are not independent. Robust standard errors are reported in all analyses to control for clustering, and appropriate weights are used.

The key dependent variable comes from the following question: "To what extent are you satisfied with your life in general at the present time?"[13] Response options include: "fully satisfied, rather satisfied, both yes and no, less than satisfied, not at all satisfied." Due to the small percentage of fully satisfied responses, we combine the fully

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[11] Representative cross-sections are drawn in every wave, since the sample frame for RLMS is addresses, not households or individuals. The same locations are visited each year, although households who have moved out of the sample are followed when possible to facilitate longitudinal analysis.

[12] Most cases were dropped due to missing data on income (350 cases in 2001, 289 cases in 2002), ethnicity (60 cases in 2001, 65 cases in 2002), or religious belief (94 cases in 2001, 68 cases in 2002).

[13] In Russian: «Насколько Вы удовлетворены сеоей жизнью в целом в настоящее время? Полностью удовлетворены;скорее удовлетворены; и да, и нет; не очень удовлетворены, совсем не удовлетворены.»

Table 2: Descriptive Statistics for Cross-sectional and Panel Samples

	2001		2002	
Variables	**Cross-section**	**Panel**	**Cross-section**	**Panel**
Life Satisfaction				
Rather/Very	21	21	32	31
Yes & no	24	23	24	24
Less than	37	37	32	33
Not at all	18	18	12	12
Household Income (Real)[a]	3129 (2348)	3035 (2315)	3466 (2667)	3382 (2632)
Good Scale (Age Adjusted)	3 (3)	3 (3)	3.2 (3)	3.1 (3)
Age	45 (43)	45 (44)	45 (44)	46 (45)
Housing Quality				
Good	7	6	8	8
Average	37	37	36	36
Poor	56	57	56	56
Region				
Moscow/St. Petersburg	11	9	13	9
Other Urban	57	57	55	57
Rural	32	34	32	34
Education				
Higher	18	18	19	19
Technical	29	29	29	29
Middle	35	34	34	34
Lower	18	18	18	18
Employment Status				
Unemployed	10	10	11	9
Employed	54	54	54	55
Not in Labor Force	36	36	35	36
Entrepreneur/Manager	4	4	4	4
Male	44	43	44	43
Married	65	66	64	66
Russian Ethnicity	84	84	84	84
Religious	73	73	74	74
Healthy	57	56	58	57
Valid N	6640	5504	6686	5504
N dropped due to nonresponse	613	710	550	710

[a] Mean(Median) is reported for continuous variables

Note: Statistics are based on weighted samples (for each year for cross-sections, and for 2001 for panel).

and rather satisfied categories, and drop cases with don't know or refusal responses (fewer than 1 percent in each year).

The first group of independent variables concerns **household economic status.** Total monthly *household income* represents the money resources of a respondent's household. We adjust household income for household size using an equivalency scale of .75. [14] A scale of *durable possessions* provides a proxy for the household's longer-term purchasing power. Finally, *housing* (categorized into poor, average, and good quality) represents the most important form of household wealth in post-Soviet Russia, since ownership rights were transferred to current occupants in 1992.

Next is a set of **demographic controls.** *Gender, age,* and *household size* are standard controls. *Region* distinguishes residents of the central cities of Moscow and St. Petersburg, other urban residents, and rural residents. *Russian* indicates whether the respondent identifies as ethnically Russian.

Finally, we test the effect of a variety of **social characteristics** on life satisfaction. *Employment status* is a three category variable distinguishing unemployed, employed and not-in-labor-force. Dichotomous variables distinguish *married* people, *religious* people, *healthy* people, *entrepreneurs/managers,* and people with a *higher education*.[15] Further details on variable construction are provided in the appendix.

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[14] Equivalency scales adjust income for economies of scale in larger households. The square root of household size (hhsize$^{.5}$) is a standard equivalency scale for developed capitalist economies. In the Russian case we employ the equivalency scale (hhsize$^{.75}$) to reflect smaller economies of scale resulting from relatively low household expenditures on housing and energy (World Bank 2000: 370).

[15] We also tried a more finely grained categorization of educational attainment based on 4 categories of having a higher education, postsecondary technical education, secondary education, or no high school

FINDINGS

Cross-Sectional Analysis: The Determinants of Life Satisfaction in 2002

We fit a series of ordered logistic regressions to test hypotheses **H1-H4** in 2002. The model predicts the odds of falling into a higher category versus a lower category of the dependent variable. An ordered logit model recognizes the ranking of categories, but does not assume equal distance between the categories. It does assume constant odds ratios for all categories, i.e. the odds of giving a higher versus lower response are independent of where we draw the line between higher and lower (Long and Freese 2001).

As a first step, the functional form of income is defined based on the fit of a simple bivariate ordered logistic regression of adjusted household income on life satisfaction.[16] Figure 3 plots the observed *cumulative* probabilities of life satisfaction at various levels of income.[17] An ordered logit of the log of income on satisfaction fits the

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degree. These distinctions did not enhance the effect of education in our models, so we reverted to the simpler classification.

[16] We also considered models that do not adjust income for household size, but rather enter household size as a separate variable, since some studies find that household size influences happiness even after controlling for income. The following test can be used to decide whether to use adjusted or unadjusted income. If adjusted income is the causal factor in the relationship between money and morale, then log-unadjusted income and log-equivalent household size "should have coefficients that are equal in absolute value but opposite in sign in regressions of morale on income and family size." This is indeed the case for these data in both simple and complex models; therefore the income variable used in all models is adjusted for household size, and household size is not entered as a separate variable.

[17] Income was divided into 250 ruble categories for probability calculations (larger income categories were used at ranges greater than 6000 rubles, due to sparse data. The plot should be read as follows: a household

data quite well.[18] The relationship between income and life satisfaction is both positive

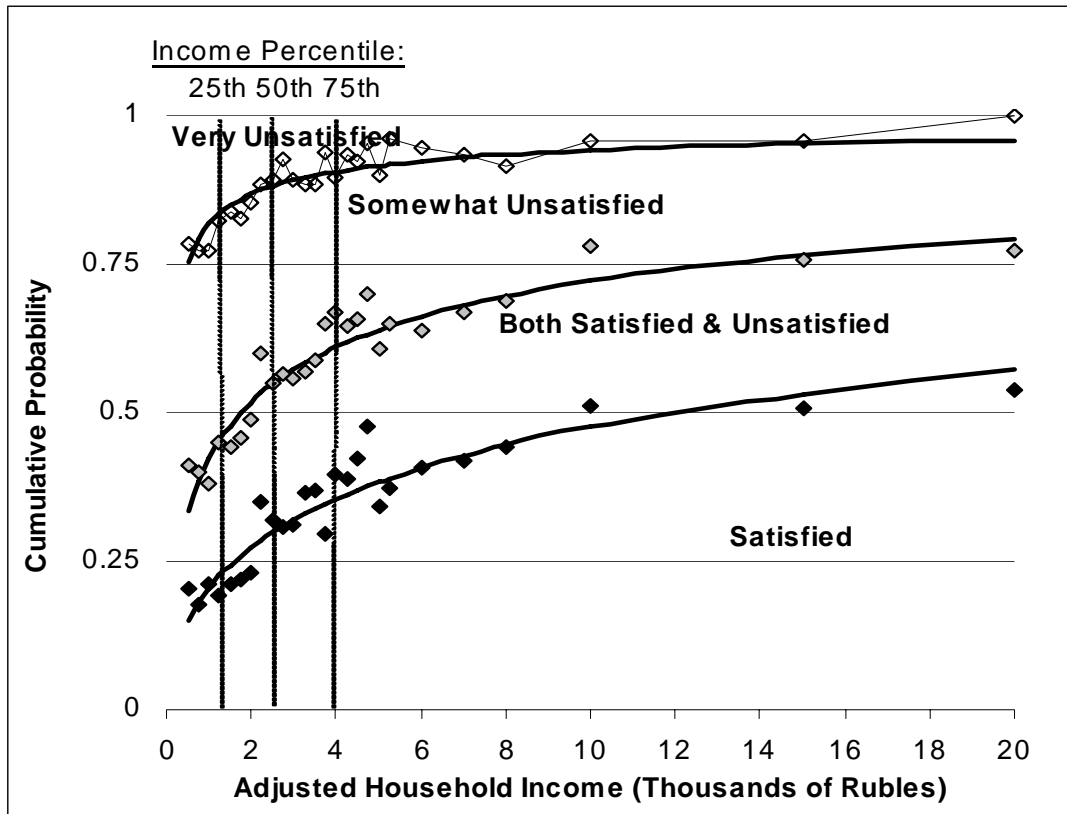and diminishing, lending support to *H1A* and *H1B*.

Model 1 in Table 3 presents the statistical model that is graphically depicted in

Figure 3. The reported (exponentiated) coefficients indicate the estimated multiplicative

effect of income on the odds of being more rather than less satisfied (i.e. of transitioning

to a higher category). The odds of being more satisfied are an estimated 1.78 times

higher for each one unit-increase in the log of income.

Model 2 adds two non-monetary measures of household economic status: a scale

of durable possessions, and a categorical measure of housing quality. Both are correlated

with income, but far from perfectly.[19] Including possessions and housing quality in the

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with an income of 500 rubles has only about a .2 probability of being rather/fully satisfied with their lives,

and a .23 probability (1-.78) of being fully unsatisfied. At a household income of 6000 rubles, the

probability of being satisfied is about .4, while the probability of being ambivalent (both satisfied and

unsatisfied) is .25 (.65-.4, or the distance between the first and second line).

[18] Income was bottom-coded at 500 rubles and top-coded at 20,000 rubles to remove outliers. If the income

distribution is truncated in this manner, there is minimal difference between the fit of a standard ordered

logit and a generalized ordered logit, such that the proportional odds assumption of a standard ordered logit

is reasonable. More complex models were also re-run as generalized ordered logit. Although there were

some statistically significant differences between the two model forms, all were mathematically modest and

substantively uninteresting. The standard ordered logit is easier to interpret and present, so only those

results are reported here.

[19] The correlation coefficient between income and possessions is .32. Low income is a quite good predictor

of poor housing (68 percent among the lowest income decile); but a high income is no guarantee of even

average housing (nearly half of the top decile lives in poor housing, and only 12 percent in good housing).

Income Percentile:
25th 50th 75th

Very Unsatisfied

Somewhat Unsatisfied

Both Satisfied & Unsatisfied

Satisfied

Cumulative Probability

Adjusted Household Income (Thousands of Rubles)

Figure 3: Observed and Predicted Life Satisfaction by Income, 2002 (Simple Ordered Logit)

model shows that about one-third of the effect usually attributed to income is better thought of as a wealth effect. In Model 2, possessions have a statistically significant effect, but housing does not. Housing's effect strengthens in the more complex Model 3, which includes a variety of other controls.

Model 3 verifies that the effects of income, possessions, and housing are not spurious or overstated due to correlations with other factors known to influence well-being. Because the independent variables are measured on different scales, we need to standardize effects to compare them. The standardized effects of household income and durable possessions are identical: a standard deviation increase in either variable is associated with a 32 percent increase in the odds of being more satisfied. Turning to housing, living in average versus poor quality housing increases the odds of being more satisfied by 15 percent, while living in good housing has twice the effect of average housing on the chances for life satisfaction – a 30 percent improvement in the odds (although the difference in the size of the effects of average vs. good housing is not statistically significant).

Based on these results, Hypotheses *H1A, H1B,* and *H2* (that money and non-monetary wealth buy happiness) are accepted, and Hypothesis *H3* (that money and wealth do not buy happiness) is rejected. Most of the effects for control variables go in the expected direction, confirming the *H4* series of hypotheses. Being employed or out of the labor force (as opposed to being unemployed), being married, religious, and healthy all positively influence subjective wellbeing (in order of importance). Older age (up to about age 55, at which point the trend reverses) by contrast decreases the odds of

Table 3: Multiplicative Change in Odds of Greater Life Satisfaction, 2002
(for one unit change in X)

	Model 1		Model 2		Model 3		Model 4	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Household Income (Log)	1.78	1.63,1.94 **	1.52	(1.39,1.66) **	1.48	(1.35,1.62) **	1.56	(1.40,1.74) **
# Durable Possessions			1.26	(1.21,1.32) **	1.21	(1.15,1.27) **	1.2	(.81,1.15) **
Housing Quality (Poor)								
Average			1.06	(.93,1.20)	1.15	(1.001,1.32) *	1.15	(.76,.99) *
Good			1.08	(.87,1.33)	1.3	(1.04,1.64) *	1.3	(1.03,1.63) *
Male					1.23	(1.11,1.35) **	1.22	(1.11,1.35) **
Age					0.91	(.90,.93) **	0.91	(.90,.93) **
Age sq					1.001	(1.0007,1.001) **	1.001	(1.0007,1.001) **
Russian					0.74	(.62,.88) **	0.74	(.62,.88) **
Married					1.52	(1.33,1.72) **	1.51	(1.33,1.71) **
Higher Education					1.14	(.99,1.31)	1.13	(.98,1.3)
Entrpreneur/Manager					1.2	(.93,1.55)	1.19	(.92,1.53)
Employment Status (Unemp.)								
Employed					1.61	(1.31,1.98) **	1.6	(1.30,1.96) **
Not in Labor Force					1.76	(1.41,2.21) **	1.75	(1.39,2.18) **
Religious					1.29	(1.14,1.46) **	1.3	(1.14,1.47) **
Healthy					1.44	(1.28,1.61) **	1.44	(1.29,1.61) **
Region (Rural)								
Moscow					1.1	(.85,1.42)	1.09	(.84,1.40)
Other Urban					0.99	(.86,1.14)	0.99	(.85,1.13)
Log [(2002 Income)/(2001 Income)]								
If 2002 Income > 2001 Income							0.87	0.06 *
If 2002 Income <= 2001 Income							0.96	0.09
% Reduction LL (McFadden's R2)	1.9		3.0		4.5		4.5	
BIC	-267		-401		-552		-546	

* p< .05; ** p < .01

[a] % change in odds reported for S.D. change in continuous variables, and unit change for categorical variables.

being satisfied. Higher education, region of residence, and entrepreneurial or managerial employment do not have statistically significant effects. Contrary to findings in other countries, men are more likely to be satisfied in Russia, while being an ethnic Russian depresses rather than enhances the odds of life satisfaction.

Note that model coefficients refer to effects on odds ratios, not probabilities. We cannot infer probabilities from Table 3 because the effect of a unit change in X on Y depends on the initial value of X in a non-linear model like the ordered logit. We can, however, calculate and compare probabilities at specific values of independent variables. Figures 4–7 show the estimated effects of living standards on the subjective well-being of an "average" Russian: a 40-year-old, married woman of Russian ethnicity who has no major health problems, does not have a higher education, is employed but not as a manager or entrepreneur, believes in God, has a median income, an average number of possessions, and average housing.

Figure 4 presents the probability distributions for life satisfaction at several income levels (the 5th, 20th, 40th, 60th, 80th, and 95th percentiles). We see a steady improvement at higher incomes. Each transition to a higher income quintile modestly shifts the probability distribution about 3 percentage points in favor of greater satisfaction. This cumulates to substantial differences – for example, this hypothetical average person has a 48 percent chance of being less than or not at all satisfied if she has 1500 rubles a month (the 20th percentile), but that drops to 38 percent if she has 4500 rubles a month (the 80th percentile). Figures 6 and 7 provide similar figures for durable possessions and housing quality, assuming the respondent has the median household
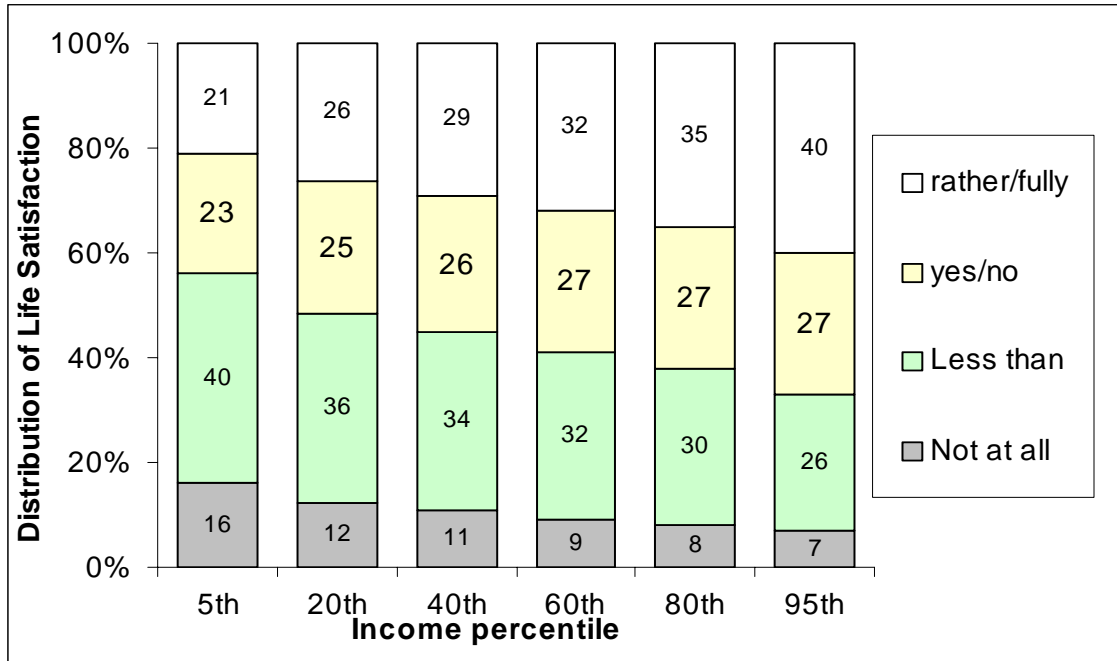
Figure 4: Predicted Satisfaction by Household Income, 2002

Note: X values held at 40-year-old, healthy, married, Russian, urban, female, no higher education, employed, non-manager, religious believer, average housing with 3 durable possessions.
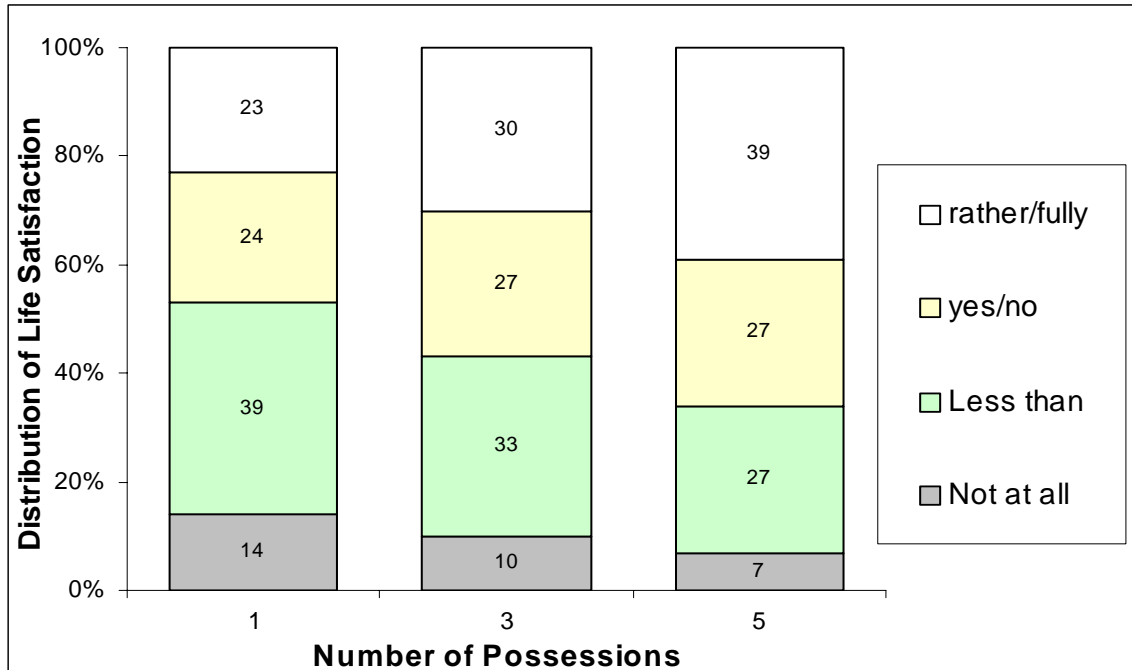
Figure 5: Predicted Satisfaction by Number of Possessions, 2002

Note: X values held at 40-year-old, healthy, married, Russian, urban, female, no higher education, employed, non-manager, religious believer, average housing with median income.
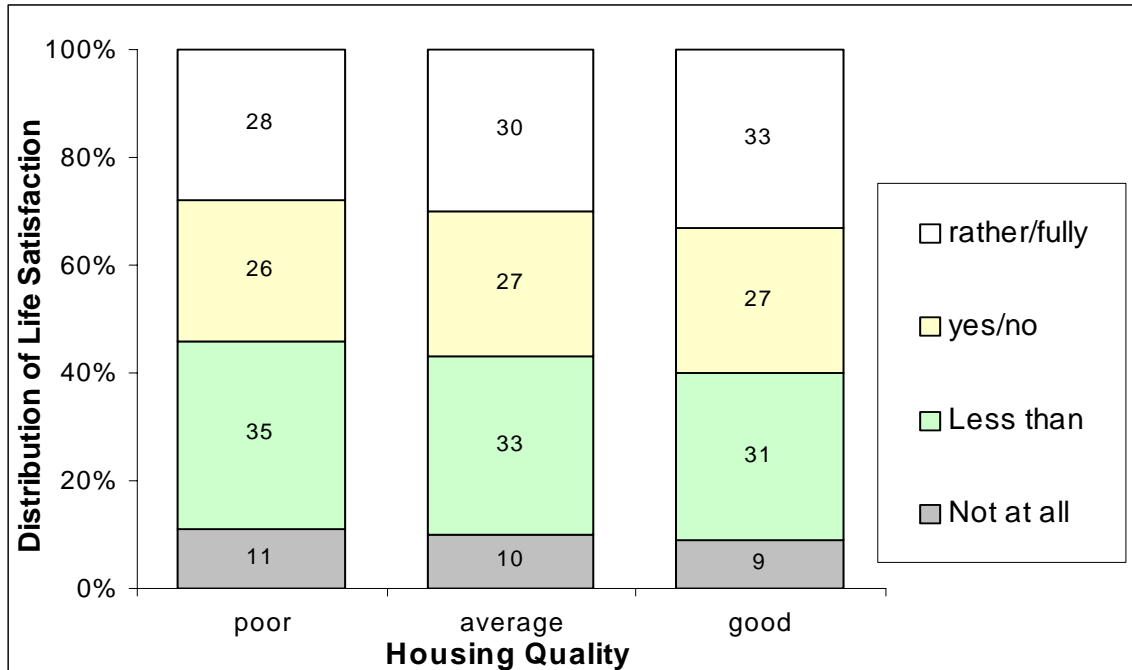
Figure 6: Predicted Satisfaction by Housing Quality, 2002

Note: X values held at 40-year-old, healthy, married, Russian, urban, female, no higher education, employed, non-manager, religious believer, 3 possessions and median income.

income. For both measures, greater affluence translates into better chances of being satisfied with life in general, although the effects of housing are quite modest.

While the associations in Figures 4–6 are all in the expected direction, the effects of economic wellbeing on subjective wellbeing appear less dramatic when each component is considered individually. If household income, possessions, and housing quality jointly determine living standards, we should examine changes in the probability distribution allowing for all three factors to shift at once. Figure 7 does this graphically.

We define an individual as having poor living standards if their household income is at the 20th percentile (1500 rubles a month), they score 1 on the possessions scale,[20] and their housing quality is poor. Average living standards means having the median income (2600 rubles), 3 possessions, and average housing. Finally, good living standards require 80th percentile income (4500 rubles), 5 possessions, and good housing conditions.

The effects of all three of these dimensions of living standards compounded together are quite dramatic. Our otherwise average Russian has only a 17% chance of being satisfied with her life if her living standards are poor, but a 47% chance if her living standards are good. Conversely, poor living standards mean she is more than twice as likely (61% vs. 27%) to be less than satisfied or not at all satisfied with her life.

In sum, money buys some happiness in Russia, but material well-being "buys" a lot more happiness than would be apparent if we only included income in the model. A growing literature in the sociology of wealth argues that income is an inadequate proxy

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[20] Scores do not correspond to the number of possessions owned, since the scale is age-adjusted (old items count as less than 1). For convenience sake, however, we will refer to scores on the scale as if they represented number of possessions owned. See the appendix for details on scale construction.
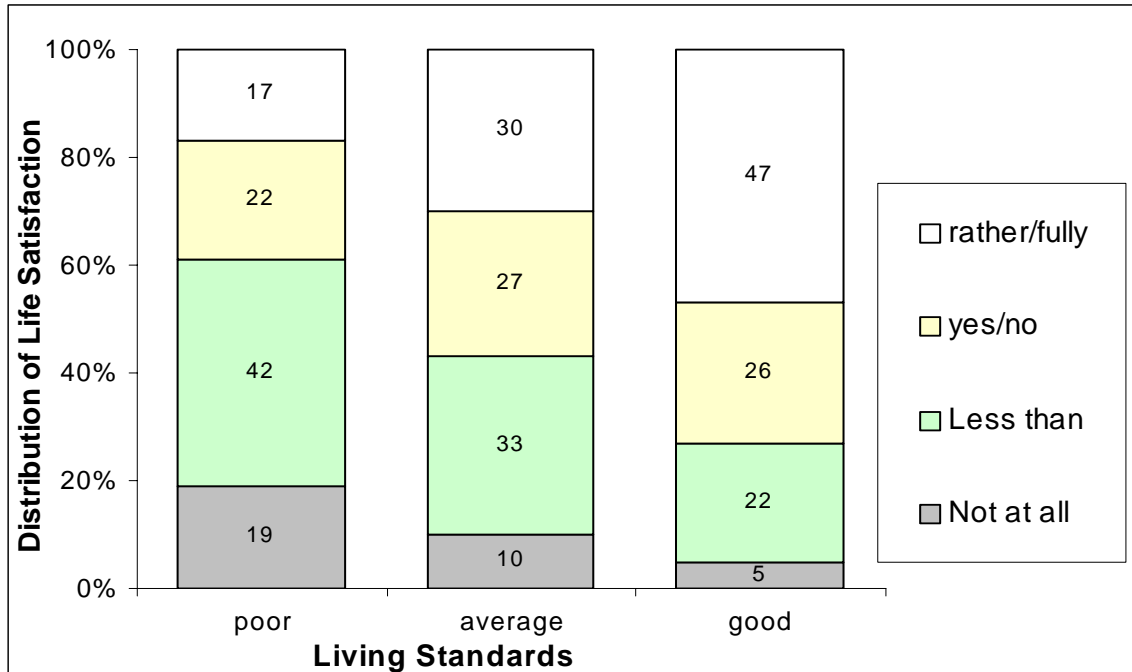
Figure 7: Predicted Satisfaction by Living Standards, 2002
Note: Poor means 20th percentile income, poor housing, and 1 durable possession;
   Average means median income, average housing, and 3 durable possessions;
   Good means 80th percentil income, good housing, and 5 durable possessions.

for living standards in advanced capitalist societies (Conley 1999; Keister 2000; Spilerman 2000; Wolff 2002). This is even truer in Russia, where access to housing, cars, and other important durable possessions depend as much on a household's socioeconomic status in the Soviet period and the structure of post-Soviet social networks as on recent income. The findings presented here not only demonstrate the necessity of comprehensive measures of living standards in the study of happiness, but illustrate the potential hazards of relying on income alone in the vast array of sociological research in which material resources are an important independent variable.

Time Trends: The Effects of Changing Living Standards on Happiness

To better understand both current happiness levels and the direction of trends over time, we need to examine economic mobility patterns. We conceptualize and model mobility in three ways. First, we examine the effect of changes in economic wellbeing on current subjective wellbeing by adding a measure of economic mobility to the model for happiness in 2002. Second, we fit a "first-difference" regression of the effects of economic mobility on happiness mobility; that is, the dependent variable becomes change in happiness levels from 2001 to 2002. Finally, we pool data across the two years to test for changes in the effects of independent variables on happiness in any given year.

Change as a Determinant of Happiness

Adaptation theory holds that the benefits of income gains are short-lived. Upward mobility produces a sense of enhanced well-being, but as people get used to their new income levels, their expectations align with their resources and satisfaction returns to its previous level (see the discussion of **H1B** above). If this is true in Russia, then people who have only recently attained a higher income status should be more satisfied than

others sharing the same current income level. Conversely, those who have lost income

should be less satisfied, holding current income constant.

There are many ways to define a change in income – e.g. absolute change,

percentage change, change in rank or quintile. We operationalize income mobility as the

log of the ratio of current income to previous income.[21] A ratio is sensible because we

expect that the effect of an absolute change would depend on the previous level; an extra

200 rubles a month would matter more to someone earning 2000 rubles a month (for a

ratio of 2200/2000=1.1), versus someone earning 10,000 rubles a month (for a ratio of

10,200/10,000=1.02). Taking the log is sensible because, as with income per se, we

expect a relative change in income to have diminishing returns. Furthermore, the log of a

ratio has two desirable formal properties. First, the log transformation makes the

distribution symmetric, adjusting for the fact that ratios for negative mobility are bounded

between 0 and 1, while the ratio for positive mobility has no upper limit. Second, the log

of a ratio decomposes into a difference between logs, which has advantages for

interpretation. The effect may be nonlinear as the differences in income move from

negative to positive. Therefore we add an interaction term with a dummy variable for

whether income is negative (D=1 if so, 0 otherwise).

$$Y = \beta_1 \ln(X_{2002}) + B_2 \ln(\frac{X_{2002}}{X_{2001}}) + \beta_3 \ln(\frac{X_{2002}}{X_{2001})} * D + \mathbf{X}B,$$

---

[21] Note, we also fit models that included a variety of other functional forms for mobility (e.g. other

transformations besides log of income ratio, measures of change in income rank), and interactions between

income mobility and current income. None fit better than the model presented here. Effects of mobility in

possessions and housing quality were also tested, but did not prove statistically significant and are not

reported here.

Where Y=the odds of being more satisfied with life, X=income in a given year, and $\mathbf{XB}$ = the vector of other effects of other variables included in the model.

Results are presented in Model 4 of Table 3.[22] Downward income mobility does not appear to influence happiness, net of current income level. For those who have experienced upward mobility in income, the effect is actually the inverse of that predicted by adaptation theory. As the ratio between present and past income increases, the odds of being more satisfied with life decrease by 13% for every unit change in the log income ratio. It seems that Russians prefer income stability to income mobility, net of the effects of their actual income level.

Although the effect of income mobility is statistically significant, it is substantively quite small, as is evident in calculating the predicted change in the distribution of satisfaction as the ratio of present to past income changes at various values of current income. As Table 4 demonstrates, holding income in 2002 constant (and setting all other variables at average or modal levels, as was done in the calculations of Figures 4-7), as the ratio of current income to previous income grows, the predicted distribution of happiness is only slightly depressed.

Another way to think about this to exploit a property of the log of a ratio. If income in 2002 is greater than income in 2001 then:

$$Y = \beta_1 \ln(X_{2002}) + \beta_2 \ln(\frac{X_{2002}}{X_{2001}}) + \mathbf{XB} = \beta_1 \ln(X_{2002}) + \beta_2 [\ln(X_{2002}) - \ln(X_{2001})] + \mathbf{XB}$$

---

[22] Note that we also tested the effects of changes in possessions and housing quality (for which there was much less mobility in this one year period than for income), but they were not significant and are not shown.

Table 4. Predicted Life Satisfaction by Proportionate Change in Income At Several Levels of 2002 Income

Income Ratio (2002 vs. 2001)	Predicted Satisfaction Level				
	Not at All	Less Than	Yes & No	Rather/Fully	Total
When 2002 Income= 1500 rubles (20th percentile)					
1	12	36	26	26	100
1.5	13	37	25	25	100
2	13	37	25	25	100
3	14	38	25	23	100
When 2002 Income= 2600 rubles (median)					
1	10	32	27	31	100
1.5	10	33	26	30	100
2	11	34	26	29	100
3	11	35	26	28	100
When 2002 Income= 4500 rubles (80th percentile)					
1	8	29	27	37	100
1.5	8	29	27	35	100
2	9	30	27	35	100
3	9	31	27	33	100

Collecting terms we get:

$$Y = (\beta_1 + \beta_2)\ln(X_{2002}) - \beta_2 \ln(X_{2001}) + \mathbf{X}B$$

In this case, $B_1 = \ln(1.56) = .44$ and $B_2 = \ln(.87) = -.14$, which results in:

$$Y = .30\ln(X_{2002}) + .14\ln(X_{2001}) + \mathbf{X}B .$$

The goal is to understand the effect of an income change on the percentage happier. A standard result in logistic regression analysis shows that the marginal effect of some X_j on p – the proportion with a positive outcome on the dependent variables – is $\beta_j p(1-p)$ (e.g., Long 1997). When comparing two independent variables, the contribution of p is the same for each; all the difference between them is reflected in the β s. In this case, with $\beta_1 = .30$ and $\beta_2 = .14$, we can say that the effect of current income is roughly twice the effect of last year's income – provided that income increased. For Russians whose incomes failed to increase, present income is all that matters; last year's income is statistically insignificant.

In conclusion, upward mobility does not appear to have a strong effect on happiness, and to the extent it does have an effect, that effect is actually negative in the Russian case. Figure 8 presents descriptive statistics consistent with this conclusion: controlling for current income, mobility patterns do not suggest that people who have recently become wealthier are any happier than those whose incomes have stayed the same or fallen.
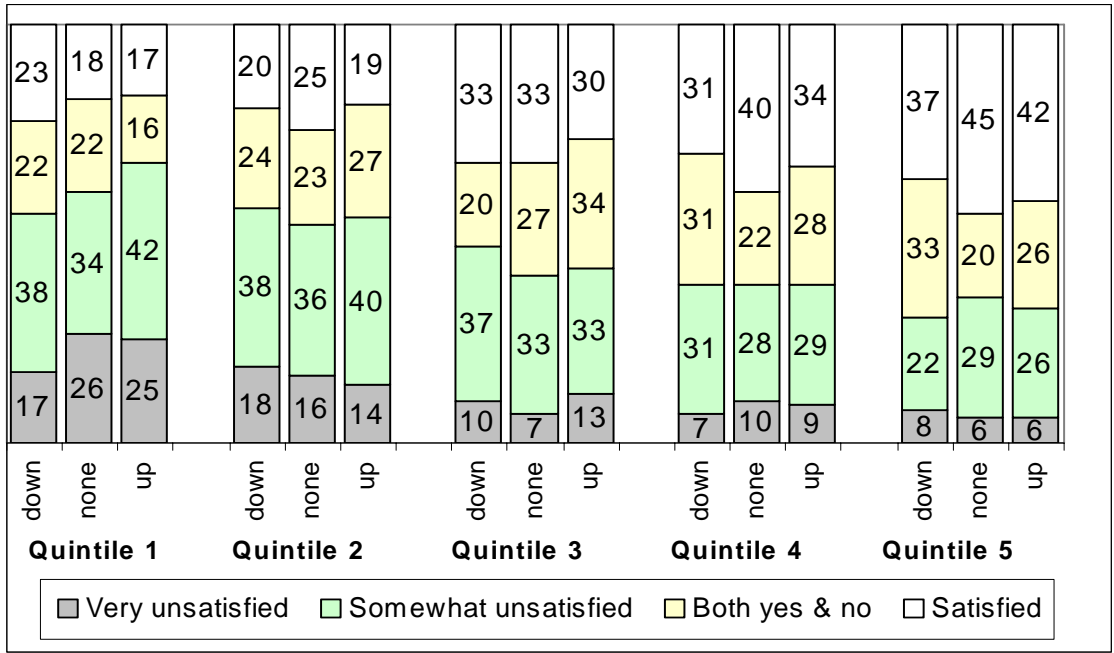
Figure 8: Life Satisfaction by Income Mobility by 2002 Income Quintile

Note: Mobility is defined as downward if income fell by at least 20%, and upward if income rose at least 20%.

The Determinants of Change in Happiness

As an alternative conceptualization of the effects of economic mobility on happiness, we construct a new dependent variable for the *change* in reported life satisfaction between 2001 and 2002. Table 5 depicts the cell-percentages in a cross-tabulation of reported life satisfaction in 2001 and 2002; the shading indicates how cases are grouped to create an ordinal variable for happiness mobility. The variable ranges from -2 to 2, with -2 meaning that a person fell at least two steps on the happiness scale, and 2 meaning they rose at least two steps.

This variable is used as the dependent variable in a first-difference regression, in which all variables enter the model as the difference between time 2 and time 1. Those variables that do not change cancel out, which is logical since we would not expect a constant to explain change. Unmeasured constant variables would also cancel out. This is advantageous because it controls for factors such as personality that are thought to influence happiness at any given time, but which are not measured here. Results are reported in Table 6.

A change in log income does have a positive, statistically significant increase on the change in happiness. Here a nonlinear term was not necessary, meaning that a unit increase in the difference in income has the same proportionate effect at negative and positive income differences. Mobility in possessions and housing, contrary to our expectations, does not have a statistically significant effect on mobility in happiness (although this may be because there were not enough transitions between housing and possessions categories, which tend to lag behind income, to provide adequate statistical power to notice an effect over a one year period).

Table 5: Mobility in Life Satisfaction Between 2001 and 2002

Satisfied in 2001	Satisfied in 2002			
	Not at all	Less than	Yes & No	Rather/Fully
Not at all	6	7	3	2
Less than	4	15	9	9
yes and no	1	6	8	8
Rather/Fully	1	4	5	12

Table 6. First-Difference Regression on Change in Life Satisfaction

|		OR	95% CI	
Change in Log Income		1.15	(1.06,1.25)	**
Possessions	(Same)			
	Fewer	0.99	(.84,1.15)	
	More	1.06	(.94,1.21)	
Housing	(Same)			
	Worse	0.93	(.71,1.22)	
	Better	0.97	(.77,1.23)	
Marital Status	(Stayed Married)			
	Stayed Single	0.92	(.82,1.03)	
	Got Married	1.05	(.77,1.43)	
	Got Divorced	0.59	(.44,.79)	**
Education	(Stayed Same)			
	New Degree	0.83	(.61,1.14)	
Employment Status	(Never Unemployed)			
	Got a Job	1.3	(1.01,1.66)	*
	Lost Job	0.92	(.71,1.20)	
	Stayed Unemployed	0.61	(.46,.79)	**
Religious Belief	(Stayed a Believer)			
	Stayed a Nonbeliever	0.99	(.86,1.13)	
	Became a Believer	1.05	(.87,1.28)	
	Stopped Believing	0.83	(.68,.99)	*
Health	(Stayed Healthy)			
	Stayed Unhealthy	0.99	(.88,1.13)	
	Became Healthy	1.09	(.94,1.27)	
	Became Unhealthy	0.93	(.80,1.09)	

*=p<.05; **=p<.01   % Reduction LL (McFadden's R^2): .01

The only other variables with significant effects were changes in marital status, employment, and religious belief. Getting divorced reduces the odds of becoming more satisfied with life by 41%, compared to those who stayed married, holding all else constant. Losing one's religion also has a negative effect (17% reduction in odds of becoming more satisfied). People who were unemployed in 2001 but found a job in 2002 experienced a relative improvement in the odds of being happier than they were in 2001, versus those who were employed in both years. Conversely, those who were unemployed in both years were much less likely to become happier than those who were employed in both years.

We conclude from these results that more money can translate into improved subjective wellbeing. But, based on the analysis in the previous section, it is the extra income itself that makes people happier, not the relative experience of upward mobility. That is, hypothesis *5* is true, while hypothesis *1C* is not.

**The Changing Determinants of Happiness**

In our final set of models, we test whether improvements in living standards adequately explain the notable upward shift in the distribution of happiness in Russia between 2001 and 2002 (depicted in the last two columns of Figure 2). In other words, are the effects found in the previous section enough to account for aggregate improvements in happiness? And if not, is the "shock" hypothesis plausible, and are the benefits to increasing stability uniformly distributed throughout the population? Note that we cannot directly measure the psychic benefits of macroeconomic growth or stability. We are conceiving of macro-level change as accounting for the residual
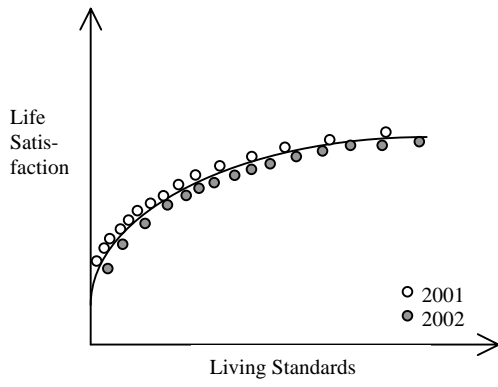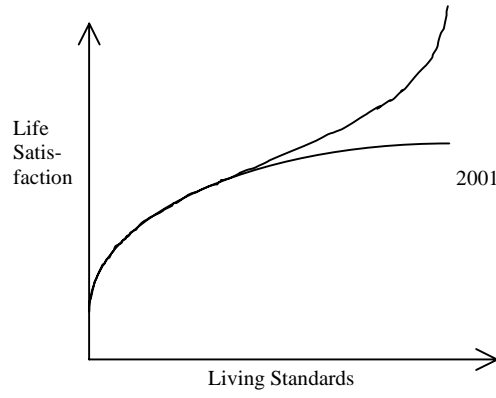
(a) No macroeconomic payoff
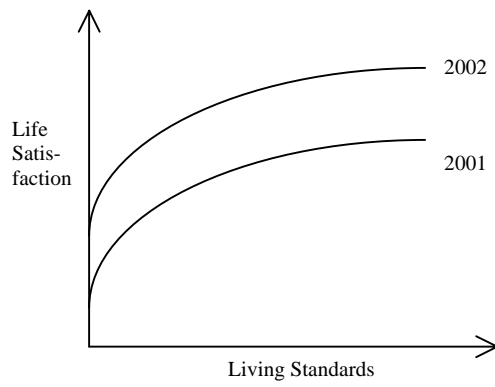
(b) Uniform macroeconomic payoff
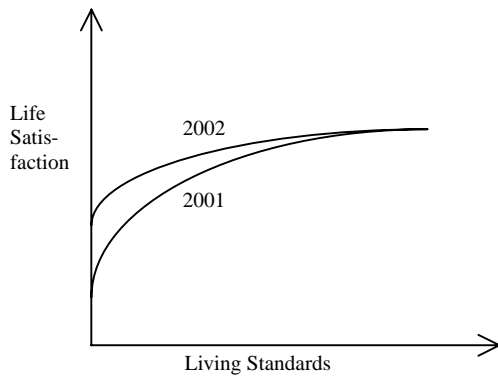
(c) Macroeconomic payoff to poor

(d) Macroeconomic payoff to rich

Figure 9: Hypothetical Psychic Benefits Of Macroeconomic Growth

difference in happiness over time otherwise unaccounted for by changes in observed variables.

To help visualize competing hypotheses, Figure 9 graphs alterative scenarios. Scenario A, "no macroeconomic payoff," depicts the relationship we would see if increasing living standards entirely account for an increase in happiness *(H6A)*. The predicted happiness at any given level of living standards is the same, but observed average living standards have increased. Alternatively, the shock explanation implies that as stability increases, everyone should benefit psychologically from the environment of greater certainty. If the benefits are uniform throughout the population, everyone's chances for happiness increase the same amount, while the relative effect of changing living standards on variation within the population remain the same (Scenario B in Figure 10). However, the psychological payoffs to macroeconomic growth and greater stability may be greater for poor Russians than for ones who were already better-off. In keeping with the theory of diminishing returns, people who were very poor in 2001, who tend to be extremely unhappy, have nowhere to go but up psychologically as well as materially. Perhaps macroeconomic growth gives poor people a greater sense of optimism that their lives could improve, even if their living standards are still low. Conversely, improved stability may matter less for wealthy people – the fact of their wealth already makes them happier than most, such that enhanced macroeconomic stability has relatively little effect on their happiness levels (Scenario C in Figure 10).

On the other hand, wealthier households lost the most materially and psychologically in 1998. In a relatively unhappy population such as Russia, shock further compresses the happiness distribution, since only those who are already happy
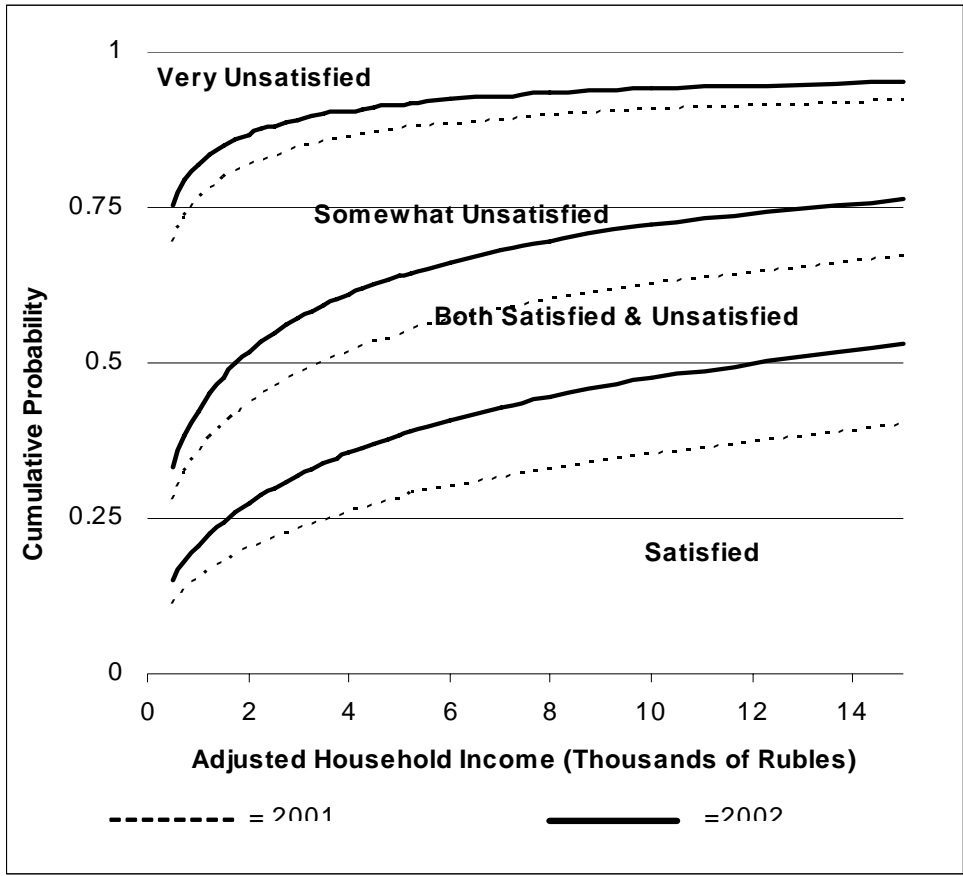
Figure 10: Predicted Life Satisfaction by Income, 2001 & 2002 (Simple Ordered Logit)

have anything to lose. If shock disproportionately affects people who had been generally well-off, the correlation between income and morale would be relatively weak after a shock, since nearly everyone is unhappy no matter what their income. When stability returns, the happiness levels of wealthy people would rebound to pre-crisis levels, such that the psychic benefits to stability are greatest for the best off (Scenario D in Figure 10).

We can directly test Scenario A by fitting Model 3 from Table 3 to 2001 data, and then plugging in values for living standards variables in 2002 into the 2001 model to see if the predicted probabilities are similar to those observed in 2002.[23] For 2001, the baseline ordered logit model is:

$$\ln(\frac{P(Y_{2001} > i)}{P(Y_{2001} \leq i)}) = X_{2001}B_{2001} - \tau_i,$$

where X is a vector of independent variables, and B is the vector of corresponding estimated coefficients, and τ_i is the cutpoint (intercept for a particular category).

To test scenario A, we substitute XB as follows.

$XB_{(A1)} = X_{2002}^{LS}B_{2001}^{LS} + X_{2001}^{OTH}B_{2001}^{OTH}$, where
X_{2002}^{LS} is the vector of observed values for living standards variables in 2001,
B_{2001}^{LS} is the vector of estimated coefficients for living standards in the 2001 model;
X_{2001}^{OTH} is the vector of observed values for all other variables in the 2001 model;
B_{2001}^{OTH} is the vector of estimated coefficients for other variables in the 2001 model;

---

[23] We use Model 3 rather than Model 4 from Table 3 because creating a variable for income mobility in 2001 requires panel data for 2000. This would result in substantial loss in cases (about 20%), and more than half the cases for Moscow and St. Petersburg. While it would still be possible to fit the model with a more limited sample, we felt that to be unnecessary given the weak effect of income mobility found for 2002. Other coefficients are not significantly affected by dropping mobility from the model for happiness in a particular year.

Table 7. Predicted Life Satisfaction in 2002 based on Adaptations of 2001 Model

	Satisfaction Level				
	Not at All	Less Than	Yes & No	Rather/Fully	Total
Observed Distribution in 2002	12	33	24	31	100
Model A1: Change in Level of Living Standards Only	17	37	24	22	100
Model A2: Change in Levels of All Independent Variables	17	37	24	22	100
Model 3: Change in Cutpoints (Intercept) Only	11	30	24	35	100

τ_i are the fitted cutpoints for the 2001 model

Table 7 reports results for this and other models. Model 1 performs rather poorly. The predicted distribution of life satisfaction in 2002 barely differs from that for 2001, while the observed distributions differ substantially. Assuming that the model is correct for 2001, we can rule out Panel A.

Model 2 tests whether changes in all observed variables in the model can predict the 2002 observed outcomes under the 2001 model. That is,

$XB_{(A2)} = X_{2002}B_{2001}$, where

X_{2002} is the vector of observed values for all variables in 2002,

B_{2001} is the vector of estimated coefficients for all variables in the 2001 model;

The predicted probabilities are identical to Model 1 and far from the observed probabilities. Therefore, something other than changes in individuals' values on the observed variables must account for the upward shift in happiness in Russian society.

Model 3 estimates the predicted probabilities if we allow only the cut points to change from 2001 to 2002. We calculate XB for 2001 and enter it as a single variable (which we call Z) into a model where the dependent variable is drawn from 2002.

(a) $Z = X_{2001}B_{2001}$

(b) $\tau_{i(3)}$ is derived from model: $\ln(\dfrac{P(Y_{2002} > i)}{Y_{2002} \leq i}) = \beta_Z Z - \tau_{i(3)}$,

β_Z is estimated at .9, but the confidence interval includes 1, which means that there was no statistically significant proportionate change in the relationship between **XB** (based on 2001 data) and happiness from 2001 to 2002. If we hold $\beta_Z = 1$ in calculating the predicted probabilities, we can assess whether allowing only the cutpoints to vary predicts a happiness distribution similar to what is observed in 2002 (otherwise, we

would by definition predict 2002 outcomes perfectly). The results for Model 3 in Table 6 show a much improved fit of the estimated to the observed probabilities for 2002.

Based on these findings, we can conclude that the improvement in the aggregate distribution of life satisfaction from 2001 to 2002 was not caused by changes in individual attributes, e.g. income level or marital status. Instead, the results suggest that this period brought across the board improvement in the probabilities of satisfaction for all people, regardless of their individual characteristics. This lends support to the uniform macroeconomic payoff hypothesis (Panel B).

The previous model constrained the entire vector of independent variables to vary proportionately. Perhaps the strength and shape of effects of particular variables on happiness changed over time. For example, if Panel C is correct, the relationship between income and happiness should weaken (lower incomes matter less for poor people). Figure 10 graphs the change in the bivariate relationship between income and satisfaction between 2001 and 2002. If Panel A were true, there should be no difference between the graphs in 2001 and 2002, because a given amount income should "buy" the same amount of happiness in both years, but in 2002 more people have higher incomes, moving the population up the satisfaction distribution. Yet, based on Figure 10, the same amount of income appears to buy more happiness in 2002 than in 2001. For example, the probability of being very satisfied at an income of 3000 rubles was .24 in 2001; in 2002, the same income "bought" a .32 probability, a 33 percent increase over 2001. Indeed, the observed (and predicted) distribution of satisfaction shifted upward at all income levels. Comparing the two figures further suggests that the relationship between income and satisfaction grew a little stronger, because the prediction lines are also slightly steeper in

2002 (the opposite of the expectation of Panel C). In other words, not only does a given amount of income buy more happiness in 2002, an incremental increase in income appears to have an even stronger effect.

To formally test for changes in the size of variable effects on happiness over time in a multivariate framework, we pool the data for 2001 and 2002 into a single dataset with two observations for each individual. Interaction effects with an indicator variable for year were tested for all independent variables, but none proved to be significant. We also tested a nonlinear effect for income, such that the payoff for higher incomes could increase as depicted in Panel D. This also did not prove significant. Table 8 presents the final model for the pooled data set, along with cross-sectional models for comparative purposes. We see that the confidence intervals for all independent variables overlap for all coefficient estimates in 2001 and 2002, which is consistent with the lack of interaction effects with time for the pooled data. This disconfirms Panel B (macroeconomic payoffs to the poor), under which the loglinear effect sizes for income and possessions should be smaller in 2002 than in 2001, since the baseline happiness would rise for poor people, reducing their relative distance from the rich.

The pooled model does include a significant year effect. This says that controlling for all else, individuals in 2002 had a higher odds of being satisfied than individuals in 2001. All else being equal, the odds of being more satisfied are 50% higher in 2002 compared with 2001. This again is consistent with the uniform macroeconomic benefits hypothesis, As the shock of the 1998 ruble crisis recedes and the economy improves, everyone has a greater chance of being happier, regardless of their individual economic fortunes.

Table 8: Comparison of Effects in Cross-Sections and Pooled Years
(Multiplicative Effects on Odds of Being More Satisfied With Life)

		Cross Sections				Pooled Model for	
		2001		2002		2001 & 2002	
		OR	CI	OR	CI	OR	CI
Household Income (Log)		1.38	(1.27,1.52)	1.48	(1.35,1.62)	1.44	(1.35,1.52)
# Durable Possessions		1.20	(1.14,1.26)	1.21	(1.15,1.27)	1.21	(1.17,1.25)
Housing Quality (Poor)							
	Average	1.05	(.92,1.20)	1.15	(1.002,1.32)	1.13	(1.03,1.23)
	Good	1.41	(1.11,1.80)	1.30	(1.03,1.64)	1.40	(1.19,1.65)
Male		1.19	(1.08,1.32)	1.23	(1.11,1.35)	1.21	(1.11,1.32)
Age		0.92	(.90,.94)	0.91	(.90,.93)	0.91	(.90,.92)
Age sq		1.0008	(1.0006,1.001)	1.009	(1.0007,1.0011)	1.0008	(1.0006,1.001)
Russian		0.76	(.65,.89)	0.74	(.62,.88)	0.76	(.67,.85)
Married		1.32	(1.16,1.51)	1.52	(1.33,1.72)	1.42	(1.29,1.56)
Higher Education		1.11	(.97,1.28)	1.14	(.99,1.31)	1.14	(1.02,1.27)
Entrpreneur/Manager		1.24	(.96,1.61)	1.20	(.93,1.55)	1.23	(1.01,1.50)
Employment Status (Unemp.)							
	Employed	1.76	(1.44,2.15)	1.61	(1.31,1.98)	1.70	(1.47,1.97)
	Not in Labor Force	1.91	(1.53,2.39)	1.76	(1.41,2.21)	1.84	(1.56,2.16)
Religious		1.30	(1.14,1.46)	1.29	(1.14,1.46)	1.29	(1.17,1.41)
Healthy		1.43	(1.29,1.59)	1.44	(1.28,1.61)	1.43	(1.32,1.55)
Year=2002						1.50	(1.41,1.59)

DISCUSSION

Neither changes in the marginal distributions of economic status variables, nor changes in the strength of the effects of these and other variables, can explain the overall improvement in life satisfaction among Russians from 2001 to 2002. This does *not* mean that money (conceptualized here as wealth) has less consequence for happiness – living standards remain just as important as they were before for explaining differences among individuals in any given year. Macroeconomic stabilization and growth have improved average happiness in Russia not so much by changing individual incomes and living standards, but by creating a greater mood of optimism that lifted everyone's spirits. Only time will tell whether this change in the national mood for the better will be permanent, and whether Russia will lose its "outlier" status as among the unhappiest of nations. The fact that relative upward mobility actually had a slightly negative effect on current happiness, net of current income, suggests that subjective wellbeing in Russia is enhanced by personal as well as macro-level stability in economic fortunes.

By way of conclusion, we briefly consider implications of subjective wellbeing for political stability in Russia. We did not formally include measures of political attitudes in the models predicting life satisfaction because of concerns about endogeneity – liking the political system under which one lives should make a person more satisfied, but on the other hand becoming more satisfied with life in general could also make one's views of the political system more favorable. Still, it is interesting to examine the correlation between the two variables.

In 2001 (but not 2002), the RLMS asked the following question: "What kind of political system, in your opinion, is most suitable for Russia: the Soviet system that was

in our country until perestroika; the Soviet system but in a different, more democratic form; the political system that exists today; Western-type democracy; other (specify); don't know." Write-in responses were either coded into one of the existing categories, assigned to a new category for authoritarian responses such as "monarchy" or "iron-fisted ruler," or included in a residual category for don't know or don't care responses (many write-in responses asserted that no political system could fix Russia's problems).

The cross-tabulation presented in Table 9 shows a strong correlation between life satisfaction and political attitudes. Two-thirds of very dissatisfied people, and nearly as many somewhat unsatisfied people, prefer either the Soviet regime or a more democratic variant of Soviet socialism. Only 21 percent of very dissatisfied people like the current system or Western-style democracies. By contrast, twice as many satisfied respondents favor the status quo or the West (44 percent). The correspondence between satisfaction and support for the status quo or convergence with the West is not perfect – a substantial minority (42 percent) of satisfied people still say that socialism is best for Russia.

On balance, it seems reasonable to infer from Table 9 that if people were happier, they would be more likely to support capitalist transition. Other research in developing countries also suggests that improving subjective wellbeing translates into greater legitimacy for transitional governments. In South Africa, support for the new regime and democracy is correlated with perceptions of personal quality of life for blacks, and with perceptions of collective quality of life for all races (Mattes and Christie 1997). One paper comparing subjective wellbeing in Latin America and Russia finds that "individuals' having a pro-market attitude had significant and positive effects on happiness" in both countries (Graham and Pettinato 2001). The authors acknowledge

Table 9: Political Attitudes by Life Satisfaction, 2001

| | Best Political System for Russia | | | | | |
	Soviet System	Democratic Socialism	Existing System	Western Democratic	Author- itarian	Don't Know, Don't Care	Total
Not At All Satisfied	44.0	21.3	11.8	9.2	1.2	12.6	100
Somewhat Unsatisfied	36.2	25.3	16.9	10.2	1.3	10.1	100
Both Yes & No	28.2	22.8	26.3	10.6	1.4	10.7	100
Rather/ Fully Satisfied	24.6	17.8	30.1	13.4	2.5	11.1	100
All	33.1	22.4	21.3	10.8	1.6	10.9	100

Note: The Political Attitudes Question Was Not Asked in 2002.

that the causal nexus is unclear and propose that "there may be a virtuous circle…in which pro-market attitudes, satisfaction with democracy, and life satisfaction reinforce each other."[24]

In sum, individual and national income jointly influence Russians' sense of well-being. In any given year, the materially better off feel better, and everybody is more likely to feel better these days when the economy is rebounding, than they did just a few years ago when it was falling apart. This recovery is as fragile as the Russian economy itself, and the new political regime. Continuing to improve living standards for the poor, and maintaining recent gains for others, would by leading to a happier population, enhance political stability in Russia.

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[24] Longitudinal analysis could more definitively assess the question of causality, since we could observe the sequencing of change in satisfaction level and political preferences. Although the 2002 wave of the RLMS did not include the political attitudes question, the 2003 wave does; the release of that data will enable follow up on these and other trends in the still relatively unhappy country of Russia.

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APPENDIX: VARIABLE CONSTRUCTION

Household income: Total household income was compiled by aggregating data from questions asked of all adult household members on formal and informal work income and pension income, plus household level data gathered from the head of household on additional state and private transfers, capital income, and other miscellaneous income. The income distribution was top coded at 20000 rubles to control outlying cases, and bottom coded at 500 rubles to provide a better fitting functional form for income of a bivariate ordered logit of log income on life satisfaction.

Durable Possessions Scale: An additive scale was constructed based on household ownership of the following durable goods: refrigerator, washing machine, color television, car, VCR, computer, freezer. Goods were selected based on their fit to a Mokken scale, and weighted based on age. The first five goods were worth .5 points if manufactured before 1985, .75 points if manufactured between 1985 and 1991, and 1 point if manufactured since 1992. The other goods were only counted if manufactured since 1992 (in the post-Soviet period).

Housing Quality: Housing was classified as poor, average, or good based on the following criteria. Poor housing includes communal apartments, workers' dormitories, apartments or homes with less than 8 square meters of living space per person or lacking central heat, running water, or sewerage. Average housing includes: apartments or houses with all utilities (including hot water and phone) and between 8 and 16 square meters of living space per person, or having at least 16 square meters of living space per person but lacking either hot water or a phone. Good housing requires at least 16 square meters of living space per person and all utilities.

Employment Status: A dichotomous variable, 1 for unemployed, 0 for employed or not in the labor force. We tested for differences between employed people and people not in the labor force, but they were not notable so we combine them into a residual category.

Marital Status: We consider two groups: 1) currently married (with or without license, includes common law marriage); 2) single, divorced, or widowed. Differences within the latter category were tested and found to be insignificant.

Religiosity: People are classified as "believers" if they say they somewhat or fully believe in God; nonbelievers otherwise.

Health: Although the RLMS asks people to rate the quality of their own health, we do not use self-rating because it may be endogenous to life satisfaction (those who are unsatisfied may be more likely to rate their health poorly, regardless of their actual health problems, and vice versa). Instead, we use respondent reports on specific disabilities or diseases to create a dichotomous variable. Respondents are considered to have health problems if they have one or more of the following conditions: severe and uncorrected vision or hearing problems; missing limb; chronic disease of the lungs, liver, or kidneys; diabetes; severe high blood pressure (systolic>180 and diastolic>110); heart attack, severe chest pain lasting more than 30 minutes, stroke, or tuberculosis within the past year; permanent neurological damage from an earlier stroke.