

# Happiness, Markets, and Democracy: Latin America in Comparative Perspective

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Published in *The Journal of Happiness Studies*,  
Vol. 2, No.3, April 2001

## **ABSTRACT**

The literature on subjective well being highlights the role of relative income differences, an issue which is particularly salient for the emerging market countries. We explore the demographic determinants of happiness in 17 countries in Latin America, as well as the effects of macroeconomic trends and attitudes about the market on happiness. We provide comparative reference with data from Russia and the United States. We find that the determinants of happiness in Latin America are remarkably similar to those in the advanced industrial countries. We also find a marked and negatively skewed perceptions gap between individuals' objective economic situations and their subjective evaluations in both Latin America and Russia. That gap, in turn, has negative effects on happiness. Inflation and unemployment have negative effects on happiness in both contexts, while pro-market attitudes and preference for democracy have positive effects.

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*“The grumbling rich man may well be less happy than a contented peasant,  
but he does have a higher standard of living than the peasant.”*  
Sen (1983)

## Introduction

One of the most fundamental objectives of public policy is to enhance the welfare of as many people as possible, within a given set of resource constraints. Yet academic and public policy debates rarely address the question of what determines improvements in welfare or in life satisfaction. Economists, in contrast to psychologists and sociologists, have traditionally shied away from subjective data on life satisfaction. Most economic models assume that wealth and utility are virtually synonymous. Yet research by both economists and psychologists on life satisfaction or “happiness” finds a seeming paradox that challenges that assumption: aggregate levels of life satisfaction do not increase as societies grow wealthier, even though within countries wealthier individuals are, for the most part, “happier” than poorer ones.<sup>1</sup>

These findings highlight the importance of relative rather than absolute differences in wealth, particularly after societies cross a certain absolute level of income. This by no means discounts the fundamental importance of economic growth in reducing poverty and attaining a wide range of other development objectives. Yet it does suggest that factors other than income growth affect individuals’ assessments of their own welfare, and that these same factors may influence their responses to incentives and policies.<sup>2</sup>

Concern for relative differences can, under certain circumstances, lead to seemingly “non-rational” economic behavior. Concern for relative income differences can lead individuals to opt for conspicuous consumption, rather than investing in their children’s education, for example, to demonstrate wealth status, or to undertake risky behavior, such

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<sup>1</sup> The economics research on happiness was pioneered by Richard Easterlin in the mid-1970’s. See Easterlin (1974), Easterlin (1995), and Easterlin (2000). For a recent study on the U.S. and U.K., see Blanchflower and Oswald (1999), and for Switzerland see Frey and Stutzer (1999). On measurement issues see Van Praag et al. (1999). For an excellent summary of the psychological work on the subject, see Kahneman, Diener, and Schwarz (1999). For a review of much of this literature, see Veenhoven (1991) and Graham and Pettinato (2000).

<sup>2</sup> Decades ago, Pigou (1920) wrote that what could be measured with money, economic welfare, was only one component of individuals’ welfare, and thus our capacity to assess welfare was largely determined by our capacity to measure it.

as gambling, to enhance status via wealth gains at the margin.<sup>3</sup> Concern for relative income differences and perceptions of past economic progress can also have political ramifications and, in particular, result in persistent attitudes about redistribution.<sup>4</sup> While not the usual focus of analysis, non-income determinants of economic behavior and attitudes about relative income differences are likely to have some influence on the future direction of market economies in both developed and developing countries.

Not surprisingly, the issue of relative income differences is a particularly salient one for the emerging market countries, where macroeconomic policy frameworks are in flux, and there is wide debate over who the winners and losers are. In addition, the new opportunities and increased mobility that accompany the turn to the market also come with new insecurities.<sup>5</sup> Our preliminary work in Peru suggests that even the winners may be reluctant to assess their situation positively and - in line with the general direction of the happiness literature findings - that the relationship between wealth and happiness is not straightforward.<sup>6</sup> Yet to date we know very little about how the turn to the market and related macroeconomic trends affect individual perceptions of well being or happiness and, in turn, how those aggregate at the country level.

Most of the research on “happiness” and other measures of subjective well being has focused on individual wealth and demographic characteristics such as age, marital status, and education. We review this literature extensively in previous work; suffice is to note here that there has been very little analysis of how macroeconomic trends, such as unemployment or inflation, affect individuals’ assessments of subjective well being. One notable exception is recent innovative work on the macroeconomics of happiness in the U.S. and U.K. by DiTella, MacCulloch, and Oswald. The authors find that, in addition to the usual demographic determinants of happiness, such as age, gender, and employment status, both unemployment and inflation have negative effects.<sup>7</sup> We are not aware of a similar set of findings for the developing countries.

The literature on market reforms, meanwhile, has focused on aggregate measures of support for markets, evaluating governments’ records at implementing reforms and then

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<sup>3</sup> Cole et al. (1995) develop a model which captures concern for relative standing or status, in which individuals do not get utility from their relative status, but rather the concern is induced because relative status affects consumption of standard commodities. They show that concern for relative wealth can generate conspicuous consumption when wealth is not directly observable. Hojman, meanwhile, develops a model of consumption driven by inequality in Chile, where poor households make non-optimal consumption decisions at the expense of long term human capital investments, behavior that is driven by conspicuous consumption among wealthier groups. See Hojman in Birdsall and Graham (2000). Robson (1992) develops a model of utility which is concave in wealth itself, but convex at some range when the indirect effects via status is included. Schor (1998) notes how American’s debt service as a percent of disposable income has increased in the past decade along with a major consumption boom.

<sup>4</sup> See Benabou and Ok (1998), Piketty (1995), and Clifford and Heath (1993).

<sup>5</sup> For a description of these insecurities and their causes, see Rodrik (1999).

<sup>6</sup> See Graham and Pettinato (1999). See also Webb (2000).

<sup>7</sup> See DiTella, MacCulloch, and Oswald (1997). The authors calculate the “residual” levels of happiness which are not explained by demographic variables in their first stage of regressions, and then run second stage regressions looking at the effect of inflation and unemployment, finding that both have significant and negative effects on happiness.

publics' approval or disapproval of these reforms, using electoral outcomes as a proxy.<sup>8</sup> There has been no attempt to evaluate the effects of reforms and related macroeconomic trends on individuals' subjective well being, and in turn the influence of those perceptions on public support for market policies. In addition, while much of the literature suggests that there is a virtuous and self-reinforcing link between markets and democracy, there has been little, if any, analysis of this link at the individual level. In other words, is there a direct link between individuals' support for the market and their support (or lack thereof) for democratic government?

We attempt to shed light on some of these issues through our analysis of new data from Latin America. We explore three general propositions. The first is that the standard demographic determinants of happiness in advanced industrial economies also hold for Latin America. The second is that relative differences matter more than absolute ones, resulting in a marked perceptions gap between individuals' absolute income levels and their subjective evaluations of their well being. In developing countries, this gap may also be driven by volatility and insecurity, which is more prevalent in those economies than in advanced industrial ones. The third is that macroeconomic trends, such as inflation and unemployment, have significant effects on subjective well being, even after taking demographic effects into account. In addition, in countries undertaking market reforms, these effects are moderated by the timing and stage of market reforms.

Our analysis in this paper is based on data from a region-wide opinion survey, the Latinobarometro, which has been conducted annually in 17 countries from 1997 to 2000.<sup>9</sup> This includes all the Spanish speaking countries in the region and Brazil, except Cuba and the Dominican Republic. Unless otherwise specified, the results reported here are from the final year of the sample, 2000, which has the most complete questionnaire. Where possible, we used the entire pooled sample to check the robustness of findings. The pooled sample has the advantage of being a time series, but the disadvantage that several of the most pertinent life satisfaction questions are not included in all of the years.

We first explore the demographic determinants of happiness for the region. Second, building on our earlier work on Peru, which found large gaps between individuals' subjective evaluations of their past economic progress and actual trends, we seek evidence of similar gaps for our region-wide sample. In repeated surveys of Peruvian households in a decade-long panel, we found that the most upwardly mobile individuals

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<sup>8</sup> See, among others, Geddes (1995); Graham (1994); Graham (1998); and Haggard and Webb (1994).

<sup>9</sup> There are approximately 1000 interviews per country, giving us 17,000 observations per year upon which to base our statistical analysis. The poll is conducted by a respected private firm, MORI, based in Chile, with the support of the European Commission and the Inter-American Development Bank. The effort began in 1995 with a sub-set of countries, full coverage began in 1997. A clear limitation is that the data are not nationally representative in all of the countries, and in several there is a sharp urban bias. One of the authors, Graham, was involved in the effort to launch the survey while spending time on a fellowship at the IDB, and continues to provide input on the design of the survey each year, and therefore has access to the MORI data set. Because MORI still has to cover costs, the most recent data is available to the public only for purchase. Lagged data is available free of charge from the IDB.

were the most negative in their subjective evaluations of their past progress.<sup>10</sup> While we do not have panel data on individuals for our region-wide sample, we do have information about respondents' standard of living, and about their perceptions of past progress, future expectations, and position on a notional national income ladder.

We also explore the effects of market reforms and related trends on individuals' life satisfaction. We focus on the effects of inflation and unemployment on life satisfaction and on attitudes about markets and democracy. We examine the links between life satisfaction and pro-market attitudes, and the links between life satisfaction and attitudes about democracy. For a sub-set of these questions, we are able to provide comparable evidence for Russia from the Russian Longitudinal Monitoring Survey (RLMS) and for the United States from the General Social Survey (GSS).

Finally, a note of caution is obviously necessary when interpreting and drawing conclusions from survey data based on subjective assessments. Recognizing the limitations, we feel that the patterns that we find are consistent enough to merit the attention of researchers and policymakers alike.

### **Happiness in Latin America**

We explored the usual demographic variables that influence happiness, such as age, income, employment and marital status, and education levels, using an approach which others have used for the developed economies. Our dependent variable, happiness, is constructed from a question from the Latinobarometro survey about individuals' degree of life satisfaction, with four possible answers: not at all satisfied, somewhat satisfied, satisfied, and very satisfied. We develop a standard regression model in which happiness is a function of a number of demographic variables, using ordered logits, both using country dummies and treating the entire survey as one large region-wide sample without the dummies (results are in the Appendix Table 1).<sup>11</sup>

We find that Latin America is not all that different from the advanced industrial economies. As expected, happiness has a quadratic relationship with age, initially decreasing, and then increasing monotonically after 49 years of age. (Figure 1) Studies in advanced industrial economies find a similar relationship, although the low point on the happiness curve usually occurs either slightly earlier or slightly later, depending on the country.<sup>12</sup> As in the industrial countries, being married had positive and significant effects, while there was no significant gender effect for Latin America as in the advanced industrial countries (women are slightly happier than men in the U.S., for example).

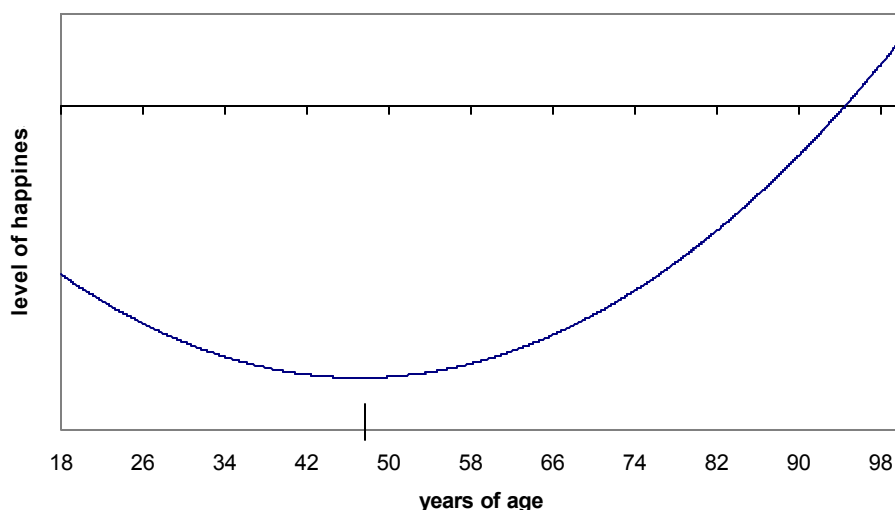
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<sup>10</sup> We explore the determinants of this gap in detail in Graham and Pettinato (2000), which analyzes the Peru panel data as well as a similar perceptions gap found in a panel of Russian households.

<sup>11</sup> The OLS regressions with and without country fixed-effects and the ordered logits with and without country dummies yielded very similar results. Results not in the tables can be obtained from the authors.

<sup>12</sup> DiTella, MacCulloch, and Oswald (1997).

**Figure 1. Happiness by Age Level**  
Latin America, 2000



Also as in the industrial countries, the coefficients for level of wealth are strong, positive and significant on happiness. When wealth is included in the regressions, the coefficient for education level is usually significant and positive but much weaker than the effects of wealth, or insignificant, depending on the regressions used. With wealth and education levels highly correlated, wealth effects consistently dominate in our happiness equations. When we exclude wealth, education levels have positive and significant effects on happiness. Not surprisingly, when we add a variable based on individuals' responses to their satisfaction with their financial situation, higher levels of such satisfaction have positive and significant effects on happiness, in addition to the effects of other variables including wealth.<sup>13</sup>

Being self-employed or unemployed both had significant and negative effects on happiness. When we included country fixed effects (or country dummies for ordered logits), the coefficient on self-employment became insignificant. While being unemployed also has negative effects on happiness in the advanced industrial economies, being self-employed has positive effects. The most plausible explanation is quite intuitive: most self-employed people in the latter are self-employed by choice, while in developing economies, many people are self-employed due to the absence of more secure employment opportunities and live a precarious existence in the informal sector.<sup>14</sup>

<sup>13</sup> Indeed, when we compared the impact of the different variables using beta coefficients, the variable for satisfaction with one's personal financial situation had a much stronger effect than did individuals' level of wealth.

<sup>14</sup> Satisfaction with democracy, something that we discuss later in the paper, is also on average lower among the self-employed in the region. For details on the determinants of job satisfaction in the advanced industrial economies, see Clark and Oswald (1996). For detail on the determinants in Peru, see Graham and Pettinato (2000).

### *The Perceptions Gap*

At our request, the Latinobarometro survey included a number of questions which were designed to capture the extent to which there is a perceptions gap between where people place themselves on the income ladder and where they actually are, and the extent to which that gap is negatively skewed. In our Peru survey, upwardly mobile respondents said that they were doing worse than they actually were, and the gap was greater for those in the middle strata than for the poorest.

We constructed variables based on three questions designed to gauge the gap between objective economic situations and subjective evaluations. The first of these was how individuals evaluated their current economic situation versus that in the past: perceptions of past mobility (PPM).<sup>15</sup> The second variable, the prospects of upward mobility (POUM), was based on how individuals thought their economic situation would be in a year compared to the present. The economic ladder question (ELQ) asked respondents to place themselves on a 10 step ladder representing their society, on which the poor were on the first step and the rich were on the 10<sup>th</sup>. An additional question asked respondents to rank their parents, when they were their age, on the income ladder of their time.

Not surprisingly, many of the same variables that are correlated with happiness are also correlated with PPM and POUM, as was happiness itself.<sup>16</sup> Being wealthy increased the likelihood of individuals having a high PPM ranking, while being unemployed decreased it. Wealth also increased the likelihood of having positive prospects of upward mobility. Rather surprisingly, employment status had no significant effects: unemployed respondents were as likely to have a positive POUM as were employed ones. The POUM captures hope and expectations as well as realistic socioeconomic assessments; presumably even most unemployed people would expect that their future prospects would be better than they are at present.

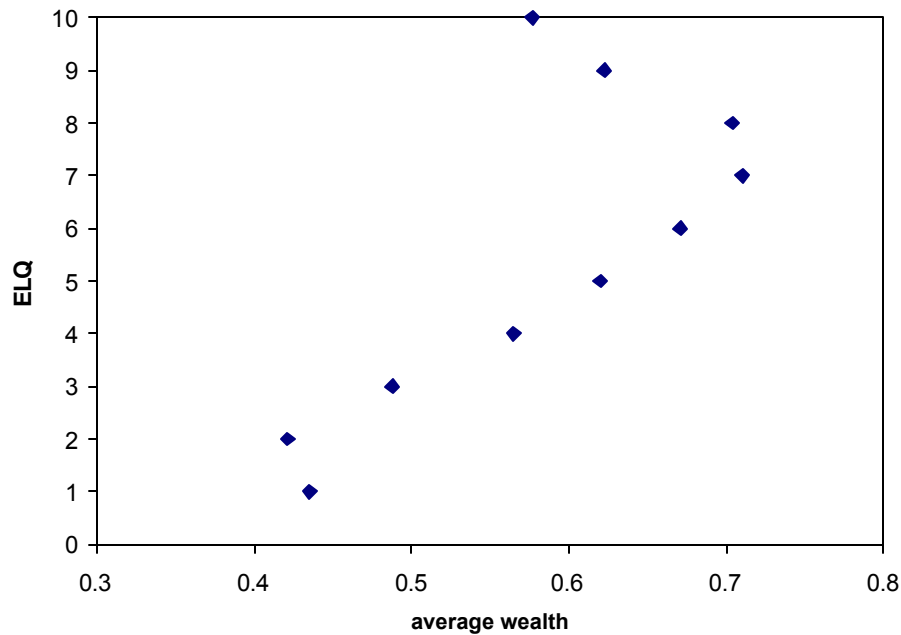
Responses to the ELQ revealed some evidence of a perceptions gap. The mean wealth levels of those that placed themselves on the lowest rung of the ladder were actually higher than those of respondents that placed themselves on the second rung. And at the top end of the ladder, mean wealth levels of those that placed themselves on the top two rungs of the ladder were lower than mean wealth levels of those respondents that placed themselves in rungs 6 through 8. (Figure 2)

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<sup>15</sup> Unlike in our Peru study (see Graham and Pettinato 1999 and Graham and Pettinato 2000), where we had panel data and thus precise economic information at the individual level over time to compare with the subjective assessments, for Latinobarometro we have cross section information about where people are situated in one of five socioeconomic categories, an assessment that is made by the interviewer. We have also constructed a wealth index, based on a series of questions in the survey about household ownership of consumer goods ranging from indoor plumbing to cars and refrigerators. This was calculated as a simple average of the individual household possession/characteristics. A PCA-based wealth index yielded virtually identical results (the correlation among the two was 99%). Details on the wealth index are in Graham and Pettinato (1999).

<sup>16</sup> Regression results are available upon request from the authors.

**Figure 2. Average Wealth by ELQ Response**  
Latin America, 2000



While not exactly comparable to our previous study, which is based on panel data, this does suggest that there are similar gaps: those who place themselves on the bottom of the ELQ ladder are, on average, underestimating their actual relative wealth, and those who place themselves on the top of the ladder overestimate their wealth.<sup>17</sup> Where respondents are on the income ladder and who their reference group is seems to influence how they evaluate their economic situation.<sup>18</sup>

These subjective evaluations, meanwhile, have effects on happiness. Positive rankings on all three of the subjective well-being variables had positive and significant effects on reported life satisfaction.<sup>19</sup> (Appendix Table 1) Ranking oneself higher on the income ladder than one ranked his or her parents also had positive and significant effects on happiness. One caveat is that the direction of causality is not clear, as happier people are also more likely to have positive rankings on all three of these variables.

Regardless of causality, such perceptions gaps, in addition to being of academic interest, may also have implications for individuals' future economic behavior. A number of psychological studies in Australia and the United States, for example, find that there

<sup>17</sup> It is possible that some of this result is driven by standard bias, i.e. those respondents that give extreme responses are also more likely to be incorrect in their assessments.

<sup>18</sup> As in Hirschman's well known "tunnel effect, people's evaluations of their own progress seem to be very much influenced by how much those around them are progressing, and frustration arises when everyone else seems to be moving faster. Hirschman (1973) draws an analogy to the lanes in a traffic jam.

<sup>19</sup> Using an OLS regression with standardized beta coefficients we found that the ELQ variable had stronger effects than the PPM variable.



are positive effects of happiness on future incomes.<sup>20</sup> And, at least in theory, concern for relative income differences can lead to “non-rational” or non-optimal behavior, such as conspicuous consumption rather than investing in children’s education. In practice, we have only anecdotal evidence of this kind of behavior in the region.<sup>21</sup>

### *Macroeconomic Trends, Pro-market Attitudes, and Happiness*

The linkage between macroeconomic policies and individuals life satisfaction or happiness is complex, due to the strong influence of demographic and other micro-level variables. Still, as is discussed above, Oswald and colleagues find that, above and beyond the effects of the usual demographic variables, such as age, gender, and employment status, inflation and unemployment have negative effects on happiness in both the U.S. and the U.K.<sup>22</sup> It is quite plausible that macroeconomic trends have significant effects on individuals’ life satisfaction in the emerging market countries, where far reaching changes in the policy framework and in macroeconomic outcomes, such as the stabilization of high levels of inflation, are part and parcel of the reform process.

Evaluating the effects of market reforms in general on life satisfaction is more difficult than capturing the isolated effects of inflation or unemployment, in large part due to difficulties in evaluating individual countries’ progress on reform. Reform indices compiled at particular points in time, such as those of Lora and Londoño (1998) and Morley et al (1999) are useful tools for gauging the extent to which the policy framework has changed during a fixed period of time. They are far less effective, however, in gauging the effectiveness of the policies implemented. They also have a time-lag problem. Chile, for example, which has gone further than most countries in the region in implementing reforms, usually scores quite low on these indices, as it implemented most of its reforms prior to the usual period for evaluating the reform record in the region (1985-95).

This time lag issue is particularly pertinent to our public opinion analysis. A number of studies find that publics tend to be more strongly in favor of reform early on in the reform period, when the collective memory of economic crisis and high inflation in particular is strong.<sup>23</sup> As reforms are consolidated, and this memory fades, public are more likely to pay more attention to distribution issues. In earlier work, based on a question in the 1998 Latinobarometro about respondents favoring more productivity or

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<sup>20</sup> In the U.S. these effects are moderated by parents’ incomes, i.e. the effects are stronger for individuals from economically advantaged backgrounds. See Diener and Biswas-Diener (1999); also Argyle (1999), and Kenny (1999).

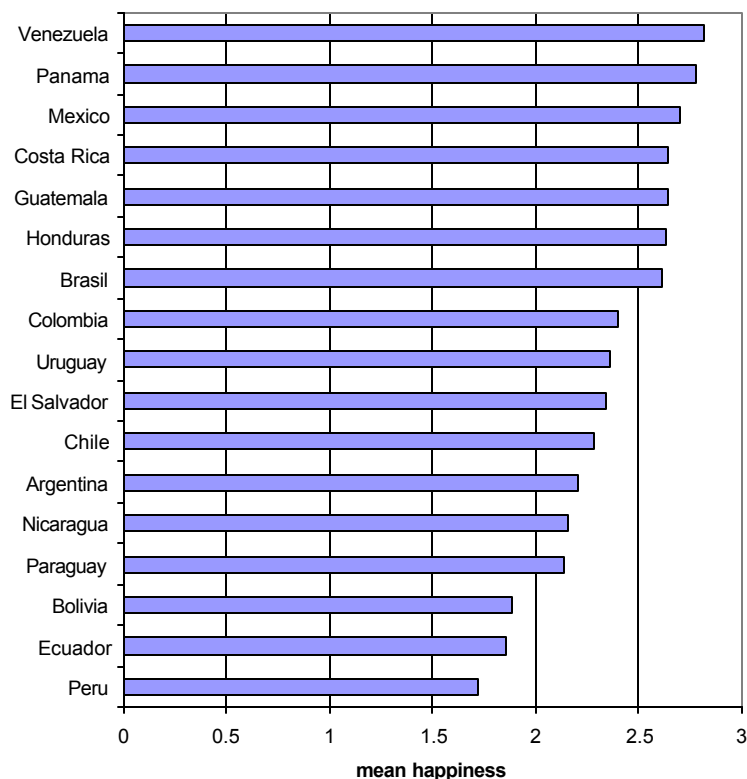
<sup>21</sup> A number of isolated studies have found that high school students – and often the best students - are dropping out of school prior to completion because they do not have the resources necessary to attend university, and with a high school degree cannot break out of their parents occupational category. At the same time, they are readily able to find employment and purchase consumer goods without a secondary school degree. Author’s interview with Marta Lagos, who carried out an education survey for UNICEF in Chile, and for Brazil, see Perlman (1999).

<sup>22</sup> See DiTella, MacCulloch, and Oswald (1997).

<sup>23</sup> See, for example, Graham and Pettinato (1999); Stokes (1996); Graham, Grindle, Lora, and Seddon (1999).

more redistribution as key to their country's getting ahead, we found that respondents in poor countries, most of them earlier on in their process of reform, were more likely to favor productivity. In wealthier countries, where reforms are more consolidated (and social welfare institutions are more developed), respondents are more likely to favor redistribution. Overall, 44% of respondents in the sample favored redistribution, while a majority, 53%, favored productivity.<sup>24</sup>

**Figure 3. Average Happiness levels by country**



These factors combined may explain our statistical findings. We found that the effects of both our reform index (status of reforms in 1995) and change in reform index (change in reforms 1985-95) were both negative and significant on happiness.<sup>25</sup> Yet if one looks at average happiness levels by country – which does not account for differences in attitudes among individuals within countries - the results demonstrate no distinguishable relationship with reform progress. As is shown in Figure 3, some of the strongest reformers, such as Peru, have very low average happiness levels, and others, like Mexico, have high average levels. And some of those countries with the worst reform records in the region, such as Venezuela, have the highest happiness levels, while others with poor

<sup>24</sup> This stands in sharp contrast to Russia, where 75% of surveyed respondents favor restricting the incomes of the rich (discussed below).

<sup>25</sup> Because of the mixed and largely insignificant nature of these results, we do not report them in the appendix. Interested readers should contact the authors directly.

records, such as Ecuador, have very low happiness levels. Happiness levels in some of the most successful reformers, such as Chile and Uruguay, were moderate to high.

In contrast to aggregate country level indices of reform, individual respondents' attitudes about the market were positively correlated with happiness.<sup>26</sup> In other words, controlling for other variables, such as income and age, while using country fixed-effects or dummies, individuals with pro-market attitudes were, on average, happier than those who did not favor market policies. (See Appendix Table 2) Not surprisingly, wealth levels and education levels had positive and significant effects on pro-market attitudes (Appendix Table 4).

When we look at the inverse relationship, we also find that happier people are more likely to be pro-market, so we have the usual problem of establishing the direction of causality. It may well be that happier individuals are more likely to cast whatever policy environment they live in a favorable light. A brief look at the effects of macroeconomic trends on pro-market attitudes, however, suggests that there is some variance in attitudes which is not explained by personal attributes or character traits.

Controlling for the usual demographic variables such as age, income, and education, we found that the inflation rate had positive and significant effects on pro-market attitudes, while the effects of the unemployment rate were insignificant. Thus people that live in countries with high inflation rates, (at the time of the survey Venezuela and Ecuador were the two countries with double digit inflation rates) are more likely to express favorable attitudes towards the market.<sup>27</sup> This supports our timing of reform hypothesis: that people are more likely to favor reforms when the costs of not reforming are immediately obvious, or still prevalent in the collective memory.<sup>28</sup>

Interestingly enough, while the unemployment rate was insignificant, concerns about unemployment (which were captured in a separate question about how much respondents feared losing their job in the future) had positive and significant effects on pro-market attitudes. The rate of unemployment may have weak effects because open unemployment rates are quite low for most Latin American countries. In the absence of unemployment insurance very few people can "afford" to be unemployed, but rather are underemployed and/or in the informal sector. Thus the effects of concerns about unemployment are stronger than the actual rates.<sup>29</sup> Concern for inflation, meanwhile, was insignificant. It is

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<sup>26</sup> The pro-market index was constructed on the basis of how individuals answered three questions about their support for privatization, price liberalization, and the market economy. Each question had four possible answers, which were equally weighted and normalized on a 0 to 1 scale to construct the index.

<sup>27</sup> Mean pro-market responses are the highest in the region in Venezuela, and also among the highest in Ecuador.

<sup>28</sup> Kurt Weyland uses prospect theory to evaluate voters' tolerance for difficult reform measures, and finds that they are much more likely to do so when future prospects seem better than the current conditions, and that they become much more conservative and status quo once better conditions are established. See Weyland (1998).

<sup>29</sup> A possible econometric explanation for this the problem—the Moulton bias—that stems from including one or more aggregate variables in a regression based on individual level variables.

likely that the effects of real inflation rates outweigh the effects of concern for inflation in the few countries where inflation is high.

As in the case of pro-market attitudes, concern for inflation and unemployment and actual rates had different effects on happiness. While being unemployed has significant and negative effects on happiness, expressing concern about unemployment, has no significant effects. The actual rate of inflation had significant and negative effects on happiness, similar to what Oswald and colleagues find for the U.S. and the U.K. This contrasts with the positive effects that inflation had on pro-market attitudes. This makes intuitive sense: living with high inflation has substantial costs in terms of well being for most people, and is therefore likely to make individuals favor market policies as a way to reduce inflation. At the same time, as long as the inflation continues, it is likely to reduce people's subjective well being. Concerns about inflation had no significant effects.

### *Market Attitudes and Democracy*

One of the most difficult questions facing social scientists in an age of dual transitions to democracy and to the market is the relationship between these two trends. A wide body of literature has explored these relationships, with some proponents arguing that progress in one area (democracy or market reforms) must logically precede the other, while others argue that the two trends are self-reinforcing.<sup>30</sup> We by no means attempt to take on these difficult questions here. Our findings, however, may provide some insights for the debate.

Our Latinobarometro sample had two pertinent questions pertaining to democracy. One was whether or not democracy was preferable to any other form of government. The other inquired about the respondent's degree of satisfaction with democracy, with four possible answers: not at all satisfied, not very satisfied, satisfied, and very satisfied. When we examined the effects of these two variables on happiness, controlling for the usual demographic variables and for country fixed effects, we found that satisfaction with democracy was correlated with higher levels of happiness, while preferring democracy to other forms of government had no significance. We then included pro-market attitudes in the regression, and the effects of satisfaction with democracy remained positive and significant (See Appendix Table 2). The combined positive effects of pro-market attitudes and satisfaction with democracy on life satisfaction give us some cause for guarded optimism about a reinforcing virtuous circle.

These findings are in keeping with those of Ronald Inglehart who, relying on data for the OECD countries from the World Values survey for the 1970's and 1980's, finds that at the aggregate country level both political satisfaction and life satisfaction are correlated with stable democracy. He finds that the effects of the latter are stronger, however, as life satisfaction trends within developed countries are fairly stable over time and seem to be correlated with other traits such as interpersonal trust, while political satisfaction is more likely to reflect public attitudes about particular governments.<sup>31</sup>

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<sup>30</sup> For a number of different views and approaches on this topic, see Przeworski (1991); Haggard and Webb (1994); Haggard and Kaufman (1995); Graham (1998); and Carothers (1999).

<sup>31</sup> Inglehart (1988).

Looking more closely at the determinants of pro-democratic attitudes and satisfaction with democracy, we find that wealth and education levels have no significant correlation with satisfaction with democracy, but have a positive and significant correlation with preferring democracy as a system. (Appendix Table 3) This is not surprising, in part because of the correlation between life satisfaction and political satisfaction, and in part because of the expected effects of education on political attitudes. Being self-employed has insignificant effects on preference for democracy, but it has negative and significant effects on satisfaction with democracy. One can imagine that a precariously employed individual in the informal sector might prefer democracy as a system, but not be particularly satisfied with how the government (or the economy) is performing.

### **A Comparative Look: Some Evidence from Russia and the U.S.**

For some but by no means all of the questions above, we were able to get some comparable data for Russia and the U.S. The RLMS, which provides panel data for approximately 2000 households in Russia for 1995-1998, has comparable information with which to address some of the issues raised above. Among others, the survey included a life satisfaction question comparable to the one in the Latinobarometro.<sup>32</sup>

We found that the determinants of happiness in Russia were very similar to those for Latin America. (Appendix Table 5) Not surprisingly, income has positive and significant effects on happiness, which, as in the case of Latinobarometro, seem to outweigh the effects of education level. Rather surprisingly, and in contrast to Latin America and the advanced industrial countries, being married did not have any significant effects on happiness in Russia. Men, meanwhile, were happier than women in Russia, in contrast to Latin America, where there was no gender effect. Fear of losing one's job had significant and negative effects, while being employed had no significant effects in either direction. (The percent of the sample formally registered as unemployed was less than 1%.)

We also looked at the effects of the variation in incomes (income mobility, using 1992 rubles) between 1995 and 1998 on happiness. While in general, variations in income had no significant effects on happiness, when we used the percentage change in log-income rather than in absolute levels of income in the regressions, we found strongly positive and significant effects (See Appendix Table 5). This logarithmic effect suggests that the same income percentage change has larger effects on subjective well being for those at the bottom of the income ladder; i.e. absolute income changes matter more for the poor, while after a certain absolute standard is met, relative income differences matter more.

These findings run in the same direction as those from our Peru survey, in which individuals higher up the income ladder were less satisfied with their income gains than were those lower down the ladder whose gains were smaller. Indeed, when we compare respondents' assessments of their past progress from the Peru and Russia panels, we find that a very similar percentage of the most upwardly mobile individuals in both samples -

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<sup>32</sup> More information and access to data on the RLMS can be found in [www.cpc.unc.edu/projects/rlms/](http://www.cpc.unc.edu/projects/rlms/).

defined as having a 100% or more increase in total (not log) income - assessed their progress as “negative” or “very negative” (58% in Peru and 65% in Russia).<sup>33</sup>

We looked at the effects of perceptions of past progress, expectations for the future, and notional societal status on happiness. As in Latin America, evaluating one’s present situation in a positive light compared to the past (PPM), having positive prospects for the future (POUM), and placing oneself higher on the 9-step societal income ladder (ELQ) all had positive and significant effects on happiness.<sup>34</sup> These perceptions, in turn, seem to affect attitudes about redistribution. Research by Ravallion and Loshkin suggests that there is less support for redistribution among respondents that have positive assessments of their subjective well being, and, inversely, support for redistribution is high among those who fear that their income will fall in the future.<sup>35</sup>

As in Latin America, having a pro-market attitude had positive and significant effects on happiness in Russia, suggesting that people in both regions who favor the ongoing turn to the market are in general more satisfied. In Russia there was also a question about whether or not respondents favored restricting the incomes of the rich. Not surprisingly, having a pro-market attitude had significant and negative effects on the likelihood of respondents supporting redistribution, as did having positive prospects for the future (a high POUM). Age, meanwhile, was positive and significant on restricting the rich, with no quadratic relationship, suggesting that support for restricting the rich increases monotonically with age in Russia.<sup>36</sup>

We did not have information about democratic attitudes for Russia that is comparable to what we have for Latinobarometro.<sup>37</sup> One question in the RLMS asks respondents whether or not they want to return to pre-Gorbachev (*pre-perestroika*) times. While recognizing that this is at best a very crude indicator, we included this question in some of our regressions as a proxy indicator of respondents’ preference for democracy over communism and found that not wanting to return to communism, like having a pro-market attitude, had positive and significant effects on happiness. Again, the direction of causality is not clear, and it may well be that happy people are supportive of whatever policy environment they live in.

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<sup>33</sup> These findings are discussed in much greater detail in Graham and Pettinato (2000).

<sup>34</sup> Using a standard OLS regression and normalizing the variables with beta weights, the beta weights of all three subjective indicators: PPM, POUM, and ELQ, were all higher than that of log income or fear of unemployment. The ELQ for Russia, meanwhile, has 9 steps.

<sup>35</sup> Ravallion and Loshkin (1999). Another trend which may affect public attitudes about redistribution and individual economic status is reported by Milanovic and Jovanovic (1999). Expectations in Russia are falling, and that the subjective poverty line, i.e. the amount of income people believe they need to make ends meet, has actually declined since 1995. Thus it is more “normal” to consider oneself poor or near poor. Another feature of the Russian situation is that those in the poorest income decile live primarily in what Gaddy and Ickes (1998) have termed the virtual economy: the large sector of the Russian population that lives largely outside the monetary economy, growing their own food and receiving wages in kind rather than in cash.

<sup>36</sup> For details on regressions not reported in the Appendix, please contact the authors directly.

<sup>37</sup> There is, of course, more detailed work on democratic attitudes in Russia, based on other survey data. See, for example, Whitefield and Evans (1996) and Rose and McAllister (1996).

Still, there is some evidence of a virtuous pro-democracy, pro-market, happiness circle in Russia, as in Latin America. In Russia, however, that circle is much smaller: 45% of respondents wanted to return to pre-*perestroika* days, while 75% of all respondents favor restricting the rich. Ravallion and Lokshin find that a similar percentage - 72% - of Russians favor redistribution, and that it is not only the rich that oppose redistribution, but also the upwardly mobile poor. Regardless, as downward income mobility was the predominant experience, support for redistribution remains very high in Russia.<sup>38</sup> In Latin America, only 44% of respondents favor redistribution over productivity, and 63% of all respondents think democracy is preferable to any other political system. In contrast to Russia, there has been a great deal of upward as well as downward income mobility in Latin America, which in part explains differences in attitudes about redistribution.

### *The United States*

In an effort which is incomplete but provides a useful comparative reference from an advanced industrial economy, we looked at some similar questions for the U.S. The cumulative database available of the General Social Survey (GSS) covers 30,000 individuals for the years 1972-93, and also includes questions about life satisfaction and individuals' satisfaction with their current income situation.<sup>39</sup> Like Latinobarometro, the GSS is not a panel. Because income was only surveyed for part of the sample for each year, we could only examine the effects of income for specific segments of the sample at a time. Still, when we restrict the sample to each year for which income is included – which limits the number of observations to about 8,000 - we find, not surprisingly, positive and significant effects on income on happiness, with the effects and direction of the other variables remaining constant.

As in most other countries, happiness in the U.S. shows a quadratic relationship with age, with the bottom of the curve being at 47.5 years, and then happiness increasing monotonically thereafter (we included year fixed effects as the combined sample is a time series). Being married has positive and significant effects on happiness, and being unemployed has significant and negative effects. Not surprisingly, being satisfied with one's personal economic situation had strong and positive effects. When we added a variable which accounts for the perception of changes in one's economic situation (PPM), we found that it also had significant and positive effects. (Appendix Table 6)

We also looked at the determinants of satisfaction with one's personal economic situation, and found that there was a quadratic relationship with age, with age 29 as the turning point. Not surprisingly, the effects of happiness were significant and positive on economic satisfaction. Here again there is the inevitable question of causality: are happier people more likely to evaluate their situation positively, or does a positive economic situation make people happier. The answer is probably both. As noted above, several studies find that happiness has some linkages to future economic success.<sup>40</sup>

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<sup>38</sup> Ravallion and Loshkin (1999).

<sup>39</sup> This is the same data set that is used by Oswald and colleagues to analyze happiness in the U.S.

<sup>40</sup> Diener and Biswas-Diener (1999).

Finally, we also tried to find evidence of a perceptions gap. While there is no economic ladder question in the GSS, there is a question which asks respondents to place themselves in a particular class. Five percent of the sample placed themselves in the lower class, 45% in the working class, 45% in the middle class, and 3% in the upper class. While a sociological analysis of the class composition of the U.S. is well beyond the scope of this paper, the objective data on income trends in recent years suggests a real shrinking of those in the middle income categories and a skew towards the upper tail.<sup>41</sup> According to an income-based measure of the middle class - the population group with incomes between 75 and 125% of median income - only 24% of the U.S. population was in that category in 1999, and that group held only 17.6% of national income. And both population and income shares were smaller than they were at the beginning of the 1990's.<sup>42</sup> The skew on responses on what class or category people place themselves in, however, seems to be towards the middle rather than towards the tails.

While the comparison is extremely crude, there is an apparent contrast with both Latin America and Russia, where the trend is for respondents to underestimate their income and position on the national income ladder and/or to consider themselves poor. One possible explanation for the U.S. trend is the extent to which the myth of the U.S. as the land of opportunity still holds for the majority of Americans, even those well below the mean income. Indeed, many years ago deTocqueville posited that the prevalence of this myth was one of the important underpinnings of American democracy.<sup>43</sup>

More recently, Benabou and Ok posit that the continued prevalence of this myth is the explanation for Americans' reluctance to vote for redistribution (even as empirical data show that this myth is less and less a reality).<sup>44</sup> They show theoretically how even when a large majority is below the mean income, they will not vote for redistribution if they believe they will be above it in the future. Piketty shows how past mobility experiences can have persistent attitudes towards redistribution at given current incomes.<sup>45</sup>

In Latin America, where neither the myth nor the reality of social mobility is as prevalent as in the U.S., and where macroeconomic volatility is combined with inequality driven by high incomes at the top of the distribution and small differences between those in the middle and the poor, a plausible political economy implication is that support for

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<sup>41</sup> See, for example, McMurrer and Sawhill (1998); Burtless (1999); Krugman (1992); and Solon (1992).

<sup>42</sup> The population share fell by 9.2% from 1992, while the income share fell by 11.6%. For more detailed discussions of the measure and concept of the middle class, see Birdsall, Graham, and Pettinato (2000).

<sup>43</sup> DeTocqueville cited in Mayer (1969).

<sup>44</sup> For trends in mobility and opportunity in the U.S., see McMurrer and Sawhill (1998). On redistribution and voting, see Benabou and Ok (1998).

<sup>45</sup> Piketty (1995). See also Clifford and Heath (1993). Lindert, meanwhile, finds that differences among industrial countries' political tendencies to spend on social transfers are largely explained by income skewness: the size of the gap between the rich and the middle versus that between the middle and the poor. A wider lower gap means less affinity of the middle class for the poor, and therefore less social spending. The U.S., which has a large gap between the middle and the poor, has the lowest level of social spending of the countries in the sample. See Lindert (1996).



redistribution should be very high.<sup>46</sup> Yet reported support for increasing redistribution in Latin America is lower than for increasing productivity (44% versus 53%); support for redistribution is higher in wealthier than in poorer countries; and there is no systematic electoral trend in the region in favor of increased redistribution.<sup>47</sup> In Russia, in contrast, where there is a similar negative skew on perceptions, a much higher percentage of respondents (75%) favor increased redistribution.<sup>48</sup>

While this does not imply that there is not support for redistribution Latin America, nor that the region could not benefit from more efficient and effective redistributive policies, it suggests that the perceptions gap does not necessarily translate into support for redistribution. The ramifications of these perceptions gaps for future economic behavior is a subject for a next stage of research. This stage will entail collecting new and new kinds of data, as well as enhancing tools and methods for analyzing happiness and other subjective conditions and trends.

### Conclusions

We explored three general propositions in this paper. Recognizing the limitations of working with subjective survey data, we found consistent patterns in the effects of both demographic and macroeconomic trends on individual assessments of subjective well being, and in turn, of those assessments on a range of other public attitudes. For the most part, these patterns support our propositions.

The first proposition was that in Latin America, the socio-demographics of happiness were similar to those of the advanced industrial countries. Our findings found that this was indeed the case, and Latin America looks remarkably similar to the advanced industrial economies. Russia also demonstrates similar trends, although both gender and marriage had slightly different effects than in Latin America. While these findings are hardly surprising, they contribute to the nascent research on happiness, which, to date, has not covered developing countries in detail.

Our second proposition was that relative differences matter more than absolute ones, and that there is a marked perceptions gap between individuals' objective economic situation and their subjective evaluations of that situation. We found that such a gap indeed exists in Latin America, with respondents that were slightly better off than the

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<sup>46</sup> For what little evidence there is on income mobility in Latin America, see Behrman, Birdsall, and Szekely (1999); and Birdsall, Graham, and Pettinato (2000). See also Dahan and Gaviria (1999). This nascent literature suggests that reforms may enhance mobility and reduce the strong effects of family background on children's occupational and education outcomes, in particular by improving financial markets and schools. And while some evidence suggests that there is a great deal of movement up and down the income ladder, it is not yet clear how much of it is permanent improvements in income and how much of it is "churning", i.e. short term movements. For an account of the persistence of family background on educational outcomes, see ECLAC (2000).

<sup>47</sup> Within countries in the region, the relationship is as one would predict: poorer people are more likely to favor redistribution than are richer ones. Regression results available on request from the authors.

<sup>48</sup> As is discussed above, the questions on redistribution are not exactly the same in the two surveys.

poorest (those in the first decile) much more likely to consider themselves poor than were those who actually were at the bottom of the income ladder.

The logarithmic nature of the effects of variations in income on happiness in Russia also support the importance of relative differences. Absolute income increases enhance life satisfaction for those at the bottom of the income ladder, but not for the sample as a whole. As people move up and have more absolute income, effects seem to be driven more by how changes in their income compare to those of others in their reference group than by absolute income losses or gains.<sup>49</sup> Our findings in our earlier Peru study also support this conclusion.

Perceptions in turn had seem to have effects on happiness: having a higher ranking on each of our perceptions indicators in both Latin America and Russia - perceived past mobility, prospects of upward mobility, and position on the economic ladder question – were positively correlated with happiness. A number of studies find positive links between happiness and future economic performance. Our own research finds that happier people are more likely to have pro-market and pro-democratic attitudes. Thus it seems plausible to posit that the strong negative skew in the perceptions of many respondents has at least some implications for the sustainability of support for market policies and, possibly, for democracy in these countries.

Our third proposition was that, in addition to the usual demographic variables, macroeconomic trends such as inflation and unemployment have significant effects on subjective well being, and that these effects are mediated by the timing and stage of market reforms in particular countries. We found that in Latin America, as in the United States and the United Kingdom, inflation had significant and negative effects on happiness. Concern for unemployment also had significant and negative effects in Latin America, which is not surprising given the prevalence of insecure informal sector jobs and the absence of adequate unemployment insurance. Fear of unemployment also had negative effects on happiness in Russia.<sup>50</sup>

We could not find any discernible evidence of the general effects of market reforms on happiness. Among other things, evaluating countries' reform progress is extremely difficult and fraught with time inconsistency problems. We did find that individuals' having a pro-market attitude had significant and positive effects on happiness in both Latin America and Russia. Individual satisfaction with democracy had an additional and positive effect on happiness in Latin America. In Russia, not wanting to return to socialism – which is a very weak proxy for democratic attitudes - had a positive and significant effect on happiness. As cautious optimists we posit that there may be a virtuous circle for some respondents, in which pro-market attitudes, satisfaction with democracy, and life satisfaction reinforce each other.

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<sup>49</sup> Our findings from our panel data and perceptions survey in Peru also run in this same general direction. See Graham and Pettinato (1999).

<sup>50</sup> The RLMS did not include a question about inflation.

The potential of such a virtuous circle, however, will depend on its overall size and its applicability to a wide majority of the population. Positive rankings on all of these indicators are strongly linked to income and/or wealth levels, and there was a very strong negative skew on the perceptions of past mobility of those near but not at the bottom of the income ladder. A number of theoretical and empirical studies suggest that past mobility experiences can result in persistent political attitudes. This suggests that there is a role for policies that can enhance mobility and make progress on national income ladders more possible for those on the middle and lower rungs, and generate a more widely held belief that upward mobility is a probability rather than a remote possibility.

We do not at this point have any concrete evidence of the longer term effects of the perceptions gaps that we find. A more definitive interpretation of the feedback effects of these perceptions gaps on economic and political behavior is the subject of a next stage of this research, which will require, among other things, new kinds of data. A next stage will also entail addressing the issue of the direction of causality. Happier people in our surveys were also more likely to have high rankings on most of our perceptions indicators, and it is plausible that a certain percentage of respondents will consistently have negative (or positive) perceptions, regardless of their economic situation and the broader macroeconomic and political framework. How strong these effects are vis-à-vis those of macroeconomic trends and the political economy framework remains to be seen, and is a question which must be addressed by psychologists as well as social scientists.

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### **Data Sources**

Latinobarometro Survey, 1998 and 2000.

Russia Longitudinal Monitoring Survey, 1995 and 1998/99.

General Social Survey, Cumulative file from ICPSR.

## Appendix

### EMPIRICAL ANALYSIS OF PERCEPTIONS

In order to assess the determinants of happiness in our Latin American sample we used a model commonly used in the literature on happiness and wellbeing.

$$HAPPY = f ( AGE, GENDER, MARITAL, WEALTH, EDUC, OCCUP, COUNTRY\_FX ) \quad (1)$$

The results are listed in Table 1. We initially examine this model with a linear regression using country fixed-effects (column 1). Even though the results confirm the empirical literature on happiness and satisfaction, a regular Ordinate Least Squares (OLS) model is not the appropriate estimation since our dependent variable is categorical.<sup>51</sup> To solve this problem we adopt an Ordered Logit estimator that produced results listed in column 2. Country dummies are then introduced to capture some of the unobserved determinants of happiness that originate from physically living in a particular country (column 3). The results—coefficients significance and signs—are similar to those obtained with the fixed-effects regression.

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<sup>51</sup> *HAPPY* can assume four ordered categories in response to the question “How satisfied are you with your life?”: non at all satisfied, moderately satisfied, satisfied, and very satisfied. The values of *HAPPY* for these four responses are respectively 1, 2, 3, and 4.



**Table 1. Happiness, Socio-Demographics, and Economic Perceptions (Latin America, 2000)**

Indep. variables	1		2	
	Coeff.	z-stat	Coeff.	z-stat
age	-0.006	-1.014	-0.014	-2.329
age <sup>2</sup> / 100	0.008	1.216	0.019	2.795
Gender (male=1)	0.058	1.797	0.033	1.002
log(wealth)	0.463	12.618	0.264	6.645
Years of education	-0.055	-5.337	0.011	0.983
Marital (married=1)	0.087	2.617	0.103	3.043
Employment Status*				
selfemployed	-0.098	-2.075	-0.040	-0.836
public employee	0.013	0.218	-0.034	-0.545
private employee	0.019	0.367	0.025	0.468
unemployed	-0.323	-4.599	-0.312	-4.355
retired	-0.074	-0.999	-0.088	-1.160
student	-0.039	-0.592	0.030	0.457
PPM	0.418	17.917	0.380	16.010
POUM	0.345	15.838	0.341	15.263
ELQ	0.174	16.705	0.159	15.043
<i>R</i> <sup>2</sup> or pseudo- <i>R</i> <sup>2</sup>	0.041		0.070	
Number of obs.	15,804		15,804	

**Notes:**

The first model is an Ordered Logit estimation; the second is an Ordered Logit with country dummies (not shown).

PPM is Perceptions of Past Mobility; POUM is Prospects of Upward Mobility; ELQ is Economic Ladder Question.

We also ran these logits with PPM, POUM, and ELQ as dummies, with consistent results which are available on request.

\* Comparison omitted group is house-wives (-husbands)

Source: Authors' calculations from *Latinobarometro 2000*.

More estimations based on equation (1) were run. The most notable ones are summarized in Table 2, where, together with the usual demographic variables, attitudes towards the market economy and democracy are considered.

**Table 2. Happiness, Markets, and Democracy, Latin America 2000**

Dep. Var. Happiness		
Indep. variables	Coeff.	t-stat
age	-0.017	-3.053
age <sup>2</sup> /100	0.015	2.388
Gender (male=1)	0.004	0.121
log(wealth)	0.393	9.561
Years of education	0.034	3.081
Marital (married=1)	0.106	3.052
Pro-market attitudes	0.546	8.791
Preference for democracy	-0.033	-1.002
Satisfaction with democracy	0.317	16.787
<i>Pseudo-R<sup>2</sup></i>	0.059	
<i>Number of obs.</i>	14,161	

Ordered logit using country dummies (not shown).

Source: Authors' calculations based on Latinobarometro 2000

**Table 3. Determinants of Democratic Attitudes, Latin America 2000**

Dep. Variable -->	Satisfaction with Democracy		Preference for Democracy	
Indep. variables	Coeff.	z-stat	Coeff.	z-stat
age	-0.017	-2.876	0.021	3.173
age <sup>2</sup> /100	0.024	3.569	-0.014	-1.848
Gender (Male=1)	-0.025	-0.704	0.143	3.634
log(wealth)	0.054	1.360	0.184	4.290
Years of education	0.003	0.634	0.043	8.474
Employment Status*				
selfemployed	-0.143	-2.898	-0.029	-0.539
public employee	0.122	1.727	0.108	1.350
private employee	-0.061	-1.088	0.088	1.413
unemployed	-0.137	-1.856	0.064	0.799
retired	-0.122	-1.532	0.080	0.880
student	-0.092	-1.381	0.323	4.328
<i>Pseudo-R<sup>2</sup></i>	0.065		0.062	
<i>Number of obs.</i>	14,357		14,879	

Note: Calculated using respectively Ordered Logit and Logit estimators and country dummies (not shown)

\* The omitted category is house-wives/husbands

Source: Authors' calculations using Latinobarometro 2000.

For Table 4 we used a linear regression model with country fixed-effects to capture the determinants of pro-market attitudes.<sup>52</sup>

**Table 4. Determinants of Pro-Market Attitudes, Latin America 2000**

Dep. Variable	PROMKT	
Indep. variables	Coeff.	t-stat
age	-0.003	-3.459
age <sup>2</sup> / 100	0.003	3.185
Gender (male=1)	0.017	3.260
log(wealth)	0.055	9.476
Years of education	0.002	2.226
Marital (married=1)	-0.004	-0.745
<b>Employment Status</b>		
selfemployed	0.001	0.137
public employee	-0.009	-0.861
private employee	0.000	0.044
unemployed	-0.021	-1.894
retired	-0.003	-0.205
student	-0.030	-2.938
Intercept	0.575	24.207
$R^2$	0.014	
Number of obs.	11,928	

Note: OLS calculated using country fixed effects.

Source: Authors' calculations based on Latinobarometro 2000.

### **Mobility and Happiness. An Example**

For this section we have assessed the impact of changes in income over individual happiness. The data used for this analysis is the 1999 Russian Longitudinal Monitoring Survey. The income variation is calculated using the change of household per capita income observed between 1995 and 1999. The variation used is not the common percentage change in income, but the percentage change in log-income. The following example is an attempt to clarify the different effects of using log-income vs. income:

Four individuals with different levels of income who experience an identical percentage increase of income (50%) in two different moments in time:

	#1 Poor		#2 Middle Income		#3 Rich		#4 Very Rich	
	y	log(y)	y	log(y)	y	log(y)	y	log(y)
Time 0	2	0.30	20	1.30	200	2.30	2000	3.30
Time 1	3	0.48	30	1.48	300	2.48	3000	3.48

<sup>52</sup> The “pro-market” variable is an index constructed averaging the response given to three questions on market preferences.

Our objective is to show that the same percentage change has a higher impact on #1's utility than on #4's. We then suggest a formulation that allows to capture this difference: the percentage change in log-income.

$$\text{Income-mobility measure for individual } i, \text{ from time } 0 \text{ to } 1 = \frac{\log y_{1i} - \log y_{0i}}{\log y_{0i}} \quad (2)$$

While the simple percentage change in income produced a value of 50% across the board, our new measure produces, respectively, 58 %, 14 %, 8 %, and 5 % for individuals 1, 2, 3, and 4, reflecting the decreasing impact of the same percentage change in income on utility as the initial income level of the individual increases. The results of our regression of log-income variation on happiness (Table 5) reflect this logarithmic effect.<sup>53</sup>

Table 5 shows three ordered logit estimations on happiness: demographics and fear of job loss, mobility—using variation (2) explained above—, and political attitudes. Note that income (or log of income) was excluded from model 2 to avoid multicollinearity with the mobility variable, constructed using log-income.

**Table 5. Happiness in Russia, 1999**

Dep. Variable Happiness	1		2		3	
	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat
age	-0.141	-3.685	-0.052	-2.697	-0.040	-2.027
age <sup>2</sup> / 100	0.155	3.684	0.054	3.040	0.041	2.132
Gender (male=1)	0.396	3.079	0.438	4.365	0.346	3.439
log(income)	0.455	7.261	...	...	0.425	8.096
Mobility*	...	...	1.054	3.299		
Years of education	-0.025	-0.522	0.054	2.360	0.005	0.209
Marital (married=1)	0.030	0.251	0.100	1.063	0.008	0.082
<b>Employment Status</b>						
selfemployed	0.430	1.025	0.525	1.228	0.111	0.301
employee	-0.066	-0.264	-0.137	-0.722	-0.275	-1.540
unemployed	0.965	1.317	-0.737	-2.956	-0.768	-3.244
retired	-0.725	-0.462	-0.630	-2.898	-0.802	-3.837
student	...	...	-0.209	-0.246	-0.033	-0.047
Fear job loss	-0.232	-5.672	...	...	...	...
Pro-democracy	...	...	...	...	0.308	3.354
Pro-market	...	...	...	...	0.283	3.171
<i>Pseudo-R2</i>	0.049		0.017		0.041	
<i>Number of obs.</i>	1,195		2,003		1,942	

\* Calculated as the percentage change in log-per capita household income from 1995 to 1999  
Source: Authors' calculations from Russian Longitudinal Monitoring Survey (various issues)

<sup>53</sup> In our computations the impact of income percentage change on happiness was insignificant, while the log-income percentage change does have a relevant and significant positive impact on happiness.

**Table 6. Happiness in the United States, 1990s**

Dep. Var. Happiness		
Indep. variables	Coeff.	z-stat
age	-0.023	-2.601
age <sup>2</sup> / 100	0.023	2.524
Income category in 1991\$	0.016	2.712
Education level	0.034	3.850
Marital (married=1)	0.765	14.510
Employment Status		
unemployed	-0.467	-3.233
retired	0.097	0.956
student	0.036	0.642
PPM	0.265	7.808
Economic satisfaction	0.606	16.357
<hr/>		
<i>Pseudo-R<sup>2</sup></i>	0.077	
<i>Number of obs.</i>	7,939	

Note: PPM is Perceptions of Past Mobility.

Source: authors' calculations using the 1991-93 General Social Survey