DOES INEQUALITY MATTER TO INDIVIDUAL WELFARE?*

An Initial Exploration Based on Happiness Surveys from Latin America

Carol Graham and Andrew Felton
Economic Studies Program
The Brookings Institution

January 2005

Revised DRAFT

Abstract

The effect of inequality on individual welfare remains a debated question. In Europe and the U.S., inequality seems to signal mobility and opportunity as much as it suggests injustice. We explore its effects in Latin America. We find that inequality has significant effects on well being, making those in the highest quintiles 5% happier than the average and those in the poorest quintile 3% less happy. Our analysis of perceptions of inequality, rank, and opportunity suggests that differences in these realms are at least as important to well being as income inequality. In Latin America, inequality seems to be a signal of persistent advantage for the wealthy and disadvantage for the poor, rather than of future opportunities.

* The authors thank William Dickens, Richard Easterlin, Branko Milanovic, Andrew Oswald, Alois Stutzer, and Peyton Young for helpful comments on earlier drafts.

Does Inequality Matter to Individual Welfare?

An Initial Exploration Based on Happiness Surveys from Latin America

The effect of inequality on individual welfare remains a debated question in economics. It is a topic where strong normative judgements outweigh the existing empirical evidence, and debate is often acrimonious and polarized. For those who interpret inequality as a sign of opportunity and/or of rewards to productivity, it is difficult to accept that there are negative effects. For those that see inequality as a reflection of persistent disadvantage for particular segments of society, it is hard to see positive elements. And for those who are primarily concerned with the fostering of income growth (and perhaps with the reduction of absolute poverty), inequality is beside the point—a "luxury" problem of sorts.

Yet evidence from several empirical studies suggests that relative income differences matter to individual welfare, and in ways which are relevant to economic and political decisions. Relative differences seem to matter in two ways. The first is a levels effect. Two individuals of the same level of income perceive themselves differently if the average wealth of their relevant peer groups is different. There is also a related adaptation effect: as people's incomes rise, so do their expectations. Thus it takes more income to increase their utility the same amount than when their income was at a lower level. This can be explained conventionally by declining marginal utility of wealth. We attempt to show in this paper, however, that relative differences are important as well as absolute differences.

An additional element of inequality—which we know even less about—is inequality *per se*—inequality defined more broadly than in terms of personal finances—on individual welfare. Broader definitions of inequality—such as between groups, among neighbors, and within and across skill and education cohorts—may be as if not more important to individual welfare as financial gaps. Inequality more broadly conceived incorporates, among other things, norms of

equity and views about fairness and redistribution, which vary across cultures and societies.[1] Not surprisingly, accurately measuring this broader inequality is a conceptual and empirical challenge.

An extensive literature examines the effects of inequality on aggregate growth outcomes and explores the possible channels, such as incentives for working and saving. These studies suggest that inequality can have perverse effects on aggregate welfare. Even then, there are mixed results. Barro [2001] finds that inequality is bad for economic growth for countries with per capital GNP's below $5000 but good for growth for countries with GNP's above that level. Birdsall et al [1995, 1997] find that inequality has negative effects on growth for developing countries, operating via channels such as initial asset endowments, savings rates, investments in education, and expectations. Benabou [2000] posits that unequal distributions can lead to a steady state of persistent inequality because political rights as well as economic goods are unequally distributed. These and other studies establish the many channels by which inequality can either be "destructive"—creating disincentives for savings and investments and even for voting—or "constructive" —rewarding productivity and innovation.[2]

Yet studies of aggregate outcomes do not address the issue of the direct effects of inequality on individual welfare, nor the effects of inequality more broadly defined. While there is a rich theoretical literature on the topic, empirical work demonstrating such effects is less

[1] For an excellent description of the role of equity norms in mediating a number of important economic outcomes that markets alone cannot determine, see Young [1995].

[2] Nancy Birdsall and I discuss these two kinds of inequality at length in the introduction to Birdsall, Graham, and Sabot [1998].

common. The findings thus far are mixed, making it difficult to draw more generalized conclusions beyond the particular countries where the studies are carried out.[3]

The recent interest among economists in using surveys of reported well being as a way to gauge individual utility and its relation to a range of economic and social phenomena provides a new tool with which to assess the effects of inequality. Happiness surveys are, of course, not without limitations and biases. [4] Yet they are particularly useful in the study of inequality because it is an area where a revealed preferences approach has limited utility.[5] Take, for example, a poor Bolivian who may be made very unhappy by inequality in his/her country. Even if these effects are very large, short of emigrating, it is hard for him/her to reveal a preferred distribution. Granted, proxies for preferences, such as voting patterns, can provide insights into individuals' preferences about inequality, and several studies have attempted to do just that and have contributed to our understanding.[6] Yet surveys of reported well being provide a direct tool for measuring the effects of inequality on respondents' well being.

Alesina, Di Tella, and MacCulloch (2004), for example, use happiness surveys and rely on country and state-level Gini coefficients to examine the effects of inequality in Europe and the U.S. They find that people have a lower tendency to report themselves happy when inequality is high, controlling for individual income. Yet they also find that reactions to

---

[3] Theoretical studies include the works of Danny Quah; Sam Bowles and Herbert Gintes; Steven Durlauf; Francois Bourguignon; Robert Frank, and Roland Banabou, among others. Earlier works include those of John Rawls and A.C. Pigou. For an excellent summary of many of the issues involved, see Arrow, Bowles, and Durlauf [2000].

[4] For a description of the possible biases in survey research, see Bertrand and Mullainathan [2001].

[5] For a complementary approach which focuses on procedural utility, see Frey, Benz, and Stutzer, [2004].

[6] See, among others, Benabou and Ok [2001]; Thomas Pitketty [1995]; Schwarze and Harpfer [2004], Boeri, Borsh-Supan, and Tabellini [2001]; and Graham [2003]. Acemoglu and Robinson [2002], meanwhile, develop a political economy theory of the Kuznets Curve in which the reduction of inequality depends on a credible threat of revolution by the poor.

inequality vary according to geography, political preferences, and individual wealth.[7] Other studies, based on data for different countries and time periods, find positive effects of inequality on well being.[8]

One explanation for the mixed results is that most of our standard measures of inequality, such as Gini coefficients and 90/10 ratios, do not capture all of the channels through which inequality affects individual welfare. They are aggregate, static measures based on the distribution of national or regional incomes. Gini coefficients provide an aggregate picture, but they do not capture changes in income mobility rates, nor do they change much over time. Chile, for example, is a country which has changed dramatically in the past three decades, both in terms of the structure of its economy and polity, and in terms of social mobility. Yet the Gini coefficient in Chile is roughly the same today as it was in the 1960's [Contreras, Cooper, Herman, and Neilson 2004]. Thus these measures capture some aspects of inequality, but they are less well suited to identifying others, which may depend on contextual variables at much lower levels of aggregation.

In this paper, we explore the effects of inequality on individual welfare using both standard and less conventional measures of inequality. We also attempt to assess the effects of inequality *per se*, and the channels via which it could potentially operate. We build from the existing work in the economics of happiness—and other work on several aspects of inequality—to explore the effects of these different definitions of inequality on the individual welfare—or more specifically the happiness—of a large sample of respondents in Latin America. In its usage of different measures of inequality and its attempts to identify additional affects of inequality *per*

[7] They also find stark differences among different income groups, however (discussed below). See Alesina, Di Tella, and MacCulloch [2004].

se, the paper is by definition exploratory. Because we do not have an exact definition of inequality *per se*, we cannot predict ex ante why it might make people happy or unhappy. Yet we suspect that this less measurable, less well defined element of inequality is precisely what makes people feel strongly about it, either positively or negatively. As one means of exploring this broader concept of inequality (no doubt an imperfect one), we focus on a number of variables which capture respondents' perceptions of rank and status. We also examine how these perceptions vary according to reference group size.

Conceptually, the simple financial definition of inequality can be thought of as a measure of outcomes which reflect different utility functions between labor and leisure and different endowments. Thus those who prefer to work more have more income and those that prefer to work less have less income. The broader definition of inequality *per se*, meanwhile, can be thought of as the differences among people, such as race, family background, location, quality of education, and other factors which can be difficult to measure but that play a major role in determining opportunities and outcomes. In a normative sense, most people would not have deep concerns about the former kind of inequality, while many, although not all, would have concerns about these other sorts of differences and their role in limiting access to opportunity. We rely on happiness surveys to distinguish between the effects of each kind of inequality.

The happiness literature, meanwhile, shows that at some level GDP per capita and happiness are correlated. Yet that research has also shed light on many other dimensions of welfare—such as employment status, health, and social welfare policy—which are both relevant to GDP and matter a great deal to happiness, but which are not captured by GDP. In an analogous manner, the Gini coefficient does not pretend to measure anything broader than

---

[8] See Clark [2003] on Britain and Tomes [1986] on men in Canada. Both of these studies are discussed in

income inequality, along the simple lines described above. Our hope is that in the same way that happiness surveys highlight dimensions of welfare which are related to but distinct from income, they can prove a useful tool for better understanding the many dimensions of inequality and its effects on well being.

I. What We Know About Inequality and Individual Welfare

Richard Easterlin pioneered the economics of happiness with his cross country work, which showed that, after a minimum per capita income level, average happiness levels do not increase as countries grow wealthier over time. His finding has since been corroborated by many others, albeit with some adjustments.[9] Within countries, however, wealthier individuals tend to be happier than poorer ones.

What about inequality then? Much of the literature on the economics of happiness finds that, after basic needs are met, relative differences matter at least if not more than absolute levels to reported well being in many contexts.[10] In other words, in addition to the consistent and positive effects of wealth or income on happiness within countries, most individuals' welfare is affected in some way (positively or negatively) by relative income differences between themselves and a relevant comparator group.

A less explored question is whether inequality *per se* matters. In other words, does relative position matter above and beyond the income effects of the gap between a respondent

---

greater detail below.

[9] Easterlin [1974, 1995, 2001, 2003] used thirty surveys from nineteen countries, including some developing countries. Similar results, or minor modifications of them, have been found by both economists and psychologists. See, among others, Blanchflower and Oswald [2004]; and Diener, Sandvik, Seidlitz, and Diener [1993]. For an excellent review of much of this literature, see Frey and Stutzer [2002].

[10] See Easterlin [1974, 2003]; Diener et al. [1993]; Luttmer [2004]; and Frank [1999]. A recent cross country study by Ball and Chernova [2004], based on the World Values survey, finds that the effects of relative income on happiness are up to four times as great as those of absolute incomes, although the effects of absolute incomes are still positive and significant.

and his/her relevant reference point? And if so, what element of inequality matters? Is it income gaps within societies as measured by the Gini? Is it within group inequalities at a smaller level, such as at that of region or city and town? Is it across groups, such as skill cohorts or races? Is it rank or status?[11] To date, the studies that have tried to explore the direct effects of inequality on well being—via a number of different approaches—have had varied results.

Alesina, Di Tella, and MacCulloch's [2004] study in Europe and the U.S. (states) finds that inequality has generally negative effects on reported well being, but with differences across groups. It has negative effects for the poor in Europe, while in the U.S., the only group that seems to be made worse off by inequality is left-leaning rich people! This supports the intuition behind other studies, which show that a strong belief in exceptional prospects for individual mobility persists across income groups in the U.S. It explains high tolerance for inequality, regardless of substantial evidence suggesting that there is no more mobility in the U.S. than in its OECD counterparts [McMurrer and Sawhill 1998; Graham and Young 2003]. It is also possible that state level inequality—as captured by the Gini—may not be a relevant reference point, particularly given the high levels of physical mobility of U.S. workers across state boundaries. Regardless, the study highlights the extent to which inequality can have different effects on individual welfare, depending on both the context and the measure of inequality that is available.

Other authors have found divergent effects of inequality on well being, depending on the data and the countries that are used. Clark [2003] uses data from the British Household Panel Survey (from 1991 to 2002), and finds that regional inequality—as measured by the Gini—and life satisfaction are positively correlated. At the same time, he finds that average reference group income (regional level) is negatively correlated with life satisfaction (holding income constant),

[11] For an excellent definition of these latter inequalities, often called horizontal inequalities, see Ravallion

as in many other studies. Clark also examines the mobility traits of his respondents and finds that those respondents that have experienced the most income variability or larger pay rises are more likely to be positively affected by income inequality in their reference group. He posits that for these respondents, inequality is a sign of opportunity.

Clark notes that his results are in keeping with an earlier study by Tomes [1986], which finds that inequality is positively correlated with well being for men in Canada (across districts). Yet he also notes that many other authors have found a negative relationship. Hagerty [1999] uses aggregate data from eight countries and shows that average happiness levels are lower in those with wider distributions. Blanchflower and Oswald [2003] find a small negative effect of state level inequality in the U.S.

Luttmer [2004] uses panel data from the U.S. National Survey of Families and Households (NSFH), matched with local earnings data from Public Use Micro-data Areas (PUMAs)—geographic units which have roughly 15,000 inhabitants, to explore the effects of inequality on welfare. The panel nature of the data allows him to control for individual level effects and for selection bias. He finds that, all else held equal, higher earnings of neighbors are associated with lower levels of self reported happiness. This finding holds for life satisfaction as defined as "satisfaction with one's financial situation" rather than for satisfaction with other aspects of respondents' lives, such as health and marital status. Luttmer's findings highlight the importance of relative income differences as people assess the adequacy of their personal income compared to those around them.

One way of interpreting Luttmer's findings is to think about income distributions in general. Most distributions are roughly lognormal, bounded on the left, and skewed to the right.

[2004].

Inequality in essence measures the variance of a given distribution. Variance disproportionately occurs on the right—in the wealthier parts of the distribution. When inequality increases, the mean increases relative to the median.[12] Thus an increase in inequality is likely to make the median respondent feel worse off because he or she is objectively further from average income levels than he/she was before, even though her absolute income level did not change. If the gaps between the mean and the median are visible (as they would be with conspicuous consumption in a smaller reference group like the ones Luttmer analyzes), the median respondent may also *perceive* that he or she is poorer than before because she cannot afford to purchase the same goods as her neighbors are now buying.

Studies of inequality in Russia, meanwhile, find no direct effects of inequality on well being. Claudia Senik, using the Russian Longitudinal Monitoring Survey (RLMS) data, finds no relationship between happiness and regional level Gini coefficients. Graham, Eggers, and Gaddy [forthcoming], using the same survey for different years, corroborate Senik's findings. They also find that respondents (both employed and unemployed) are happier in regions with higher unemployment rates. They posit that inequality in Russia tends to accompany economic change and market-oriented reforms, while unemployment rates are higher in regions where reform has been less extensive. Inequality may be a signal of progress and mobility for those who are engaged in and benefiting from reform, yet a threat or the source of envy for those who are not.[13]

---

[12] For example, for a lognormal distribution (often used to model income/wealth distributions) based on a normal distribution $N(\mu, \sigma^2)$, the mean is $e^{\mu+\sigma^2/2}$ and the median is e^{μ}. Since the mean is conditional on the variance but the median is not, a mean-preserving increase in the variance will increase the ratio of the mean to the median [Aitchison 1957; Moene and Wallerstein 2003].

[13] Opinion polls in Russia suggest that the inequality that most matters to the average citizen is that between Moscow – the reform capital - and the rest of the country, rather than the more general cross-regional differences that are captured by the Gini [VTsIOM 2004].

In a more recent paper, Di Tella and MacCulloch [2003] use the U.S. GSS and the Eurobarometro data to test whether inequality has an additional effect on wellbeing above and beyond reflecting differences in personal income levels. They do not find additional effects of relative status above and beyond those of differences in personal incomes. They posit that this lack of concern helps explain the persistence of flat levels of happiness despite rising levels of inequality in the past decades.

Other studies, which explore the role of different reference norms in mediating the effects of inequality on well being, are suggestive. Oswald et al [2004], in a study of British workers, find that rank within firms is more important to workers' well being than salary levels. In a study in South Africa, Kingdon and Knight [2004] find that the income of others within respondents' local residential area has positive effects on well being (controlling, of course, for respondents' own income). Yet the income of more distant others (beyond the residential area), has negative effects. Similarly, in a study in Peru, Graham and Pettinato [2002] find that respondents tend to be more critical of their economic situation when they compare themselves to others in their country than when they compare themselves to others in their community. Race-based comparator groups are also important in racially divided South Africa. The studies suggest a strong role for reference norms such as rank, race, and community, in mediating the effects of inequality on well being.

One reason that the effects of inequality are of interest to scholars and policymakers is the seemingly obvious link to public attitudes about welfare and other social insurance policies. Yet the empirical evidence suggests that the link is not that obvious, as in the case of the effects of inequality on welfare. In a study in Europe, Moene and Wallerstein [2003] find no relationship between inequality and support for welfare spending in general, but that spending on

insurance (unemployment and disability) is higher where inequality is lower. They attribute this to self interest: the median voter believes she is more likely to benefit from such expenditures if inequality is lower.

Schwarze and Harpfer [2004] link life satisfaction data to pre and post government income distribution at the regional level in Germany. They find that only weak evidence that Germans are inequality averse, and instead that redistributive spending imposes an excess burden on middle income earners.[14] Graham and Sukhtankar [2004] find that respondents that support redistribution in the U.S. are less happy, on average, than others, while in Latin America those that favor redistribution are happier than others. And, rather surprisingly, support for lower taxes and less welfare spending in Latin America is negatively correlated with wealth, a correlation which has been increasing in strength in the past few years in the region.[15]

This rather counterintuitive finding could be the result of a new enlightened self-interest on the part of elites, or it may reflect the reality that the poor have traditionally benefited the least from public expenditures in the region.[16] Regardless of the explanation, these findings suggest that inequality can play into support for redistribution in ways that diverge markedly from the standard theories. Median voter theory, for example, predicts that the poor should be the strongest supporters of redistribution, as they stand to benefit most.

In this paper, we rely on a large data set for Latin America to explore the effects of inequality on welfare. We first explore the direct effects of inequality on well being, and how

---

[14] Boeri et al [2001], meanwhile, find that most Europeans want to shift expenditures from pensions to unemployment insurance. This effect is stronger where labor markets are more rigid, such as in Italy and Spain (e.g. it is harder to fire people so results in less labor mobility, flexibility and higher unemployment).

[15] We also squared the wealth variable, in order to see if there was a quadratic effect, which would suggest a shift in attitudes (and support for lower taxes) for the very wealthy. Yet we did not find evidence of such a shift.

[16] The question on taxes and redistribution (LOWTAX) is phrased: "do you support lower taxes, even if welfare spending suffers", making it very clear to respondents that there are trade-offs to lower taxes. See Graham and Sukhtankar [2004] and Graham [2003].

they vary according to different reference groups. We also tried to capture broader concepts of inequality (inequality *per se*), which include inequality pertaining to race, status, and access to opportunities. We thus analyzed a number of measures of perceived economic well being and relative position, and also looked for links between these perceptions and public attitudes about redistribution. Finally, we looked at how the costs of unemployment on well being vary in relation to inequality.

II. Data

In this paper we use the methodological approach provided by the economics of happiness. Economists who work in the area broadly define happiness and/or subjective well-being as satisfaction with life in general. Indeed, the three sets of terms are used interchangeably in most studies. Most studies of happiness are based on a very simple set of survey questions that typically ask respondents "How satisfied are you with your life?" or "How happy are you with your life?" Answers to this open-ended question incorporate psychological as well as material and socio-demographic factors.

Critics used to defining welfare or utility in material or income terms bemoan the lack of precise definition in these questions. Yet the economists who use these surveys emphasize their advantages in making comparisons across cohorts of individuals—in which they find a surprising consistency in the patterns of responses both within and across countries, such as in the effects of age, health, and marriage on happiness. Psychologists, meanwhile, find a significant degree of "validation" in subjective well-being surveys, wherein individuals who report higher levels of happiness actually smile more, as well as meet several other psychological measures of well-

being.[17] Finally, although economists prefer to use revealed preferences as their measure of utility, this technique at times presupposes an agency that the subject does not possess. In this instance, we are measuring the effect of social arrangements on individuals, arrangements they are usually powerless to affect and for which revealed preferences are inapplicable.

The happiness questions are often based on a four-point scale: "how happy or satisfied are you with your life", with two answers above and two below neutral.[18] The correlation coefficient between happiness and life satisfaction questions is approximately .50, and the micro-econometric equations have almost identical forms.[19] The data are most useful in the aggregate, rather than at the individual level. How an individual answers a question on happiness, for example, can be biased by day to day events, like the break-up of a relationship or a grade on a test. Thus the same person could answer such questions quite differently from day to day or year to year. Despite that, there is a remarkable consistency in the determinants of happiness across large samples of respondents, both across countries and over time. Our own analysis of the determinants of happiness in Latin America and Russia finds that Latin American respondents are, for the most part, remarkably similar to those in the OECD countries and other countries where happiness has been studied [Graham and Pettinato 2001, 2002].

In this paper we use the annual survey provided by the Latinobarómetro organization (1997-2004). The survey consists of approximately 1000 interviews in each of 18 countries in Latin America.[20] The samples are conducted annually by a prestigious research firm in each

---

[17] See, for example, Diener and Biswas-Diener [2000].

[18] There is a debate among psychologists on the optimum scale for well being questions. While there is not complete agreement on the range, most agree that a longer scale than 1 to 4 allows for more accuracy [Cummins and Gullone 2002].

[19] Blanchflower and Oswald [2004] get a correlation coefficient of .56 for British data for 1975-1992 where both questions are available; Graham and Pettinato [2002] get a correlation coefficient of .50 for Latin American data for 2000-2001, in which alternative phrasing was used in different years.

[20] The Dominican Republic was included for the first year in 2004, raising the country total to 18.

country, and are nationally representative except for Chile, Colombia, and Paraguay.[21] The survey is comparable to the Eurobarometro survey for European countries in design and focus.

The survey does not interview the same people every year, so we cannot examine attitudes changing over time except in the aggregate. A standard set of demographic questions are asked every year. Accurately measuring income in developing countries where most respondents work in the informal sector and cannot record a fixed salary is notoriously difficult. Thus many surveys rely on reported expenditures, which tend to be more accurate, if less able to capture the assets of the very wealthy. The Latinobarómetro has neither, and instead relies on the interviewer's assessment of household socio-economic status (SES) as well as a long list of questions about ownership of goods and assets, upon which we compile our wealth index. The index is based on ownership of 11 types of assets, ranging from drinking water and plumbing to computers and second homes. [22]

There are also standard questions in the survey about life satisfaction, perceived economic well being and future prospects for respondents' children, position on a notional economic ladder, and views about the respondent's country's future prospects. There are a range of questions about preference for and satisfaction with market policies and democracy, as well as confidence in public institutions and views about redistribution (these vary by year of the survey).

To avoid large swings in our sample size, we primarily use the 2004 data in our regressions. This is a large set (N=19,605) with each country having over 1,000 observations.

---

[21] Due to logistical and other constraints, the survey only has 70% coverage in Chile; 51% in Colombia; and 30% in Paraguay. The survey is produced by Latinobarómetro, a non-profit organization based in Santiago, Chile and directed by Marta Lagos (www.latinobarometro.org). The first survey was carried out in 1995 and covered 8 countries. Access to the data is by purchase, with a 4 year lag in public release. Graham has worked with the survey team for years and assisted with fund raising, and therefore has access to the data.

[22] The correlation coefficient between the interviewer's assessment of SES and our index is .50. We also estimated a latent wealth variable using primary component analysis of the items in the wealth index, but this alternative does not substantively change our results [Filmer and Pritchett 2001].

We occasionally use data from other years in order to make use of questions that were asked only in that year, such as health status, and in a few instances use the entire pooled set of respondents for 1997-2004.

To establish a benchmark of the determinants of happiness in the region both across countries *and* over time, we ran our standard happiness regression on the entire pooled data set (including both country and year dummies). We cannot include the health variable in the pooled set, as it does not appear in all years. Regardless, our across time findings are very close to our findings based on annual surveys, and the determinants of happiness in Latin America are very similar to those in the United States and Europe, with the exception of a few variables.[23] [Table 1] Women are happier than men in the US, for example, but men are happier than women in Latin America, which may be explained by unequal gender rights. Age has the typical U-shaped curve in Latin America, with the low point at 51 years; it tends to be in the early forties for the U.S. and Europe.

III. Direct Effects of Inequality

In this section, we take advantage of having a range of measures of inequality to explore whether its effects vary depending on how it is measured and on reference group size. In the next section we rely on our data on perceptions of inequality to attempt to capture the broader elements of inequality, with the objective of better understanding the effects of inequality *per se* on well being.

For the 17 countries in our sample we use the latest available national level Gini coefficients on income, Theil statistics for the distribution of education, and two measures of

personal income and relative position. In addition to country level and individual relationships, we explore variance according to the size of the cities that respondents live in. Our objective in this section is to compare the effects of these different measures of inequality on reported well being, as well as to attempt to better sort out the difference between concerns about personal income and those about inequality and injustice more generally.

We first focused on inequality as measured by the Gini coefficient. [See Table 2] We included the variable with our standard happiness equation, which is comparable to those used in most happiness studies: an ordered logit estimation with reported happiness as the dependent variable, and including the usual socio-demographic traits, such as age, education, wealth, gender, marital status, employment status, and self reported health status as independent variables.[24] We used the pooled data set (1997-2004) and included country dummies and cluster controls at the country level.[25]

As is shown in Table 2, respondents in medium Gini countries are happier then either those in low or high Gini countries, with the least happy respondents being in the high Gini countries. These findings are crude at best: we cannot control for individual specific traits as we would in a panel and, other than cluster controls, we cannot account for traits specific to the country groupings that might affect the results. Still, the finding for the high Gini countries

---

[23] Another major difference is that the self-employed are happier than average in the US and Europe but less happy in Latin America. While these respondents are self-employed by choice in the former context, in the latter, they are in the informal sector due to lack of other alternatives.

[24] For this and all other regressions involving the Gini coefficient, we replaced the number by the standard deviation from the regional mean in order to make the coefficients easier to interpret. (In other words, we now think of the differences in terms of standard deviations rather than as incremental changes between closely bunched numbers). We used the most recent number available; the years range from 1999 to 2004. Since the Gini coefficient changes so slowly for most countries, this should not affect the results. The mean for the countries involved was 53.7, from a minimum of 44.6 to a maximum of 59. The Gini coefficient for the United States, in comparison, is 41.8 [United Nations 2004].

[25] An additional issue is that the phrasing and placement of the happiness question changed slightly from 1997-1999 to all of the subsequent years. In order to control for any bias introduced by this, we split the sample

suggests that there may be direct well being costs from living in an environment of exceptionally high levels of inequality. Given that Latin America as a region displays the highest levels of inequality in the world, this is certainly plausible.

We explored whether the unhappiness costs of being in a high Gini country also translated into support for more redistribution. We used a question from 2003, which asked respondents whether taxes were too high, too low, or just right. We found that respondents in higher Gini countries were LESS likely to think that taxes were too high than were those in low Gini countries, suggesting a link between higher levels of inequality and support for redistribution. Yet, as is discussed above, *within* countries in the region, it is wealthier rather than poor individuals that express greater support for redistribution. The redistribution story does not seem to conform to any obvious patterns.

We next looked at the Theil index of education inequality, using education as a proxy for income and opportunity. Our 11 point wealth index does not well capture the assets of the very wealthy in our sample, nor the variance at the top. Our education scale allows for more variance, and those respondents at the upper ranks (completed university or higher technical degrees) are by far the highest income earners in the region.[26] A ranking of countries by education Theils and our results appear in Table 2.

Rather surprisingly, we get the unexpected finding that respondents in countries with greater education inequality are happier (controlling, of course, for the usual socio-demographic traits). This finding holds with and without cluster controls, and whether or not we control for individual wealth in the regressions. We also find that individuals that live in countries with

---

according to happy question type, and get essentially the same results. These split sample regressions available from the authors upon request.

higher education inequality are less likely to complete as many years of education (which is not surprising). This suggests that there is some other unobserved trait shared by respondents in the higher Theil countries (such as culture or weather?) that we are not able to capture with our data. Certainly if one looks a cross-country average happiness levels, many of the poor, unequal countries in Central America score quite high relative to others in the region. [See Figure 1]

The above results are suggestive, but are rife with the problems of using country level measures to gauge the effects of inequality on welfare at the individual level. There are two fundamental problems in our view. The first is our inability to capture unobservable traits that are shared by the particular countries that fall into our rankings or categories. We can control (crudely) for the effects of such traits by clustering, but this does not answer the question of what the unobserved effects are.

Secondly, it is not clear that these aggregate country level measures capture the things about inequality that matter to individuals. Most people do not even know what a Gini coefficient is, much less what the coefficient is for their country and how that compares to other countries. They perceive inequality in terms of how their income or other assets compare to those of others in a relevant reference group, which could be as small as the neighborhood and as large as the global economy. They may also be affected by non-income inequalities, such as racial and gender disparities. Standard income-based measures are not well suited to capturing these broader definitions of inequality.

We first attempted to see if reference group income had negative effects on individuals' well being, controlling for individual wealth levels, as Luttmer does for U.S. PUMAS. We ran a standard happiness regression, with the usual socio-demographic controls, but including a

---

[26] For a detailed discussion of the wage premium for skilled workers in Latin America compared to the rest,

variable representing the average wealth level for the country each respondent lives in (clustering for correlated errors at the country level). Because we rely on the 2004 sample (which is the only one which has both the Dominican Republic and the self reported health variable in it), and have only one year's observation for average wealth, we cannot include country dummies (the variables are linearly dependent). We get the expected positive and significant sign on individual wealth, and a negative but insignificant sign on average wealth, as shown in Table 3.

We have posited that reference norms other than those at the country level are important in mediating the effects of inequality on well being. As one way of testing this (and of getting around the above problem), we calculated average wealth for respondents in the sample according to city size (small, medium, and large cities), and also included individual wealth in the equation. Small cities are defined as having less than 5,000 respondents, while large cities have over 100,000 respondents or are the national capital. This breakdown also reflects the survey's population distribution, which has spikes at just below 5,000 and at over 100,000. The population size for each grouping in each country is about 2,700 for small towns, 7,300 for medium towns, and 9,600 for big cities, which is similar to the range of Luttmer's PUMAs (roughly 15,000 inhabitants each). As is evident from Tables 1 and 6a, in general respondents are happier in smaller cities and less happy in big ones. This also allows us to focus on the difference between rural areas, normal cities, and large metropolitan areas. See Figure 2 for the histogram of city sizes.

We then repeated the above exercise, but calculated average wealth for each city size level within each country. With this less aggregated specification for average wealth, we are able to include country dummies. In this instance, we again get the positive sign on individual wealth,

---

see Behrman, Birdsall, and Szekely [2001].

but a negative and significant sign on average wealth. Thus in Latin America, having wealthier neighbors or city-mates, controlling for an individual's own wealth, lowers self reported happiness. This is similar to what Luttmar finds for earnings areas/PUMA's in the U.S. Relative differences matter to respondents in Latin America, above and beyond the effects of individual income.

The above regressions used the following formula, where *X* is a vector of individual characteristics that have been found to matter to happiness, such as marital status, education, health, etc.:

$$Y = X\beta + avgwealth\beta_2 + wealth\beta_1 \quad (1)$$

This is equivalent to the approach used in the Di Tella and MacCulloch paper described above.[27] In addition, though, they decompose income into average national income and relative income, which is the difference between individual income and average income. We do the same for our wealth index, labeling the former variable *avgwealth* and the latter, *relwealth*. The sum of the two is individual income. This means that if the coefficients on the two variables are the same in a happiness regression, then happiness is increasing in wealth with no regard to relative status. For example, if average income increases by one measurement unit but a person's income remains constant, then that person's happiness increases by the coefficient on *avgwealth* but decreases by the coefficient on *relwealth*. If they are the same, then the person's happiness is unchanged. If *relwealth* is more important than *avgwealth*, as one studying these variables might posit, then happiness would decrease.

The equivalence between the Di Tella and MacCulloch and Luttmer techniques is demonstrated below:

$$Y = X\beta + avgwealth\beta_3 + relwealth\beta_4 \quad (DiTella\ \&\ MacCulloch) \tag{2}$$

$$= X\beta + avgwealth\beta_3 + (wealth - avgwealth)\beta_4 \tag{3}$$

$$= X\beta + avgwealth(\beta_3 - \beta_4) + wealth\beta_4 \quad (Luttmer) \tag{4}$$

Therefore, the Di Tella and MacCulloch approach provides the same information as the Luttmer technique, but making *explicit* the effects of relative as well as average wealth on happiness. Di Tella and MacCulloch use data from the U.S. General Social Survey and the Eurobarometer and find that the effect of each of these components is the same—with a coefficient of .5 on each. Thus they reject the hypothesis that relative income per se—above and beyond being a concern for personal income—matters. We repeat this exercise with our data for Latin America, although we must use our 0-11 wealth index rather than income, and thus do not take logs.

In strong contrast to the findings for the U.S. and Europe, we find that the coefficient on average wealth is insignificant, while the coefficient on relative wealth is positive and significant. [See Table 3] The implication is that only relative income, above and beyond average wealth, matters positively to well being in the region. Thus relative wealth contributes to greater than average happiness for those that are above mean income—the wealthy. It results in lesser than average happiness for those who are below mean income—the poor (as the value on relative wealth for those below mean income is negative, making them that much less happy).

We repeated the same regressions with our country-city size specification of average and relative wealth, including country dummies. Each observation for relative wealth is the respondent's distance from the mean wealth level of other respondents in similar sized cities in his/her country. As in the case of the country level specification, we get an insignificant sign on average wealth, and a positive and significant sign on relative wealth, confirming the importance

---

[27] Di Tella and MacCulloch [2003].

of relative wealth to Latin American respondents, this time using a different reference norm. [See Table 3]

Unlike the results for Europeans and Americans in country level and state level studies, Latin Americans seem to be concerned with relative differences above and beyond their being a product of total individual income.[28] The high levels of inequality in Latin America may underlie our respondents' higher levels of concern for relative than absolute differences.

We also explored the effects of relative and absolute wealth according to which quintile respondents were in. Much of the theory—and some of the empirical work on the role of relative versus absolute income—suggests that absolute income gains matter more to those below a certain minimum level of income. Relative income matters more, meanwhile, as people get wealthier and are no longer concerned about meeting basic needs. In an analogous sense, cross country happiness comparisons find that economic growth leads to higher average happiness levels at low levels of per capita incomes but not at higher ones.

Our results do not necessarily fit the theory. We grouped respondents into quintiles for our sample, based on our wealth index, to see if the coefficients on relative and absolute wealth differed by quintile. Thus in each quintile category, the observation on average wealth is the average wealth for the respondent's country; the respondent gets a 0 for the quintiles that he/she is not in, and the average wealth figure for the quintile he/she is in. Relative wealth works similarly; respondents get zero values for the quintiles they are not in, and then the value of each respondents' particular relative wealth is recorded in the quintile group that they correspond to.

When we include our quintile variables in the regression, we find that average wealth remains insignificant, while individuals in quintiles 1, 2, and 5 retain concerns about relative

[28] At the PUMAs level, Luttmer does find that Americans are concerned about relative income differences.

wealth. (The coefficient on relative wealth for the fifth quintile is positive and significant at the 15% level only). The coefficient on relative wealth for the fourth quintile is significant and *negative*, meanwhile, but only at the 10% level. This suggests that relative income differences make these respondents less happy, even though they are above mean income. This may be because their distance from the mean and/or the poor does not seem big enough; because they think their distance from the rich is too great; or both. The most significant effects seem to be those for respondents in the lowest two quintiles. As they are below mean income, the positive coefficient on relative wealth translates into lower happiness levels. (See Tables 4a and 4b.) Inequality in Latin America seems to make the poor much less happy and the rich moderately happier.

We then repeated our work at the country/city-size reference group level. As above, this was a simple grouping of respondents by wealth quintile—in this instance based on the city-size/country intersection. In this case, respondents are grouped in quintiles which correspond to their country and also to their city size—small, medium, and large. Thus respondents who live in big, wealthier cities are likely to be in a higher quintile when grouped at the country level than when compared to wealthier respondents in their city size reference group.

We ran the same regression as above but for country-city size average and relative wealth, and including country dummies. In this instance, though, we again get an insignificant effect on average wealth, and strong (positive) effects of relative wealth for the wealthiest quintile. Relative wealth is positive and significant at the 10% level for those in the first and fourth quintiles (and a negative but insignificant effect on quintile 3). Thus the effect holds weakly for the poorest, but flips for those in the fourth quintile. Some of this may be specification-driven:

those respondents that are in quintile 4 at the country level are likely to be in quintile 3 when compared with other respondents in big cities, for example. (Tables 4a and 4b)

With the city size rather than country level reference group, the effects of relative wealth seem to be stronger for the rich rather than for the poor. It may well be that when compared to those in a smaller reference group, the poor feel less distanced from the rich, and therefore suffer less negative effects of inequality. The rich, meanwhile, may feel relatively better off with a smaller reference group than they do in a larger one. In other words, a respondent who is wealthy compared to those in his/her small town reference group is probably less wealthy in relative terms when compared to the larger, country level reference group. Regardless of the nuances, relative differences seem to matter to well being in the region, even when a different reference group is used. These differences seem to matter most to those at the top and bottom of the distribution.

To explore differences across reference groups more closely, we ran the average/relative wealth regression separately for each city-size. In a departure from the most of the above findings, in which average wealth is insignificant, we get a positive and significant sign on average wealth for respondents in small cities. While the sign on relative wealth remains positive and significant, the value on the coefficient is smaller than that for average wealth (although the t-statistic is much higher). This suggests that both average and relative wealth levels matter to the well being of those in the small cities, our smallest size reference group and also that with the lowest levels of average wealth. For our larger and wealthier reference groups (the larger city

and country levels), in contrast, relative wealth seems to be the only wealth variable that matters.[29]

IV. What Do These Results Mean? A Simple Illustration

What does all of this mean in plain language? We illustrate in Figure 3 with a simple exercise comparing a typical respondent in the bottom and top quintiles from each Honduras and Chile. Average wealth levels, on our 0-11 scale wealth index, are 4.78 for Honduras and 7.75 in Chile—almost twice as high in the latter. Average wealth in quintile the bottom quintile in Honduras is 2.64 and in Chile is 5.26, over twice as high in the latter. Average wealth in quintile 5 in Honduras is 8.04 and in Chile it is 10.27. If rising personal wealth is sufficient to increase happiness, then the typical respondent in Chile should be happier than in Honduras, and a poor respondent in Chile should be much happier than in Honduras, while a wealthy one should be moderately happier. Yet, as the coefficient on average wealth is insignificant, it suggests this is not the case.

Instead, it is relative income, or the gap between each individual's income and the average that matters. For the typical poor (quintile 1) respondent in Honduras, the gap between his/her income and the average is 2.14 points. In Chile, the gap between the quintile 1 respondent and the average is 2.49 points. If we multiply the difference between these figures (.35) times the coefficient from an OLS regression on relative wealth for the region (.05) then we can assume that poor (quintile 1) respondents in Honduras are about one-half of one percent (.017 divided by

[29] The coefficient on average wealth for small cities is 0.245 and the t-stat is 1.920; on relative wealth, it is 0.152 and the t-stat is 5.815; for medium cities the coefficient for relative wealth is 0.103 and the t-stat is 3.716; for large, these figures are, relatively, 0.110 and 4.784.

the 4 point happiness scale) happier than poor respondents in Chile, even though the average wealth levels of the poor in Chile are over twice as high![30]

For those in the top quintiles, meanwhile, the gap between the wealth of those in the top quintile in Honduras and the average wealth is 3.26, while that for Chile is 2.52. If we multiply this difference (.74) times the coefficient on relative wealth, we can assume that respondents in the top quintile in Honduras are about 1% happier than those in Chile, even though they are significantly less wealthy.

Conducting a similar exercise at the regional level, meanwhile, we see that the average wealth of respondents in quintile 5 is 9.63, or 3.83 points higher than the regional mean wealth of 5.80, while the typical respondent in the first quintile, with a mean wealth of 3.12, is 2.68 points below the mean. Multiplying these gaps times the coefficient on relative wealth (.05) and dividing by the four point scale, this implies that the rich are made 5% happier by their relative difference between themselves and the average, while the poor are made 3% less happy by inequality. This is a property of the skewed nature of the wealth distribution (which is even greater when using income as the measure rather than our wealth index), as the rich are further away from the mean than the poor are.

It is important to note that this is an illustrative exercise which is intended to suggest the magnitude and direction of the effects that we find, rather than to attach a real value. There are a number of issues that we cannot resolve, such as the arbitrary nature of our scaling assumptions. Short of a viable alternative, these calculations assume that a move one point up or down the happiness scale has a similar effect regardless of where on that scale the respondent is. Yet it may well be that moving from somewhat unhappy to somewhat happy matters more to

[30] In order to calculate these coefficients, we used OLS to regress happiness, although we used ordered

individuals' lives than does moving from somewhat happy to very happy. We unfortunately cannot resolve that question here.

Our findings suggest that inequality matters much more to well being in the region—including for those in low income groups—than the standard theory implies. The latter stresses the importance of absolute income gains for those at the bottom of the distribution. Much of the literature on the effects of inequality (discussed above) posits that in contexts where it has positive effects on happiness, it is because it signals future opportunities. This can only occur if beliefs in the prospects for upward mobility are high. In Latin America, in contrast, it is likely that persistently high levels of inequality signal to the poor that there are persistent disadvantages (and possibly other kinds of discrimination which our variables do not allow us to measure) and to the rich that there are persistent advantages. On reflection, these results should not come as a surprise in a region where inequality levels are higher than in the U.S. or Europe, and where the institutions equalizing opportunities, such as educational and labor markets, function far less efficiently and equitably.

V. Perceptions of Inequality and Well Being

In addition to examining the direct effects of inequality on well being, we attempted to capture the effects of inequality per se—e.g. inequality defined more broadly than in income terms. In this section of the paper, we attempt to capture this broader definition of inequality through a number of different variables which capture respondents' *perceptions* of inequality, status, economic success, and prospects for upward mobility. In previous work, we find that respondents' prospects for upward mobility (POUM), for example, are positively correlated with

---

logistic regression in the rest of the paper.

happiness and even with better labor market performance in future periods.[31] Here we explore the relationship of several of these variables with well being, and how that relationship varies according to reference group size.

Two questions in particular allow us to separate feelings of status from other economic concerns or utility of wealth. One of these is a catch-all question asking "In general, how would you describe your present economic situation and that of your family?" This variable is consistently one of the most significant to well-being, usually more so than any other except health. The other is the economic ladder question (ELQ), included in many other well-being surveys besides the Latinobarómetro, which asks respondents to place themselves on a 10-step ladder where the poorest are on step one and the richest on step ten. This question is also an important predictor of happiness, even when other questions about wealth are included. It is purely a relative ranking of wealth. When combined with the personal economy question, it allows us to decompose the utility of wealth into status and other effects.

The frame of reference for the ELQ is left up to the respondent. The question does not specify whether the ladder represents their country or a smaller or larger reference group (such as the city or the world). Responses suggest that people in fact take all of these frames into account. Wealthier countries have higher ELQ scores, suggesting international comparisons; ELQ increases (as does wealth) with city size, suggesting countrywide comparisons; but ELQ increases more slowly with city size than wealth does, indicating local comparisons. Meanwhile, personal economic satisfaction increases with city size, but given the increase in the other variables, there is actually a negative coefficient on the big city dummy variable in the regression. Summary statistics for the ELQ and personal economy question are in Table 5.

[31] Graham and Pettinato [2002]; Graham, Eggers, and Sukhtankar [2004].

What do these subjective variables, personal economy and ELQ, allow us to measure that the objective variables used before do not? For one thing, they may do a better job of measuring the elusive concept of relative status than looking at relative wealth alone. When regressing happiness on four measurements of wealth (wealth, ELQ, personal economy, and socioeconomic status, plus standard demographic variables and country dummies), the latter two subjective variables were more significant, both statistically and practically, than the objective variables. There is obviously some collinearity among these variables, but there is also a fair amount of variance (the correlation is < .6 between any two of them, see Table 5) and the results hold up using both OLS and ordered logit regressions. It also holds up when measuring relative wealth at the country and country/city size level, with and without the relevant dummies. In fact, a happiness regression with our full set of 30 control variables (but not the personal economy question) gives an R-squared value of 0.069, while using the personal economy question as the only explanatory variable gives an R-squared value of 0.038.

When we include both personal economic ranking and the ELQ in a happiness regression, we find that the coefficient on the personal economic ranking is much greater than that for the ELQ. [Table 6] Even after adjusting for scale (there are twice as many possible responses on the ELQ as there are on the personal score), this suggests that people's subjective assessment of their overall personal situation is much more important to their happiness than is their subjective assessment of their relative position. How can we reconcile this with our previous finding that relative wealth is all that matters to happiness? Indeed, it is consistent with that result. Relative wealth is presumably an important factor in the personal economy question. Since ELQ is not perfectly correlated with personal economy, the fact that the ELQ is significant at all indicates that relative status has bearing on happiness outside of a purely economic context.

We looked at the determinants of ELQ scores (in other words using the ELQ as the dependent variable). As in the case of happiness, ELQ scores display a U-shaped relationship with age, first decreasing until approximately 57 years and then increasing (a similar shape to that of happiness). Education, wealth, and self reported health are positively correlated with ELQ scores, while men and the unemployed are more likely to report lower ELQ scores. Since men are, on average, wealthier than women, this suggests that they also have higher economic standards than women do. When we include the Theil index for education inequality, we find a negative correlation: respondents that live in countries where education is unevenly distributed are more likely to rank themselves lower on the societal economic ladder. [Table 7] Education is not lognormally distributed like wealth, due to sharp spikes around middle school and high school graduation age, but the effect nonetheless seems to be similar as discussed before—greater variance lowers the relative standing of the median person.

We then looked at how these scores varied according to where people live (city sizes). Wealth levels are, on average, higher in large cities than in small ones. In contrast, we found that respondents' subjective personal economic rankings were LOWER in big cities and higher in small towns! [Table 8a] In our view, this perceptions gap is in keeping with other findings in the happiness literature. It is suggestive of Luttmer's recent work on U.S. earnings areas and our own findings on average country level wealth. In both cases, respondents of similar income or wealth levels are less happy when their peers or compatriots have higher levels of wealth. James Duesenberry's classic work on savings also resonates. He finds that, holding income levels constant, respondents that live in neighborhoods with higher average levels of wealth are less satisfied with their incomes than those that live in less wealthy neighborhoods.

ELQ, on the other hand, rises with city size (as does wealth), and even after controlling for socio-demographic data, ELQ rankings tend to be higher in big cities. Once again, this appears to be a reference-group effect: people in small cities are more likely to know how others around them live than are those in medium or large ones. And for the most part they are fairly on par with their neighbors, as there is less variance in wealth levels in smaller cities. People in big cities, meanwhile, are probably aware that objective economic conditions in the countryside and smaller towns are worse than they are in the major cities.

We next explored whether the average or relative aspects of the ELQ and personal economy rankings mattered more to happiness. We repeated the technique of separating the variables into an average component and a relative component for ELQ and the personal economy question.[32] Using an F test, we could not reject the hypothesis that the coefficients for average and relative personal economy are equal and positive. On the other hand, average ELQ was completely insignificant, while relative ELQ was significantly positive. Thus, although people in, for example, large cities with wealthy neighbors realize that they are wealthier than people in rural areas, this brings them no additional happiness because they are concerned about their relative position vis-à-vis their rich neighbors in the cities. Furthermore, although a person's ELQ rises with the average ELQ around him or her, that person's relative ELQ tends to decrease with higher-status neighbors. These findings are very much in keeping with our findings based on objective measures of relative and average wealth. [Table 8b]

We can use similar methods to look at intergenerational mobility. One question asks, "do you believe that [your children] will live better, the same, or worse off than how you live today?" Another question asks respondents to rank their children's future status on the ELQ. The

combination of the two can be used to examine effects of status and wealth shifts, where the first variable (POUMkids) allows us to factor out the effect of an overall rise in living standards. We can then create a variable, generational POUM, by subtracting respondents' own ELQ score from their children's, to look at expected shifts in status as well as wealth.

At the country level, the highest average generational POUM score was for Chile (77%), while the lowest was for Costa Rica (19%). One can imagine that being in a fast growing economy with a great deal of economic change, such as Chile, would suggest better prospects for one's children's getting ahead than would living in one such as Costa Rica, where social insurance systems are basically sound, but where economic reform has been slow and growth performance moderate at best.

At the individual level, the generational POUM displayed a U-shaped age relationship, with the low point at 55 years. There was also an upside down U shaped relationship with education, with the turning point being 8.75 years of education, which is greater than primary but short of completed secondary school. This is closely linked to our findings on unemployment (discussed below), with the probability of being unemployed having a similar relationship with age and education, where the turning point of the latter is about 9.2 years of school.

The unemployed are disproportionately represented among those with completed or almost completed secondary education. [Table 10] *Employed* respondents with this educational profile, meanwhile, had lower expectations for their children's mobility than did those with more or less education. Individuals with this profile have fared worse compared to those with university and higher technical skills, whose earnings have increased in both relative and

---

[32] In other words, the average ranking for the relevant reference group—country or country/city size—and the distance of the individual respondent's ranking from that average.

absolute terms; and worse in relative terms compared to those with lower levels (basic only) of education.[33]

Those respondents that were actually *unemployed* had a higher generational POUM than the average. This probably reflects hope and optimism as much as objective conditions. Our earlier work suggests that most people retain hope for their children, even when in difficult straights.[34] And given that the ELQ rankings of most unemployed people tend to be low, they would not have to rank their children particularly high to have a positive generational POUM. Scores were lowest in small towns and highest in the big cities, which not coincidentally have the greatest and most varied employment educational and employment opportunities.

A related inequality perceptions variable was the time respondents thought it would take to reach their desired standard of living. The question was phrased as: "how long do you think it will take you to reach your desired standard of living?" with possible answers ranging from "I already have it" to several different year categories (1 to 2 years; 5 to 10 years, and so on) to "never". As shown in Table 9b, respondents who live in small towns are more likely to report "never", while there was no significant difference in the responses of those that live in big cities from those in medium ones. It is likely that those in small towns, particularly rural ones, are well aware that the greatest opportunities for both education and employment are in larger urban areas rather than in their small towns. Meanwhile, those respondents with completed secondary school were the most likely to answer "never" or the next lowest score. Again, trends in returns to education are likely playing a role.

---

[33] Behrman, Birdsall, and Szekely [2001].

[34] In perceptions surveys in Peru, for example, we found that a much higher percent of respondents ranked their own past progress negatively than assessed their children's future prospects negatively [Graham and Pettinato 2002a].

To help explain our findings, we examined a variable which asked respondents to choose what affected them most among the many reasons for which there was unequal treatment of people in their countries. Possible answers ranged from skin color to poverty to age. Respondents in small towns were more likely to say that poverty and lack of education were the primary reasons, while those in big cities were more likely to report corruption or the need to pay bribes.

These findings suggest that both sets of respondents perceive that there is inequality and injustice. Yet the responses suggest that those in small towns feel that they do not have access to opportunity due to their own poverty and education (explaining a higher tendency to the "never" responses on the above question), while those in big cities are more likely to believe that opportunities and access are monopolized by those with greater means or connections.

Those in small towns are seem more concerned about their own poverty compared to the rest of society, while those in large cities are more concerned with their access to opportunities compared with more "connected" folks. In both instances, the concerns cited run in the opposite direction of an interpretation in which inequality signals opportunity and mobility, which is more typical for the U.S. and for Europe.

VI. The Costs of Unemployment and Inequality

Continuing with our methodology of looking at the effects of inequality on specific subgroups, we here analyze the impact on happiness of unemployment. Previous happiness research has found that unemployment is one of the most traumatic events that can happen to people. One of the reasons for this is of course the loss of income; however, there is also a cultural stigma to unemployment that impacts happiness. The typical unemployed person in our study is a male who has attended some high school (on average 10 years of education). The unemployed percentage of the population increases with city size. This may be an artifact of the

data, however, because people in rural areas are more likely to be outside the formal labor force altogether and unemployment is a less relevant concept for them.

We sought additional information about how inequality affects welfare via our knowledge of the effects of unemployment on happiness. The strength of these effects—e.g. the "costs" of unemployment—tend to vary across countries and regions. We build from the work of others. Di Tella, MacCulloch, and Oswald find that respondents in the United States and Europe are made more unhappy by higher unemployment rates than they are by inflation. In other words, the typical respondent—including employed respondents—would accept higher levels of inflation if it would eliminate the insecurity associated with higher unemployment rates.

Several studies have shown that increased unemployment in general lessens the impact on unemployed individuals. Clark and Oswald [1994] find that the unemployed in Britain are less unhappy in districts where the unemployment rate is higher. The costs to happiness that comes from the decreased probability of finding a job seems to be lower than the gains to happiness that come from being less stigmatized and accompanied by more unemployed counterparts. Similarly, Stutzer and Lalive [forthcoming] find that unemployed respondents are less happy in cantons that have voted to reduce unemployment benefits in Switzerland (controlling for benefit levels), as the stigma from unemployment is higher. As discussed above, Eggers, Gaddy, and Graham find that both employed and unemployed respondents are happier in regions with higher unemployment rates in Russia.

We, too, find positive effects of general unemployment on happiness, both using an unemployment rate calculated from our own data and the latest statistics available from the United Nations Economic Commission for Latin America and the Caribbean (ECLAC). These are country-wide unemployment rates and have statistically significant positive effects on

happiness. As in the above studies, higher overall unemployment may reduce the stigma effect on individuals. The results must be tempered, though, by the limited information that open unemployment rates can provide in a region with high levels of informal employment (exceeding 50% in a few countries).

Inequality in countries also has an effect on happiness among the unemployed. Using our pooled data set from 1997-2004, we ran a standard happiness regression, including a control variable for being unemployed, and then adding interaction terms for being unemployed in a high or low Gini country. We find that the costs to happiness of being unemployed are lower in higher Gini countries. [Table 10a] In other words, unemployed respondents in countries with higher inequality are actually happier than those in countries with low inequality. Countries with high inequality are also, on balance, poorer than other countries, so the unemployed may have less far to fall in those countries.

Another reason may be the higher levels of informal employment in the poorer and more unequal countries in the region, thereby resulting in less stigma for the unemployed. Or it may be due to some other country level unobservable that we are not accounting for. And while the costs of being unemployed are *lower* in higher Gini countries, fear of unemployment (among the employed) is *higher*, in keeping with our intuition about greater levels of informality and associated insecurity. Thus in higher inequality countries, the lower stigma for the unemployed is accompanied by greater insecurity for the employed.

Job instability has particularly affected those with a high-school level of education, and if we look at the happiness impact of unemployment among different educational groups, it turns out that, in addition to having the highest rate of unemployment, those with a high school education are also made most unhappy by unemployment. In fact, unemployment has a

statistically insignificant effect on happiness on the ends of the education spectrum. [Table 10b] College-educated people are also less likely to fear unemployment than those with less education. And unemployment is a less relevant concept for the illiterate, who are most likely to be outside the formal labor market to begin with, and those with higher education are more likely to be able to find another job than those with secondary school education.

We also examined the costs to unemployment by city size. As in the case of our Gini coefficients, we find that the costs of unemployment are lower in big cities than they are in small towns, suggesting that there is a lower stigma effect in big cities. Yet also as in the case of inequality (as measured by the Gini), fear of unemployment is higher in the big cities, presumably because labor markets are more integrated into the international economy and volatility is more of a factor, while relying on farming as a safety net is not an option the way it is in smaller towns. [Table 10b]

Rather interestingly, respondents with higher fear of unemployment were also more likely to think that taxes were too high. In Europe in general, insecure workers seem to support higher welfare spending (and in particularly on unemployment insurance).[35] In Latin America, where labor markets are very rigid and there is much less faith in efficient or equitable redistribution (particularly among lower income respondents), higher taxes seem to signal tradeoffs in terms of economic growth and employment generation rather than welfare benefits from the state.

Our findings are suggestive of how the costs of being unemployed can vary across countries and according to different measures of inequality. Inequality seems to be correlated

[35] Regression results available from the authors. For Europe, see Boeri et al. [2001].

with a lower "stigma" for the unemployed, but with a higher fear of unemployment for the employed.

VII. Conclusions

This paper was an attempt to explore the effects of relative income differences, as well as of inequality more broadly defined (inequality *per se),* on well being in Latin America, the region with the highest inequality in the world. We find large and consistent effects of relative income differences (and concerns for relative income differences) on well being. At the same time, average country and city-size wealth, holding individual incomes constant, had no significant effects on well being, with the exception of in the smaller, poorer cities. This suggests that inequality or relative position matters more in Latin America than it does in other places, such as Europe and the United States.

Rather surprisingly, the strong effects of inequality (or relative wealth more specifically) held for both the poorest and the wealthiest groups. The effects of relative income contribute to the happiness of those who are above average income and result in lower happiness levels for those who are below it. A back of the envelope calculation suggests that inequality in the region makes those in the highest quintiles 5% happier than the average and those in the poorest quintile 3% less happy, regardless of differences in average or individual wealth levels within and across these groups.

Various studies of inequality and well being in the United States and Europe find modest effects in one direction or the other (positive or negative), or else inconclusive evidence that inequality matters at all. A common explanation for these mixed findings is that in Europe and the U.S., inequality can be a signal of income mobility and opportunity as much as it is a signal of injustice. In Latin America, a region where the gaps between the poor and the wealthy are

much larger and more persistent, inequality seems to be a signal of persistent advantage for the very wealthy and persistent disadvantage for the poor, rather than a signal of future opportunities.

We also analyzed trends in respondents' perceptions of inequality, rank, and opportunity as a means to gauge the effects of broader, non-income definitions of inequality—inequality *per se*—on well being. Our findings support the importance of relative differences in these realms to well being, and suggest that they may be more important than income-based differences. And concerns for status or relative differences were higher among those respondents whose reference norms are higher—in places where there is higher average wealth and with greater variance in levels (and probably more information and awareness), as in big cities.

Inequality and perceived inequality play a mediating role in the effects of unemployment on well being. Higher levels of inequality seem to lower the costs of unemployment for the unemployed (perhaps by reducing stigma), but increase insecurity or fear of unemployment for the employed.

Our findings are, by definition, suggestive rather than conclusive. We set out to explore the effects of relative income differences on well being, using a range of measures, including some unconventional ones, as well as to try and shed light on an as yet loosely defined concept—inequality *per se*—using perceptions about status and opportunity. Most of the measures suggest that inequality has perverse effects on welfare in Latin America. It is associated with lower well being for those at the bottom of the distribution in particular and for those with below average wealth levels in general. Our findings on perceptions of status and opportunity run in the same direction. Not all of the effects of inequality are negative; the wealthy are made happier by higher relative differences. Yet this is not necessarily optimal in a normative sense (depending

on one's priors). And while the unemployed seem to suffer lower well being costs in contexts of higher inequality, it is also linked to higher fear of unemployment.

The implications of our findings for policy are less clear. The modest evidence that we have on support for redistribution in the region suggests that there is not much support for it among the poor—precisely the group that is most hurt by inequality. At the same time, the concerns that we find among respondents about poverty and lack of equal access to education and other opportunities suggest that it would be much easier—and arguably much more efficient—to generate support for policies that can help increase access to education and opportunity. That, however, is a major challenge, and the subject for another paper.

THE BROOKINGS INSTITUTION

Figure 1: Happiness and Income Per Capita, 1990s

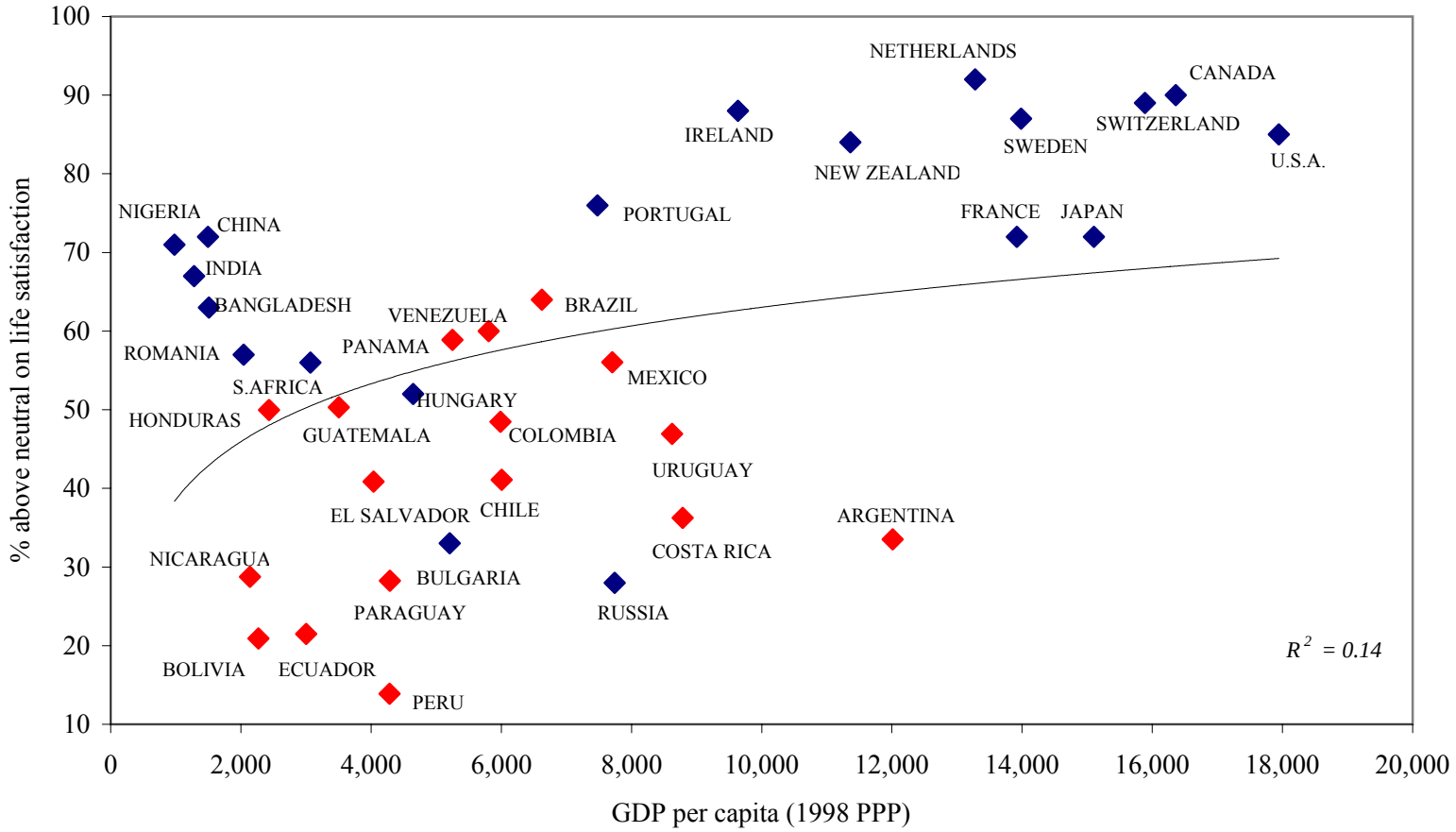
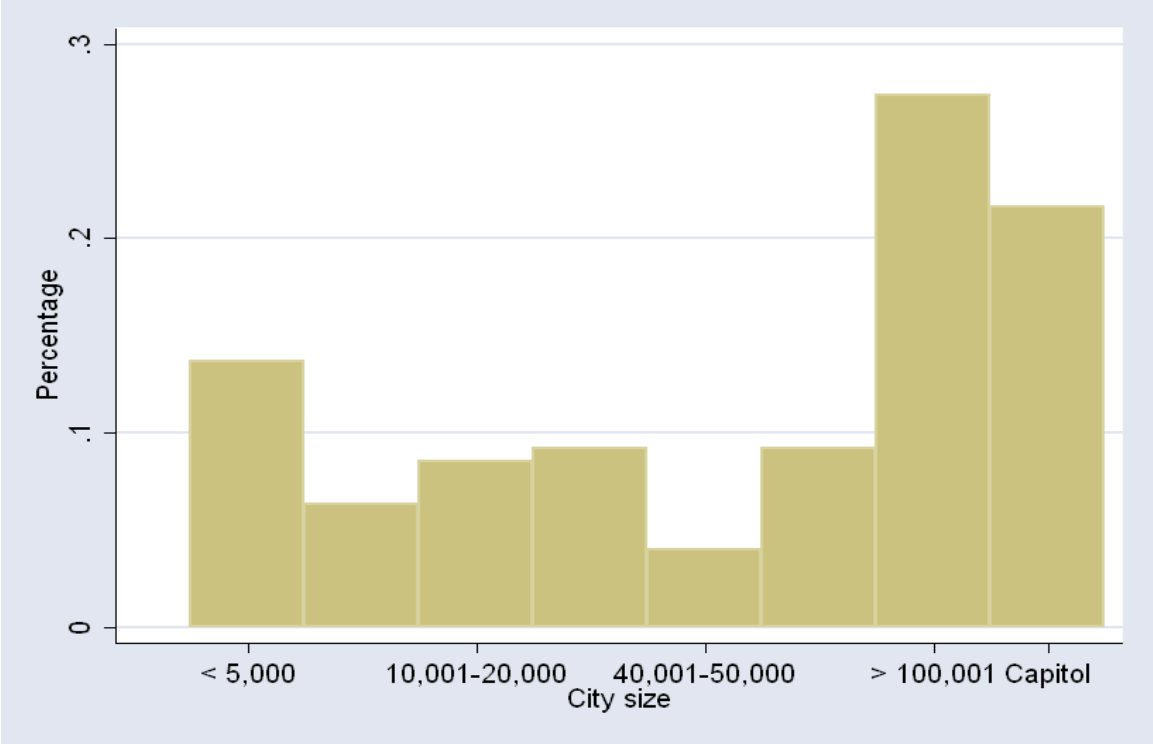


Figure 2: Histogram of Respondents by City Size



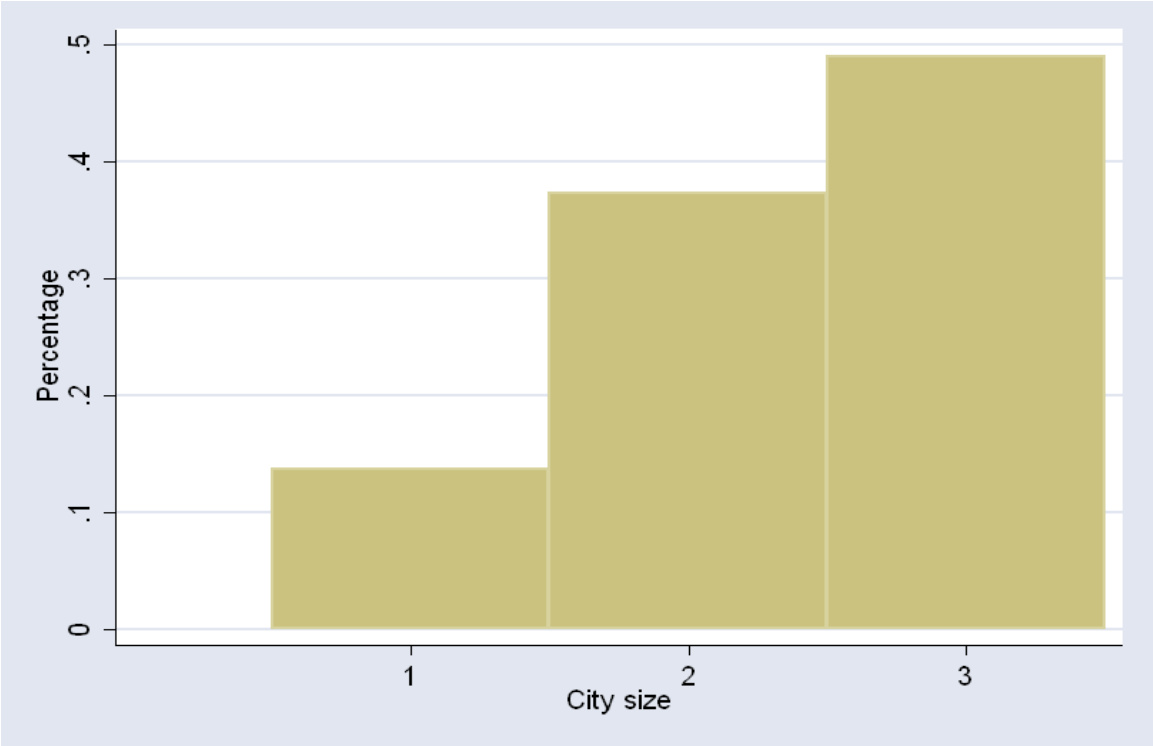
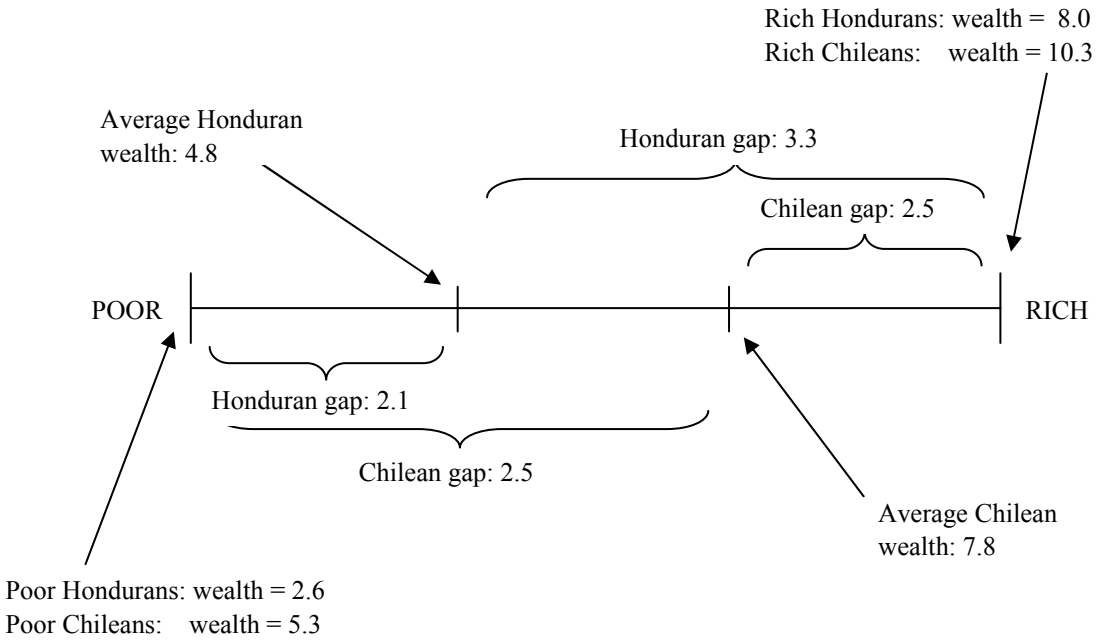


Figure 3: Happiness Gap in Honduras and Chile



Happiness Gap = wealth gap * coefficient ÷ 4

	Calculated Happiness Gap	
	Poor	Rich
Chile wealth gap	-2.489	2.521
Honduras wealth gap	-2.142	3.261
Chile-Honduras difference	0.347	0.740
difference * coefficient / 4 = Honduran happiness differential	**0.43%**	**0.93%**

	Mean Happiness (1-5 scale)			Mean Wealth (1-11 scale)		
Wealth quintile	Chile	Honduras	Overall	Chile	Honduras	Overall
1	2.54	3.11	2.73	5.26	2.64	3.12
2	2.74	3.15	2.85	7.00	4.00	5.00
3	2.77	3.17	2.91	8.00	5.00	6.00
4	2.94	3.13	2.97	9.00	6.00	7.46
5	3.08	3.30	3.08	10.27	8.04	9.63
Total	2.79	3.17	2.88	7.76	4.78	5.81

Table 1: Determinants of Happiness

Ordered logit estimation of a 1-4 scale of happiness

	1997-2004 data	
independent variables	coefficient	z-score
Age	-0.034	-16.21**
Age squared	0.0004	14.25**
Years education	-0.002	-1.52
Married dummy	0.097	7.68**
Male dummy	0.044	3.79**
Wealth (0-11)	0.067	24.60**
Unemployment dummy	-0.289	-12.57**
Self-employment dummy	-0.051	-3.73**
Retired dummy	-0.104	-3.78**
Student dummy	0.027	1.12
Small town dummy	0.9	23.22**
Big city dummy	0.665	32.79**
Argentina	-0.306	-10.28**
Bolivia	-0.708	-22.72**
Brazil	-0.097	-3.19**
Colombia	0.278	9.25**
Costa Rica	0.861	26.78**
Chile	-0.232	-7.88**
Ecuador	-0.505	-16.73**
El Salvador	0.228	7.07**
Guatemala	0.385	11.88**
Honduras	0.523	15.97**
Mexico	0.224	7.45**
Nicaragua	0.114	3.48**
Panama	0.369	11.68**
Paraguay	-0.078	-2.10*
Peru	-0.822	-26.11**
Venezuela	0.685	22.24**
Observations	105885	
Low point of age: 51.0		

	2004 data only	
independent variables	coefficient	z-score
Age	-0.041	-8.15**
Age squared		7.18**
Years education	0.013	3.44**
Married dummy	0.175	5.79**
Male dummy	-0.023	-0.81
Health (1-5)	0.415	23.71**
Wealth (0-11)	0.095	12.49**
Unemployment dummy	-0.375	-6.73**
Self-employment dummy	-0.068	-2.05*
Retired dummy	0.177	2.55*
Student dummy	0.059	0.99
Small town dummy	0.074	1.56
Big city dummy	-0.06	-1.86
Argentina	0.385	5.03**
Bolivia	-0.33	-4.11**
Brazil	-0.001	-0.01
Colombia	1.17	14.75**
Costa Rica	1.392	16.72**
Chile	0.195	2.54*
Ecuador	-0.314	-4.02**
El Salvador	0.675	8.21**
Guatemala	1.187	13.87**
Honduras	1.418	16.40**
Mexico	0.467	5.96**
Nicaragua	0.634	7.40**
Panama	1.118	13.78**
Paraguay	0.32	3.38**
Peru	-0.254	-3.19**
Venezuela	1.433	17.50**
Dominican Republic	1.012	12.21**
Observations	19152	
Low point of age: 51.5		

* significant at 5%; ** significant at 1%

Table 2: Inequality Variables

Gini category	Country	Gini coefficient
Low (Gini ≤ .50)	Uruguay	44.6
	Costa Rica	46.5
	Venezuela	47.6
	Peru	49.4
	Dominican Republic	49.7
Medium (.50 < Gini ≤ .55)	Argentina	52.2
	El Salvador	53.2
	Mexico	54.6
High (.55 < Gini)	Honduras	55.0
	Nicaragua	55.9
	Ecuador	56.2
	Panama	56.4
	Paraguay	56.8
	Chile	57.1
	Colombia	57.6
	Bolivia	57.8
	Guatemala	58.3
	Brazil	59

Education Theil	Country	Gini category
0.058	Chile	High
0.059	Argentina	Medium
0.063	Peru	Low
0.074	Uruguay	Low
0.075	Paraguay	High
0.080	Ecuador	High
0.100	Venezuela	Low
0.115	Colombia	High
0.123	Panama	High
0.126	Costa Rica	Low
0.140	Mexico	Medium
0.161	Bolivia	High
0.174	Brazil	High
0.181	Dominican Republic	Medium
0.214	Honduras	High
0.229	Nicaragua	High
0.235	El Salvador	Medium
0.309	Guatemala	High

Gini category	Mean happiness	Mean wealth
Low	2.949	6.040
Medium	2.979	6.214
High	2.796	5.481

Ordered logit estimation of a 1-5 scale of whether taxes are too high in [country]

Controls include demographic variables from Table 1 (except health, not available in this data set) and standardized Gini coefficient

	coefficient	z-score
Standardized Gini coef.	-0.1650	-10.83**

Ordered logit estimation of a 1-4 scale of happiness

Control variables: standard demographic variables, clustered by country

	coefficient	z-score
Theil coefficient	2.978	2.55**

Table 3: Average vs. Relative Wealth

Ordered logit estimation of a 1-4 scale of happiness

	Average wealth calculated by:					
	country	country	country city size	country city size	country city size	country city size
individual wealth	0.1117583 5.44**		0.1121746 6.9**		0.0968018 7.96**	
average wealth	-0.052326 -0.70	0.0594327 0.78	0.0543354 0.92	0.0578392 0.99	-0.080508 -2.19*	0.0162937 0.42
relative wealth		0.1117583 5.44**		0.1121746 6.9**		0.0968018 7.96**
country dummies*	N	N	N	N	Y	Y
citysml dummies	Y	Y	Y	Y	Y	Y
cluster by:	country	country	country citysml	country citysml	country citysml	country citysml

Demographic variables in all regressions: age, age squared, years education, married, male, health, unemp, selfemp, retired, and student

* When calculating average wealth at the country level, country dummies cannot be included in the regression due to multicollinearity

* t-statistics underneath coefficients

Table 4a: Relative Wealth and Happiness, by Wealth Quintiles

Average wealth computed by country

Control variables: standard demographic variables, clustered by country

		coefficient	z-score
Average wealth quintile	1	0.0495	0.61
	2	0.0552	0.80
	3	-0.0114	-0.14
	4	0.1067	1.25
	5	0.0613	0.85

Relative wealth quintile	1	0.1690	3.12**
	2	0.5994	3.35**
	3	0.5442	1.77
	4	-0.2873	-1.82
	5	0.0450	1.49

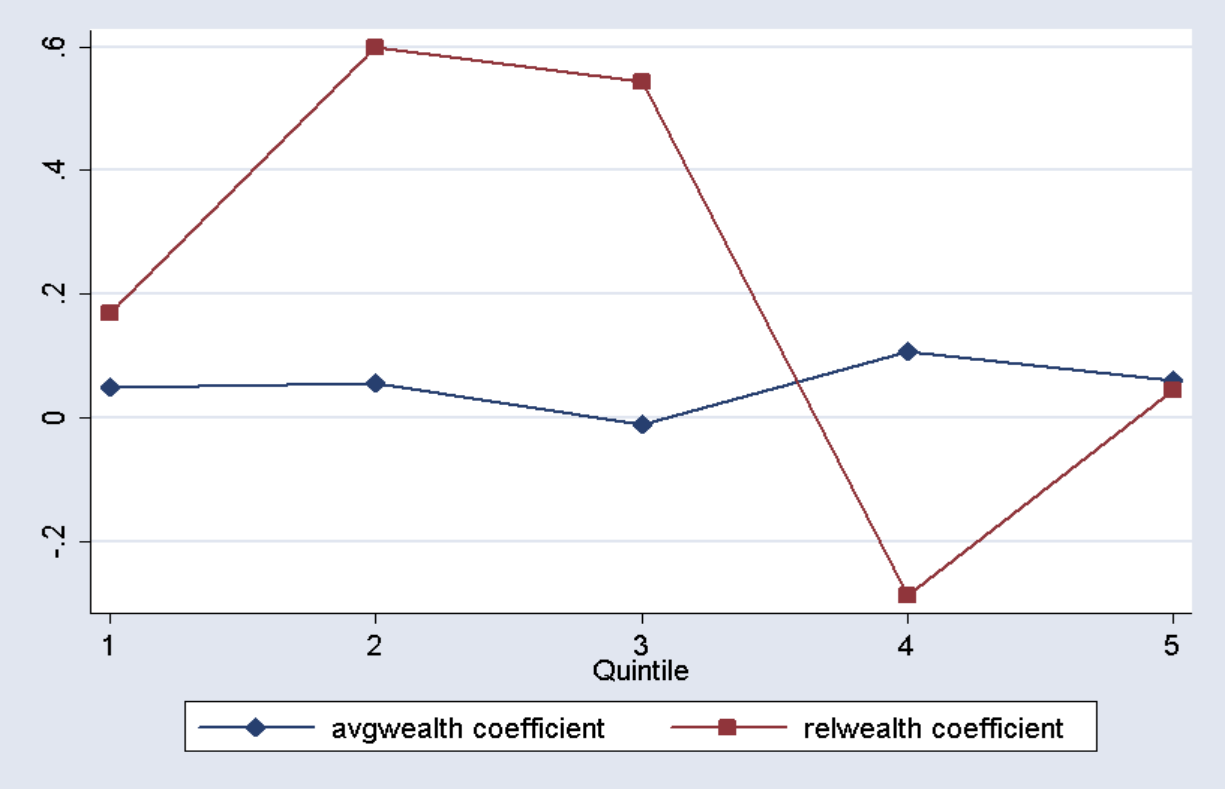


Table 4b: Relative Wealth and Happiness, by Wealth Quintiles

Average wealth computed at country/citysml intersection

Control variables: standard demographic variables and country dummies, clustered by country/city size

		coefficient	z-score
Average wealth quintile	1	0.018	0.49
	2	0.028	0.78
	3	0.041	1.02
	4	0.019	0.49
	5	0.002	0.04
Relative wealth quintile	1	0.065	1.72
	2	0.085	1.57
	3	-0.151	-1.22
	4	0.149	1.92
	5	0.157	3.94**

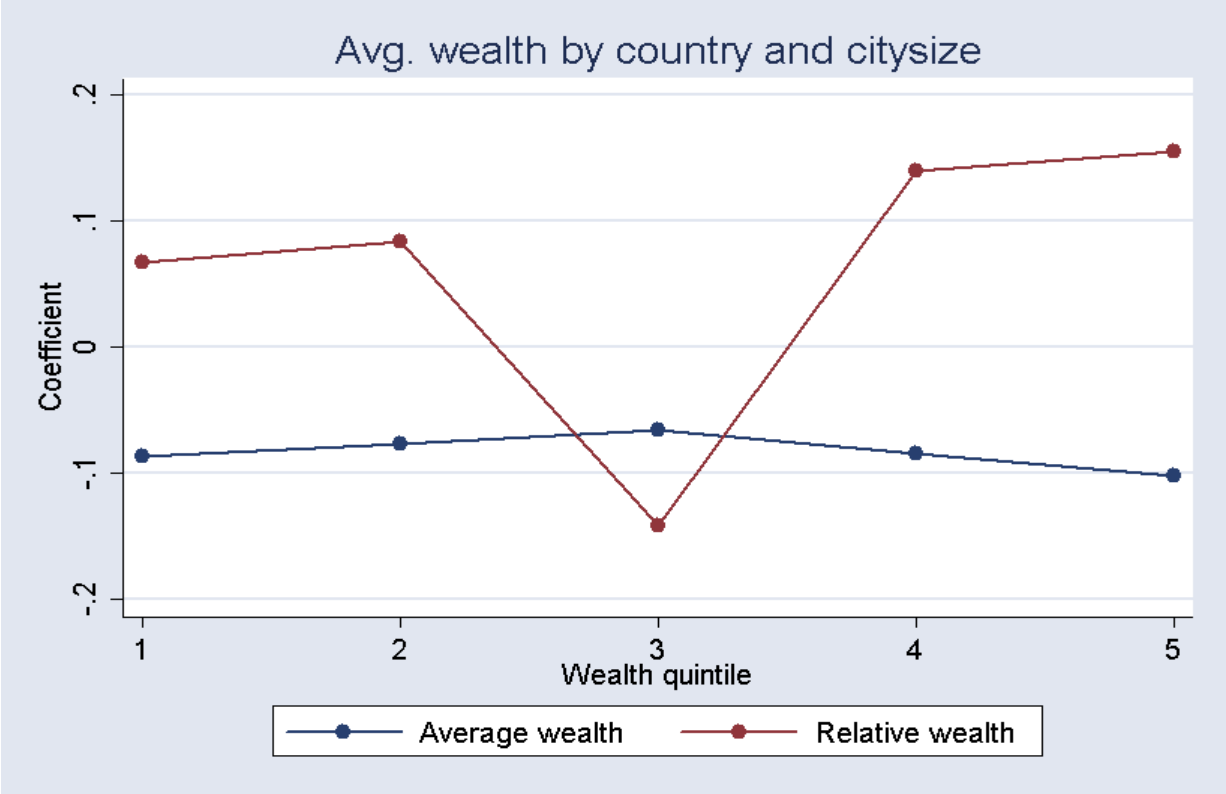


Table 5: Summary Statistics for ELQ and Economic Satisfaction

Means of variables	economic satisfaction (1-4 scale)	ELQ (1-10 scale)	wealth (1-11 scale)	education (1-16 scale)	happy (1-5 scale)
Small town	2.88	3.66	4.38	7.37	2.72
Medium city	2.96	3.74	5.34	7.16	2.94
Big city	3.01	4.25	6.56	9.53	

Correlation between different measures of wealth

	wealth	socio-economic status	personal economic satisfaction	ELQ
wealth	1			
socio-economic status*	0.5112	1		
personal economic satisfaction	0.2521	0.2477	1	
ELQ	0.3956	0.327	0.3131	1

* As judged by the interviewer

Table 6: The Economic Ladder and Personal Economic Satisfaction

Ordered logit estimation of a 1-4 scale of personal economic satisfaction
Controls include standard demographic variables and country dummies

	coefficient	z-score
age	-0.0773	-14.54**
age squared	0.0007	11.66**
education	0.0153	3.71**
wealth	0.2035	24.96**
married	0.1069	3.37**
male	-0.0537	-1.81*
health	0.4354	23.73**
unemployed	-0.4945	-8.48**
self-employed	-0.0822	-2.37**
retired	0.0704	0.97
student	-0.1513	-2.4
small town	0.0809	1.63
big city	-0.1110	-3.26**

Ordered logit estimation of a 1-4 scale of personal economic satisfaction
* t-statistics underneath coefficients

	coefficient	z-score
wealth	0.2075	14.22**
average wealth	-0.1800	-2.71**
small town	-0.0519	-0.69
big city	0.0647	1.08

Ordered logit estimation of a 1-5 scale of happiness
Controls include standard demographic variables and country dummies

	coefficient	z-score
wealth	0.0361	3.26**
socio-economic status	0.0457	1.83
ELQ	0.0704	4.76**
persecon	0.5913	15.34**

Table 7: ELQ and Education Inequality

OLS regression of the 1-10 scale economic ladder question

Controls: standard demographic variables including wealth and country dummies (not shown)

Second regression which included educational inequality clustered by country

	coefficient	z-score		coefficient	z-score
age	-0.0259	-6.29**	age	-0.0248	-5.44**
age squared	0.0002	4.93**	age squared	0.0002	
education	0.0587	18.23**	education	0.0504	5.5**
wealth	0.1883	30**	wealth	0.2187	10.56**
married	0.0340	1.37	married	0.0282	1.12
male	-0.1075	-4.6**	male	-0.1033	-3.75**
health	0.2278	16.25**	health	0.2409	8.7**
unemployed	-0.1033	-2.27**	unemployed	-0.1230	-2.77**
self-employ	-0.0231	-0.85	self-employed	-0.0601	-2.14**
retired	0.0976	1.7	retired	0.0909	1.22
student	0.0976	1.96	student	0.0586	0.76
small town	0.0472	1.2	small town	0.1157	1.26
big city	0.0802	3.01**	big city	0.0758	1.32
			educational inequality (Theil)	-1.1013	-2.13**
constant	2.3861	20.53**	constant	2.1915	13.61
Low point of age: 57.9			Low point of age: 60		

Table 8a: Components of the ELQ and Relative ELQ

OLS regression of a 1-10 scale of the economic ladder question

Controls include standard demographic variables and country dummies, clustered by country/city size

Average ELQ is computed at the country/city size level

ELQ	coefficient	z-score	relative ELQ	coefficient	z-score	relative ELQ	coefficien	z-score
age	-0.026	-5.98 **	age	-0.026	-6.14 **	age	-0.026	-6.040 **
age squared	0.000	4.56 **	age squared	0.000	4.59 **	age2	0.000	4.580 **
education	0.059	11.05 **	education	0.056	10.74 **	yedu	0.057	10.830 **
wealth	0.188	21.71 **	wealth	0.184	22.21 **	wealth	0.186	22.000 **
married	0.034	1.52	married	0.030	1.32	married	0.031	1.390 *
male	-0.107	-4.29 **	male	-0.106	-4.26 **	male	-0.106	-4.280 **
health	0.228	9.59 **	health	0.226	9.57 **	health	0.227	9.580 **
unemployed	-0.103	-2.59 **	unemployed	-0.105	-2.6 **	unemp	-0.105	-2.600 **
self-employed	-0.023	-0.85	self-employed	-0.016	-0.6	selfemp	-0.019	-0.680
retired	0.098	1.44	retired	0.091	1.34	retired	0.093	1.380
student	0.098	1.69	student	0.091	1.58	student	0.093	1.620
small town	0.047	0.69	small town	0.214	4.47 **	smalltown	0.157	4.080 **
big city	0.080	2.12 **	big city	-0.291	-8.74 **	bigcity	-0.164	-5.490 **
						avgELQ	-0.341	-6.750 **

Table 8b: Average and Relative ELQ and Happiness

OLS regression of a 1-5 scale of happiness

Controls include standard demographic variables and country dummies, clustered by country/city size

Average ELQ is computed at the country/city size level

happy	coefficient	z-score
average ELQ	0.1297	1.76
relative ELQ	0.1245	6.65 **

OLS regression of a 1-5 scale of happiness

Controls include standard demographic variables and country dummies, clustered by country/city size

Average personal economic satisfaction is computed at the country/city size level

happy	coefficient	z-score
average personal economy	1.006	4.12 **
relative personal economy	0.623	14.9 **

Table 9a: Generational POUM

OLS regression of a -10-10 scale of the generational POUM question

Controls include standard demographic variables and country dummies

	coefficient	z-score
age	-0.0162	-3.33 **
age2	0.0001	2.54 **
yedu	-0.0097	-2.57 **
wealth	-0.0260	-3.52 **
married	0.0185	0.63
male	-0.0302	-1.09
health	0.0554	3.36 **
unemp	0.1203	2.23 **
selfemp	-0.0159	-0.5
retired	-0.1544	-2.29 **
student	0.0655	1.09
smalltown	-0.1350	-2.88 **
bigcity	0.0935	2.98 **

Low point of age: 59.43

Table 9b: Time to Achieve Desired Standard of Living

	How long will it take you to achieve your desired standard of living?							
City size	Will never achieve	21-30 years	11-20 years	6-10 years	3-5 years	1-2 years	Have achieved already	Total
Small town	18%	14%	17%	12%	12%	11%	7%	13%
Medium city	38%	35%	38%	34%	36%	39%	39%	36%
Big city	44%	51%	46%	54%	52%	50%	55%	51%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Ordered logit regression of a 1-7 scale of the time to achieve desired standard of living question

Controls include standard demographic variables and country dummies

	coefficient	z-score
age	0.0139	2.6 **
age2	-0.0001	-1.15
yedu	-0.0354	-8.93 **
wealth	-0.0558	-7.41 **
married	-0.0799	-2.6 **
male	0.0975	3.45 **
health	-0.2300	-13.3 **
unemp	0.0763	1.4
selfemp	-0.0845	-2.55 **
retired	-0.3161	-4.01 **
student	0.1955	3.52 **
smalltown	0.1343	2.78 **
bigcity	0.0216	0.67

Dependent variable monotonically increasing with age within the sample range

Table 10a: Cost of Unemployment

Ordered logit regression of a 1-5 scale of happiness for 2004 data set
Controls include standard demographic variables and country dummies

	coefficient	z-score
unemployed	-0.342	-6.05 **

Ordered logit regression of a 1-5 scale of happiness for pooled 1997-2004 data set
Controls include standard demographic variables and year dummies

	coefficient	z-score
unemployed	-1.347	-5.18 **
unemployed*gini coefficient	0.018	3.80 **

Ordered logit regression of a 1-5 scale of happiness
Controls include standard demographic variables and country dummies
Costs of unemployment by education level. Base case is illiterate

	coefficient	z-score
unemployed (incomplete primary)	-0.485	-3.83 **
unemployed (completed primary)	-0.205	-1.63
unemployed (incomplete secondary)	-0.511	-4.46 **
unemployed (completed secondary)	-0.562	-5.17 **
unemployed (incomplete tertiary)	0.027	0.13
unemployed (completed tertiary)	-0.246	-1.39

Table 10b: Fear of Unemployment

Ordered logit regression of a 1-5 scale of fear of unemployment
Controls include standard demographic variables (except dummy variables for jobs that are not in the workforce) and country dummies

	coefficient	z-score
small town	-0.256	-4.34 **
big city	0.081	1.87

Ordered logit regression of a 1-5 scale of fear of unemployment
Controls include standard demographic variables (except dummy variables for jobs that are not in the workforce)

	coefficient	z-score
gini coefficient	0.017	4.45 **

References

Acemoglu, D., Robinson, J. 2002. The Political Economy of the Kuznets Curve. Review of Development Economics 6(2), 183-203.

Aitchison, J., 1957. The Lognormal Distribution. Cambridge University Press, Cambridge.

Alesina, A, Di Tella, R., MacCulloch, R., 2004. Inequality and Happiness: Are Europeans and Americans Different? Journal of Public Economics 88, 2009-2042.

Arrow, K., Bowles, S., Durlauf, S., 2000. Meritocracy and Economic Inequality. Princeton University Press, Princeton, N.J.

Ball, R, Chernova, K., 2004. Absolute Income, Relative Income, and Happiness. Presented at the International Society of Quality of Life Studies.

Barro, R., 2001. Inequality, Growth, and Investment. In: Hassett, K. Hubbard, R.G. (Eds.), Inequality and Tax Policy. The AEI Press, Washington, D.C., pp. 1-38.

Behrman, J., Birdsall, N., Szekely, M., 2001. Economic Reform and Wage Differentials in Latin America. Carnegie Endowment Working Papers.

Birdsall, N., Ross, D., Sabot, R, 1995. Inequality and Growth Reconsidered. World Bank Economic Review 9, 477-508.

Birdsall, N., Londono, J.L., 1997. Asset Inequality Matters: An Assessment of the World Bank's Approach to Poverty Reduction. American Economic Review 87, 32-37.

Birdsall, N., Graham, C., Sabot, R. (Eds.), 1998. Beyond Trade-offs: Market Reforms and Equitable Growth in Latin America. The Brookings Institution Press and the Inter-American Development Bank, Washington, D.C.

Birdsall, N., 2000. Unequal Societies: Income Distribution and the Social Contract. American Economic Review 90, 96-129.

Benabou, R., Ok E., 2001. Social Mobility and the Demand for Redistribution: The POUM Hypothesis. Quarterly Journal of Economics 116, 447-487.

Blanchflower, D., Oswald, A., 2003. Does Inequality Reduce Happiness? Evidence from the States of the USA from the 1970's to the 1990's. Mimeo.

Blanchflower, D., Oswald, A., 2004. Well-Being Over Time in Britain and the USA. Journal of Public Economics 88, 1359-1387.

Bertrand, M, Mullainathan, S., 2001. Do People Mean What They Say? Implications for Subjective Survey Data. American Economic Review 90, 67-72.

Boeri, T., Borsh-Supan, A., Tabellini, G., 2001. Welfare State Reform: A Survey of What Europeans Want. Economic Policy, London.

Brown, G., Gardner, J., Oswald, A., Qian, J., 2004. Does Wage Rank Affect Well Being? Presented to Brookings/Warwick Conference on "Does Inequality Matter? Lessons from the Economics of Happiness."

Clark, A., 2003. Inequality-Aversion and Income Mobility: A Direct Test. DELTA Working Paper 2003-11.

Clark, A., Oswald, A., 1994. Unhappiness and Unemployment. The Economic Journal 104, 648-659.

Contreras, D., Cooper, R., Herman, J., Neilson, C., 2004. Dinamica de la Pobreza y Movilidad Social: Chile 1996-2001. Mimeo.

Cummins, R., Gullone, E., 2002. Why We Should not Use 5-point Likert Scales: The Case for Subjective Quality of Life Measurement. In: Proceedings: Second International

Conference on Quality of Life in Cities. National University of Singapore, Singapore, pp. 74-93.
Diener, E., Sandvik, E., Seidlitz, L., Diener, M., 1993. The Relationship Between Income and Subjective Well-Being: Relative or Absolute? Social Indicators Research 28, 195-223.
Diener, E., Biswas-Diener, R., 2000. Income and Subjective Well-Being: Will Money Make Us Happy?, mimeo.
Di Tella, R., MacCulloch, R., 2003. Income, Happiness, and Inequality as Measures of Welfare. Presented at the Brookings-Warwick University Conference on "Why Inequality Matters: Lessons for Policy from the Economics of Happiness."
Easterlin, R., 1974. Does Economic Growth Improve the Human Lot? Some Empirical Evidence. In: David, P., Reder, M. (Eds.), Nations and Households in Economic Growth. Academic Press, New York.
Easterlin, R., 1995. Will Raising the Incomes of All Increase the Happiness of All? Journal of Economic Behavior and Organization 27, 35-48.
Easterlin, R., 2001. Life Cycle Welfare: Trends and Differences. Journal of Happiness Studies 2, 1-12.
Easterlin, R., 2003. Income and Happiness: Towards a Unified Theory. The Economic Journal 111, 465-484.
Eggers, A., Gaddy, C., Graham, C., forthcoming. Unemployment and Well Being in Russia in the 1990's: Can Society's Suffering Be Individuals' Solace? Journal of Socio-Economics.
Filmer, D., Pritchett, L., 2001. Estimating Wealth Effects without Expenditure Data-or Tears: An Application to Educational Enrollments in States of India. Demography 38(1), 115-132.
Frank, R., 1999. Luxury Fever: Money and Happiness in an Era of Excess. The Free Press, New York.
Frey, B., Stutzer, A., 2002. What Can Economists Learn from Happiness Research? Journal of Economic Literature 20, 402-435.
Frey, B., Benz, M., Stutzer, A., 2004. Introducing Procedural Utility: Not Only What but Also How Matters. Journal of Institutional and Theoretical Economics 160 (3), 377-401.
Graham, C., 2003. The Role of Government in Enhancing Opportunities for the Poor: Economic Mobility, Public Attitudes, and Public Policy. In: Pathways Out of Poverty: Private Firms and Economic Mobility in Developing Countries. Kluwer Academic Publishers, Boston.
Graham, C., Pettinato, S., 2001. Happiness, Markets and Democracy: Latin America in Comparative Perspective. Journal of Happiness Studies 2(3), 237-268.
Graham, C., Pettinato, S., 2002a. Frustrated Achievers: Winners, Losers, and Subjective Well Being in New Market Economies. Journal of Development Studies 38(4), 100-140.
Graham, C., Pettinato, S., 2002b. Happiness and Hardship: Opportunity and Insecurity in New Market Economies. The Brookings Institution Press, Washington, D.C.
Graham, C., Young, P. Ignorance Fills the Income Gulf. The Boston Globe, (June 23, 2003).
Graham, C., Eggers, A., Sukhtankar, S., 2004. Does Happiness Pay? Some Evidence from Panel Data for Russia. Journal of Economic Behavior and Organization 55.
Graham, C., Sukhtankar, S., 2004. Is Economic Crisis Reducing Support for Markets and Democracy in Latin America? Some Evidence from Surveys of Public Opinion and Well Being. Journal of Latin American Studies 36, 349-377.
Graham, C., Young, P., 2004. Rags to Riches? The American Dream is Less Common in the United States than Elsewhere. The Century Foundation Press, Washington, D.C.

Hagerty, M., 1999. Social Comparisons of Income in One's Community: Evidence from Natinal Surveys of Income and Happiness. Mimeo.
Kingdon, G., Knight, J., 2004. Community, Comparisons and Subjective Well-being in a Divided Society. Centre for the Study of African Economies, Department of Economics, University of Oxford WPS No. 2004-21, 2004.
Luttmer, Erzo, 2004.. Neighbors as Negatives: Relative Earnings and Well-Being. Mimeo.
McMurrer, D., Sawhill, I., 1998. Getting Ahead: Economic and Social Mobility in the United States. Urban Institute Press, Washington, D.C.
Moene, K., Wallerstein, M., 2003. Earnings Inequality and Welfare Spending: A Disaggregated Analysis. World Politics 55(4).
Pitketty, T., 1995. Social Mobility and Redistributive Politics. Quarterly Journal of Economics 110, 551-584.
Ravallion, M., 2004. Competing Concepts of Inequality in the Globalization Debate. In: Collins, S., Graham, C. (Eds.), Brookings Trade Forum 2004: Globalization, Poverty, and Inequality. The Brookings Institution Press, Washington, D.C..
Schwarze, J., Harpfer, M., 2004. Are People Inequality Averse and Do They Prefer Redistribution by the State? Evidence from German Longitudinal Data on Life Satisfaction. German Institute for Economic Research, Working Paper No. 707.
Stutzer, A., Lalive, R., 2004. The Role of Social Work Norms in Job Searching and Subjective Well Being. Journal of the European Economic Association, 2(4), 696-671.
Tomes, N., 1986. Income Distribution, Happiness, and Satisfaction: A Direct Test of the Interdependent Preferences Model. Journal of Economic Psychology 7, 425-446.
VTsIOM Press Release no. 113, "Moskva glazami Rossiyan" ("Moscow as seen by Russians"), September 3, 2004.
Young, P., 1995. Equity: In Theory and Practice. Princeton University Press, Princeton, N.J.