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Inequality and happiness: Insights from Latin America*

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Abstract. Inequality is a contentious topic in economics, and its effect on individual welfare remains an open question. We address this question from the perspective of a novel approach in economics – the study of happiness. In this discussion, we draw from our research on the topic, which is based on new empirical evidence from Latin America. We find several differences from studies conducted in the United States and Europe, especially regarding the role of perceptions of mobility and status. We find that inequality has negative effects on happiness in Latin America, where it seems to be a signal of persistent unfairness. Our research also examines the effects of several variables, including wealth, status, and reference group size, on the link between inequality and happiness, with the presumption that these variables can help us identify the channels through which inequality operates as a signaling mechanism.

Key words: happiness, inequality, Latin America, subjective well-being.

1. Introduction

Classical economics, focused on Pareto optimality, has little to say about the relationship between inequality and individual welfare. The few empirical studies that exist find contradictory evidence about the link between the two. In the following discussion of the topic, we rely on our recent research, which is based on new empirical evidence from Latin America. In that work, we explore when inequality matters to happiness and through what channels it works. We find a strong link between inequality and happiness, and gather supporting evidence that the causality is due to inequality's role as a signaling mechanism of persistent disadvantage for the poor in the region. We posit that, among other things, the structure of inequality is different in Latin America than it is in the OECD countries where it has been studied previously. Understanding how inequality affects happiness can contribute to our understanding of the political determinants of particular economic policy choices or support for redistribution, among other questions.

* This article is based on a longer research paper [14], which is under review for publication.
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2. Why a happiness approach?

Social scientists broadly define 'happiness' and/or 'subjective well-being' as satisfaction with life in general. Indeed, the three terms are used interchangeably in most studies. Most studies of happiness are based on some variation of the questions "How satisfied are you with your life?" and "How happy are you with your life?" Economists have found 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 significant validation in subjective well-being surveys, where individuals who report higher levels of happiness smile more and meet other psychological measures of well-being [9].

The happiness questions are often based on a four-point scale, with two answers above and two below neutral.[1] The responses to happiness and life satisfaction questions are very similar, with a correlation coefficient between the two of approximately 0.5.[2] At an individual level, the answers display great variability among individuals and within the same individual depending on variables such as context, mood, and the timing of the survey. 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 finds that Latin American respondents are, for the most part, remarkably similar to those in other countries [16, 17].

Happiness surveys offer several advantages in the difficult exercise of measuring the welfare effects of inequality. Although economists traditionally prefer a revealed-preferences approach, there is an increased willingness to use expressed preferences, such as in surveys or experiments, to analyze questions where a revealed preferences approach provides limited information. Analyzing revealed preferences is impractical in the case of macroeconomic variables such as inequality, for example. Individuals simply do not have enough scope to demonstrate preferences over macroeconomic variables, except through imperfect aggregate behavior like voting. In contrast, it is possible to detect significant differences in expressed well being across various policy regimes. In this vein, happiness has been used to analyze the effects of growth [12], inflation [11], and unemployment [7, 3].

3. Background: Inequality and happiness

Alesina, Di Tella, and MacCulloch [2] find that inequality has generally negative effects on reported well being in Europe and the U.S., 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 notion that a strong belief in exceptional prospects for individual mobility exists 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 [19, 22]. It is also

possible that state level inequality 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 [6] uses data from the British Household Panel Survey (from 1991 to 2002), and finds that regional inequality and life satisfaction are positively correlated. 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 [26], which finds that inequality across districts is positively correlated with well being for men in Canada. Yet he also notes that many other authors have found a negative relationship. Hagerty [20] uses aggregate data from eight countries and shows that average happiness levels are lower in those with wider distributions. Blanchflower and Oswald [5] find a small negative effect of state level inequality in the U.S.

Several authors have also tried to test for effects of inequality above and beyond differences in personal income levels. Di Tella and MacCulloch [10], using the GSS in the United States and the Eurobarometro, 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.

Luttmer [21] uses panel data from the U.S. National Survey of Families and Households, matched with local earnings data from Public Use Micro-data Areas (with around 15,000 inhabitants each) 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 higher earnings of neighbors are associated with lower levels of self-reported financial satisfaction (he does not address happiness with life directly). 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 the shape of income distributions. Most distributions are roughly lognormal, bounded on the left and skewed to the right. Inequality essentially measures the variance of a distribution. Variance in a lognormal distribution occurs disproportionately on the right – in the wealthier parts of the distribution. When inequality increases, the mean increases relative to the median.[3] Thus an increase in inequality is likely to make the median respondent feel worse off because she is objectively further from average income levels than she was before, even though her absolute income level did not change. Our work on Latin America (discussed below) borrows Luttmer's methodology to explore the importance of relative income and status.

Fewer studies of inequality and happiness have been conducted in developing countries. Senik [25], using data from the Russian Longitudinal Monitoring

Survey, finds no relationship between happiness and regional level Gini coefficients in Russia. Graham, Eggers, and Gaddy [13], 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.[4]

Political theories based on rational, utility-maximizing voters suggest that higher levels of inequality result in greater support for redistribution. However, the empirical evidence suggests that the link is tenuous. In a study in Europe, Moene and Wallerstein [23] 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. Benabou and Ok [3] constructed a theoretical model of the "prospect of upward mobility" (the POUM hypothesis) in which poor people oppose redistribution because of the possibility that they or their children may move into a higher income bracket. Graham and Sukhtankar [18] find that respondents who support redistribution in the U.S. are less happy, on average, than others, while in Latin America those who favor redistribution are happier. 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. They posit that this finding could reflect a new enlightened self-interest among elites in the region or, more likely, the historical reality that the poor in the region have benefited disproportionately (less) from public social expenditures.

These studies all focus on income, however, and in our research we purposively try to explore broader definitions of inequality to help explain these findings. In the following sections, we summarize results from our recent research in which we use broader notions of inequality in addition to traditional income-based measures to explore the links between inequality and well being.

4. Data

Our research relied on the annual survey provided by the Latinobarómetro organization (1997–2004). The survey consists of approximately 1,000 interviews in each of 18 countries in Latin America.[5] The survey is comparable to the Eurobarometro survey in design and focus.

A standard set of demographic questions are asked every year. Measuring income in developing countries where most respondents work in the informal sector and cannot record a fixed salary is notoriously difficult. Thus the

Latinobarómetro includes an interviewer's assessment of household socio-economic status (SES) and data on ownership of 11 goods and assets, which we use to compile a wealth index. The goods range from drinking water and plumbing to computers and second homes.[6] There are also standard questions about life satisfaction, perceived economic well being, prospects for the respondent's children, and views about the respondent's country's prospects. Depending on the year, questions have been asked about preference for and satisfaction with market policies and democracy, confidence in public institutions, and views about redistribution.

To avoid large swings in our sample size and ensure question consistency, we primarily use the 2004 data in our regressions. The set contains 19,605 observations, with over 1,000 in each country. We occasionally use data from other years in order to make use of questions that were asked only in that year and in a few instances use the entire pooled set of respondents for 1997–2004.

The determinants of happiness in Latin America seem to be similar to those in the United States and Europe, with the exception of a few variables. (Table I) Women are happier than men in the US, for example, but men are happier than women in Latin America. Happiness has a U-shaped curve with age, which is typical. In Latin America, the low point of happiness is at 51 years, whereas happiness tends to bottom out in the early forties for the U.S. and Europe.[7]

5. Aggregate measures

Aggregate measures of inequality present mixed evidence in our sample. The Gini coefficient of the respondent's country is insignificant in a happiness regression when using cluster controls (at the country level) on the standard errors. We take this as supporting evidence that the nature of inequality in a country is crucial to understanding its impact, and that aggregate, national level measures such as the Gini are very limited in their ability to capture the subtle differences involved. For example, the Gini coefficient of Chile is about the same as in the 1960s, despite the dramatic changes of its economy. There are several other problems with using national-level variables to analyze the effects of inequality on well being, among them regional differences, small sample size, and measurement error. We also looked at education inequality at the national level and got mixed results.

6. Individual measures

Focusing on the effects of inequality on a smaller scale, we attempted to see if reference group income had negative effects on individuals' well being while controlling for individual wealth levels, as Luttmer does for the U.S. Estimating the following equation, where X is a vector of demographic variables and *avgwealth* is the average wealth of the respondent's country, we get the expected

Table I. Determinants of happiness

Independent variables	2004 Data only	
	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	19,152	
Low point of age: 51.5		

*Significant at 5%.
**Significant at 1%.
Ordered logit estimation of a 1–4 scale of happiness.

positive and significant coefficient on *wealth* and a negative but insignificant sign on *avgwealth* (See Table II).

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

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

Table II. Average vs. relative wealth

	Average wealth calculated by:					
	Country	Country	Country city size	Country city size	Country city size	Country city size
Wealth	0.1117583		0.112174		0.0968018	
	5.44**		6.69**		7.96**	
Avgwealth	−0.0523256	0.0594327	0.0543354	0.0578392	−0.0805081	0.0162937
	−0.70	0.78	0.92	0.99	−2.19*	0.42
Relwealth		0.1117583		0.1121746		0.0968018
		5.44**		6.9**		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
Ordered logit estimation of a 1–4scale of hapiness.
*Significant at 5%.
**Significant at 1%.
†When calculating average wealth at the country level, country dummies cannot be included in the regression due to multicollinearity.
‡*t*-statistics underneath coefficients.

implementing this, we ran the above regression again, but calculating average wealth for respondents in the sample according to city size using small, medium, and large cities. 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 allows us to focus on the difference between rural areas, medium-sized cities, and large metropolitan areas. When controlling for nationality, respondents are happier in small cities than in big ones. We again get the positive sign on individual wealth, 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 Luttmer finds for areas in the U.S. Relative differences matter to respondents in Latin America, above and beyond the effects of individual income (Table II).

The above approach is equivalent to that used by Di Tella and MacCulloch [10]. They, however, replace the *wealth* variable with a relative wealth variable (which we call *relwealth*) that is the difference between the respondent's wealth and *avgwealth*. This means that if the coefficients *avgwealth* and *relwealth* (which add up to *wealth*) are the same, 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 the coefficients are the same, then the person's happiness is unchanged. If *relwealth* is more important than *avgwealth* then happiness would decrease.

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

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

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

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

Therefore, the Di Tella and MacCulloch approach provides the same information as the Luttmer technique, but makes explicit the effects of relative and 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. They therefore reject the hypothesis that relative income matters above and beyond total income. We repeat this exercise with our data for Latin America.

In 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. Therefore relative wealth contributes to greater than average happiness for those that are above mean income, and less than average happiness for those who are below mean income (since 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. Each observation for relative wealth is the respondent's distance from the mean wealth level of other respondents in similar size cities in 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 of relative wealth to Latin American respondents, this time using a more localized reference norm.

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.[8] 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 the wealth quintile of respondents. Much of the theory – and some of the empirical work on the role of relative *versus* absolute income – suggests that absolute income gains matter mostly to those below a certain minimum level of income. Relative income matters more 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 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 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 the value of *relwealth* in the quintile group that they correspond to.

When we include our quintile variables (calculated at the country level) in the regression, we find that average wealth remains insignificant, while individuals in quintiles 1, 2, and 5 retain concerns about relative 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*. 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. Inequality in Latin America seems to make the poor much less happy and the rich moderately happier.

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, the reference group with the lowest average wealth. For our larger and wealthier reference groups, in contrast, relative wealth seems to be the only wealth variable that matters.

7. Perceptions of inequality

In our attempts to understand broader definitions of inequality, we also relied on perceptions questions as independent variables.[9] Our work focused on two questions in particular. The first asks, "How satisfied are you with your economic situation." We call this variable *persecon*, for the respondent's personal economic situation. The second asks, "On a scale of one to ten, where one stands for the poorest level of society and ten the richest, where do you place yourself?" This is commonly known as the 'economic ladder' question, which we call ELQ (as a variable) or ELQ (in the text). Since the persecon question is entirely open-ended, we assume that it incorporates all aspects of the respondent's economic situation. The second specifically asks about economic status as compared to others. Therefore, we can use the two to decompose the utility of wealth into status effects and other effects. This decomposition allows us 1) to measure the importance of perceived status apart from other economic variables, and 2) to identify the reference frames that respondents use for assessing their own success.

These variables may do a better job of measuring the elusive concept of status than looking at relative wealth alone. When including four measurements of wealth (personal economy, ELQ, wealth, and socioeconomic status) in a happiness regression, the former two (subjective) variables were more significant, both statistically and practically, than the latter two (objective) variables. There is obviously some collinearity among the variables, but there is also a fair amount of variance (the correlation is <0.6 between any two of them). When we include both *persecon* and ELQ, both are statistically significant. We interpret this as indicating that status has importance outside of a purely economic context, since status is presumably also an important factor in the personal economy question.

The ELQ is also valuable because it helps us identify who people compare themselves with. There is almost an exact linear relationship between a country's average ELQ score and the country's average wealth. This indicates that people in part judge themselves by their place in the international sphere. There is also a strong relationship between a city's wealth (measured both absolutely and relative to the country average) and its average ELQ. This indicates that people also make intra-country comparisons. Finally, there is again a strong relationship between

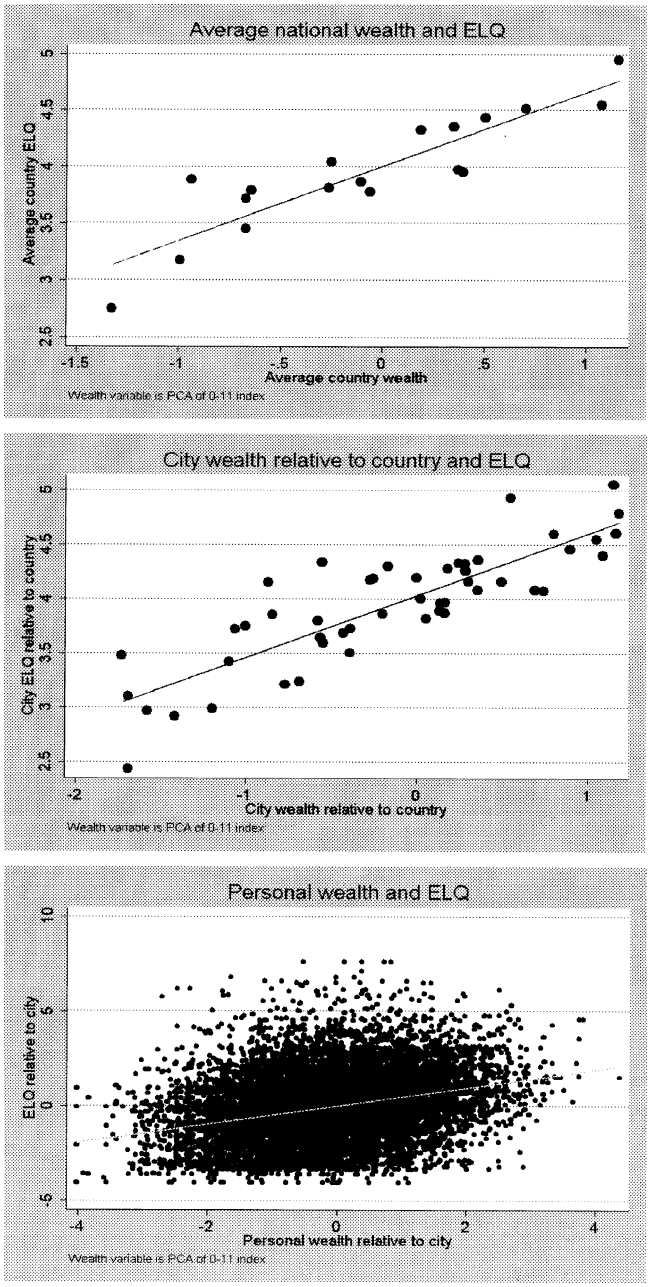


Figure 1. Using ELQ to identify reference groups.

ELQ and the respondent's wealth relative to his or her city's average, indicating local comparisons. These relationships are illustrated in Figure 1.

Again using the Di Tella/Luttmer technique of decomposing the variables into an average and a relative component for ELQ and *persecon*, we could not reject

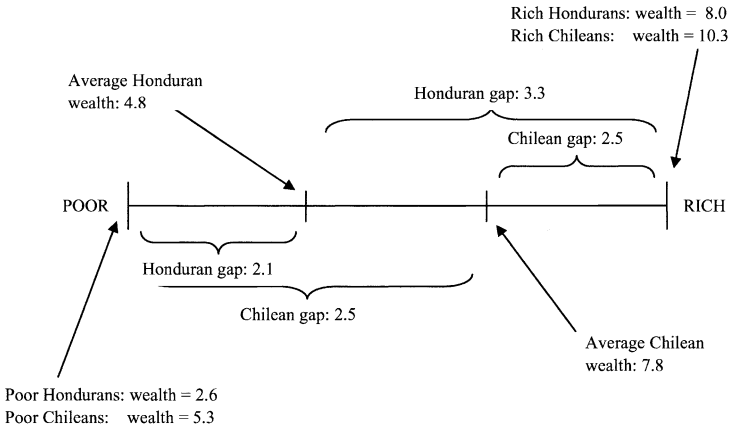
the hypothesis that the coefficients for average and relative personal economy are equal and positive. Therefore, after factoring out status effects, life satisfaction rises directly with increasing economic satisfaction. On the other hand, average ELQ was completely insignificant, while relative ELQ 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-ELQ neighbors. This is very much in keeping with our findings based on objective measures of relative and average wealth.

A related inequality perceptions variable is the question "how long do you think it will take you to reach your desired standard of living?" with answers including "I already have it", categories of years (1 to 2 years; 5 to 10 years, etc.), and "never". Respondents who live in small towns are more likely to report "never" than those who live in medium and large cities. 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. The increasing importance of higher education to success in open economy labor markets (and the related decreasing marginal returns to secondary education) most likely plays a role here [4].

8. Inequality and happiness: An illustration comparing Chile and Honduras

In Figure 2, we illustrate our findings with an exercise comparing hypothetical respondents in the bottom and top quintiles from Honduras and Chile. Average wealth levels on our 0–11 scale wealth index are 4.78 for Honduras and 7.75 in Chile. Average wealth in the bottom quintile in Honduras is 2.64 and in Chile is 5.26 – almost 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, since average wealth is insignificant to happiness, this may not be 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 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 (0.35) times the coefficient from an OLS regression on relative wealth for the region (0.05) then we can assume that poor (quintile 1) respondents in Honduras are about one-half of one percent (0.017 divided by the 4 point happiness scale) happier than poor respondents in



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

Figure 2. Happiness gap in Honduras and Chile.

Chile, even though the average wealth levels of the poor in Chile are over twice as high![10]

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 with this illustration, such as the ordinal nature of the happiness variable. 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 individuals' lives than does moving from somewhat happy to very happy. We cannot resolve that question here.

9. Conclusion

This discussion explored the relationship (or relationships) between inequality and individual welfare. In addition to reviewing the few existing empirical studies on the topic, we discussed our recent research on the effects of relative

income differences, as well as of inequality more broadly defined, 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 where it has been studied.

Various studies of inequality and well being in the United States and Europe find modest effects or 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 a signal of injustice. In Latin America, a region where the gaps between the poor and the wealthy are much larger and more persistent – in part because labor markets and public institutions are less efficient – inequality seems to be a signal of persistent advantage for the wealthy and persistent disadvantage for the poor instead of a signal of future opportunities.

Our findings support the importance of relative differences in perceived status and opportunities 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.

The implications of our findings for policy are less clear. The modest evidence that we have on support for redistribution in Latin America 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 discussion.

In sum, our discussion posits that inequality does indeed matter to individual welfare. Those effects, however, depend heavily on what inequality signals, which in turn depends on the definition of inequality and the context in which it is studied.

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Notes

[1] 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 [8].

[2] Blanchflower and Oswald [5] get a correlation coefficient of 0.56 for British data for

1975–1992 where both questions are available; Graham and Pettinato [17] get a correlation coefficient of 0.5 for Latin American data for 2000–2001, in which alternative phrasing was used in different years.

[3] 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 [1, 23].

[4] 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 [27].

[5] The samples are nationally representative, except for 70% coverage in Chile; 51% in Colombia; and 30% in Paraguay. It is produced by Latinobarómetro, a non-profit organization based in Santiago, Chile (http://www.latinobarometro.org). 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.

[6] The correlation coefficient between the interviewer's assessment of SES and our index is 0.5. We also worked with a latent wealth variable estimated using primary component analysis of the items in the wealth index, but this does not substantively change our results (see [24]).

[7] Rather remarkably, in a recent survey of happiness in four countries in Central Asia we find that the low point on the age–happiness curve is 51, exactly as in Latin America [15].

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

[9] We are aware, of course, of possible problems associated with correlated error terms when using subjective variables on both sides of an equation.

[10] In order to calculate these coefficients, we used OLS to regress happiness, although we used ordered logistic regression in the rest of the paper.

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