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Latin American Middle Classes: The Distance between Perception and Reality

Definitions of the middle class used in the economic literature are mainly based on objective measures that classify as middle class those who are neither at the top nor at the bottom of the distribution of a statistically measurable characteristic such as income or consumption. However, as these definitions often rely on arbitrary boundaries (measures of central tendency, quantiles of the distribution, or absolute thresholds), there is little agreement on what the middle class is. Furthermore, the economic literature has ignored social status as a component of social class, meaning the place in a social hierarchy determined on the basis of life opportunities, lifestyles, and attitudes. Sociologists (Hodge and Treiman 1968; Jackman and Jackman 1982; Wright and Singelmann 1982) argue that no consideration of social class is complete unless it takes into account the perceptions of individuals, as their subjective assessments may not coincide completely with their objective class position and are likely to affect their behavior and choices.

Perceived social rankings are of interest to the new and fast-growing "science of happiness" because they have a significantly stronger association with subjective well-being than objective measures of relative ranking based on reported income (Posel and Casale 2011). Identifying the variables associated with perceived social rankings may reveal the criteria used by individuals

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not just to judge what class they belong to but also to compare themselves with others and to form their own aspirations.

Understanding how perceived social rankings are formed and why those rankings differ from objective rankings may shed light on key political issues, such as attitudes toward redistribution. Preferences for redistribution derive in part from individuals' beliefs on their own position in a social ranking and on what determines such position (Alesina and La Ferrara 2005; Gaviria 2007; Senik 2009). However, those preferences may change when the individuals are confronted with information about their actual standing in the social ranking (Cruces, Perez Truglia, and Tetaz 2013). In a similar way, those who perceive that their social position has declined have more positive attitudes toward redistribution (Guillaud 2011), while those individuals who perceive themselves to have experienced higher mobility are less supportive of redistributive policies (Gaviria 2007). Perceived social ranking and its mismatch with objective social ranking may also influence consumers' aspirations and decisions as well as work attitudes and effort.

This paper aims to contribute to our understanding of perceived social rankings and their relation to objective rankings with a focus on Latin American middle classes. It has three main objectives. The first is to provide a subjective classification of the populations of sixteen Latin American countries into low, middle, and upper classes, based on a self-perceived social ranking. The second is to analyze whether such subjective classification matches a set of standard income-based measures of social class. Since the mismatches between the objective and the subjective classifications are fairly large, the third objective is to explore what factors, in addition to income, are associated with the self-perceived social ranking of Latin American households and to what extent those factors help to explain why so many people classify themselves as middle class when they are not, on the basis of their income alone, middle class.

Literature Review

Previous literature has proposed three alternative ways to explore how survey respondents perceive their own position in society. The so-called Cantril ladder question, which may elicit the subjective perception of social ranking or any other aspect of the respondent's life, asks respondents to place themselves in one of the rungs of a ladder, which may have from three to eleven rungs. Cantril ladder measures have been used by, among others, Riffault

(1991) with data from the Eurobarometer, Mangahas (1995) in his work for the Philippines using data of the Social Weather Station, Ravallion and Lokshin (1999, 2002) in their study on Russia, and Posel and Casale (2011) in a recent study on South Africa. The Social Weather Station, in the Philippines, asks a sample of adults whether they are poor, borderline, or nonpoor. The Eurobarometer asks a similar question but uses a scale from one to seven and identifies as poor those who place themselves on the lowest two rungs. A second alternative, used in work by Cruces, Perez Truglia, and Tetaz (2013), summarized below, is to pose precise questions about an individual's perception of his or her place in the income distribution. The third alternative is to ask specific questions about self-perception of class, such as, Are you middle class? (Nuñez 2005). For the purpose of this paper the latter would appear to be the most appropriate alternative, since we want to focus on perceived versus objective middle class. However, by providing a ranking, the Cantril ladder question is more amenable to complex analyses of mismatches and their determinants.

Several authors have assessed the relationship between objective and subjective social rankings. Ravallion and Lokshin (2002), using survey data for Russia, study the relationship between subjective and objective economic rankings and the determinants of the subjective ranking. People's perceptions of their social ranking are measured with the standard Cantril ladder question: "Please imagine a nine-step ladder where on the bottom, the first step, stand the poorest people, and on the highest step, the ninth, stand the rich. On which step are you today?" The authors assign individuals to categories of welfare ratios (given by total household income y as a proportion of the poverty line z, thus y/z) in such a way that the number of respondents in each category is equal to the number of respondents in the corresponding subjective welfare group. The joint distribution of the household income–based and subjective welfare indicators shows that the matching of household income and subjective welfare rankings is clearly weak: 29.4 percent of adults placed themselves in the lowest two subjective rungs, but less than half of those have incomes below the poverty line. Furthermore, respondents from high-income families were reluctant to put themselves on the top two or three rungs and tended to opt for the middle rung; indeed, the fifth rung (of nine) from the bottom was the most common answer given for the upper 2 percent of incomes, as well as the upper quartile of incomes. With respect to the determinants of perceived economic ranking, Ravallion and Lokshin's (2002) main conclusion is that, though income is a highly significant predictor, perceived social ranking is influenced by many other factors, including health, education, employment

status, assets, relative income in the area of residence (living in a rich area lowers perceived ranking), and expectations about future welfare.

Posel and Casale (2011) use a survey conducted by the Southern African Labour and Development Research Unit, which included the standard Cantril ladder question whereby respondents identified their relative economic rank on a six-rung ladder from poorest to richest. The authors define as perceived middle class those who placed themselves on rungs three and four, and they compare the subjective ranking with an objective ranking based on reported incomes. Only 6 percent of all individuals who are ranked in the richest third of South Africans, in terms of actual per capita household income, perceive that they are among the richest third (63 percent perceive that they are placed in the middle of the distribution, and 32 percent think that they are among the poorest third of South Africans). Of those in the middle third of the population based on reported income, 42 percent identify themselves as middle class, and almost all the rest rank themselves as poor. The highest correspondence between actual and perceived class status occurs among the poorest third: 69 percent of those ranked in the lowest third perceive their relative economic position as corresponding to the bottom two rungs of the economic ladder. Interestingly, the underestimation of class position is considerably larger among ethnic Africans than among whites. Although the authors do not explore the factors related to subjective ranking, they find a very strong and robust association between subjective well-being and subjective social ranking. Their results suggest that perceived social ranking has a significantly stronger relationship with subjective well-being than objective measures based on reported income.

Cruces, Perez Truglia, and Tetaz (2013) apply a tailored household survey conducted in Greater Buenos Aires to test the presence of biases in individuals' evaluations of their own relative position in the income distribution. The question was worded as follows: "There are 10 million families in Argentina. Of those 10 million, how many do you think have an income lower than yours?" The authors find systematic biases in perceptions of own income rank: a significant portion of poorer individuals place themselves in higher positions than they are, while a significant proportion of richer individuals underestimate their rank. Moreover, the bias is significantly correlated with the respondent's relative position within the reference group (as proxied by area of residence). The authors find other relevant results: The mode of the perceptions distribution is given by the fifth decile, with almost 30 percent of respondents placing their households at that level, and almost half in the middle quintile, which is the fifth and sixth deciles. Only about 15 percent

of the respondents place their household's income in the objectively correct decile. Using a correction for measurement error in agents' perceptions, more than 55 percent of the respondents exhibit some degree of bias, with relatively more cases of negative biases (individuals placing themselves below their true ranking) than positive ones. Finally, respondents at the top and the bottom of the objective distribution display substantial negative and positive biases, respectively.

Nuñez (2005) makes use of a survey of employment and unemployment in Greater Santiago, which included the question, "To which of the following socioeconomic groups does your household belong?" The categories presented were upper, middle-upper, middle, middle-lower, and lower. These alternatives were transformed into a five-point scale and compared with the objective income distribution. The author finds that, though there is a significant statistical association between the subjective and the objective classifications, individuals below the median overestimate their relative position and individuals above the median underestimate it. In the sample, nearly half of individuals who belong to the very top of the income distribution identify with the middle socioeconomic groups. Nuñez (2005) also investigated the respondents' beliefs about the actual income distribution of Chile. Both upper- and lower-income individuals have a distorted view of the incomes of the other groups: upper-income individuals believe that the incomes of the poor are higher than they actually are, whereas most of the population in the bottom four quintiles tend to underestimate the income of the highest group.

Other research that has assessed the relation between perceived and actual income distribution of the society at large includes Norton and Ariely (2011). The authors asked a nationally representative online panel to estimate the current distribution of wealth in the United States and compared the responses with the actual distribution. Their results reveal that respondents dramatically underestimated the current level of wealth inequality in the United States, believing that the wealthiest quintile held about 59 percent of the wealth when the actual number is closer to 84 percent.

Taken together, the existing literature indicates that self-rankings of social position offer a distorted picture of actual income rankings and of income distribution. Self-rankings tend to concentrate around the lower-middle points of the scales. Although self-rankings are strongly associated with individuals' incomes, they are also influenced by many other individual and contextual variables. Beliefs about the income distribution are similarly distorted by these biases, as people underestimate income differences with respect to those far away from them in the income scale of their societies.

Data Source and Computation of Income Values

Our main data source is the 2007 Gallup World Poll, a survey conducted in 134 countries, which provides the most extensive coverage of both objective and perceived conditions of quality of life, including economic and social conditions.[1] The samples are representative of the population aged fifteen or over in each country. In this study, we use information on sixteen Latin American countries, the only ones for which the Gallup Poll provides data on both perceived social ranking and on family income. Perceived social ranking is measured with the standard Cantril ladder question, as follows: "Please look at this card [which shows a scale with numbers from zero to ten]. Imagine in one end are located the "Richest people" of [Country] and in the other end are located the "Poorest people" of [Country]. Taking into consideration your current personal situation could you please tell me in which cell you place yourself?"

Information on individual income levels is not accurately reported in the Gallup Poll, but in one question on monthly total household income before taxes, income categories are defined by income brackets (the question is not always answered by the person who best knows the income of the household, as the respondent is a randomly selected household member older than fifteen). The household income responses are expressed in local currency units, and therefore amounts differ across countries.

We follow Gasparini and others (2009) to construct, on the basis of the income information in brackets, the household income variable needed to estimate the income-based definitions of middle class. In their assessment of the Gallup Poll data for the Latin America and Caribbean region, the authors approximate the household-income distribution per country, using information from household surveys to estimate the intrabracket distribution, by assigning random income values in the corresponding income bracket expressed in local currency units. These values were then converted into U.S. dollars using country exchange rates adjusted for purchasing power parity (PPP). Since the data set has information on the number of household members but not their ages, it allows calculation of the per capita household income but not a household income variable adjusted for the demographic composition of the household.

An important advantage of the Gallup Poll is that it allows for international comparisons. Gasparini and others (2009) compare the income distribution

1. A basic description of the survey is at www.gallup.com/consulting/worldpoll/24046/about.aspx.

TABLE 1. Income Distribution and Self-Assessment of Social Position[a]
Percent of individuals

Self-assessment of social position	*Decile of the income distribution*										
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Total*
Poorest	7.8	5.5	+	+	+	+	+	+	*	*	+
1	12.2	8.8	7.8	5.4	5.7	5.0	+	+	+	+	5.5
2	17.6	13.9	11.2	11.2	9.9	8.7	6.3	5.3	+	+	8.7
3	**18.5**	**21.0**	19.0	18.1	17.5	19.0	13.2	14.1	13.8	8.4	16.3
4	17.5	19.3	20.9	21.9	21.2	21.3	22.9	21.3	18.9	14.0	19.9
5	17.2	20.8	**24.1**	**24.7**	**25.1**	**26.2**	**29.7**	**31.2**	**30.2**	**30.7**	**26.0**
6	+	5.8	7.1	8.6	9.9	9.6	12.9	12.4	15.7	18.8	10.1
7	+	+	+	+	5.1	+	6.3	7.5	9.4	13.3	5.0
8	+	+	+	+	+	+	+	+	+	6.4	+
9	*	*	*	*	*	*	*	*	*	+	*
Richest	*	*	*	*	*	*	*	*	*	*	*

Source: Authors' calculations based on Gallup (2007).
a. The data in each column add up to 100 percent. Bold numbers are the modes by column. Grey cells highlight the diagonal.
*Significant at less than the 1 percent level.
+ Significant at the 1–5 percent level.

estimated with the Gallup Poll data and the income distribution obtained from household surveys and find them similar. Although they find that in the Gallup Poll the poorest and richest quintiles are underrepresented (and those in the fourth quintile are the most overrepresented), the ranking of countries by income distribution using either of the two sources of data is similar.

A Subjective Definition of Middle Class

We propose a subjective definition of middle class based on the self-valuation of relative social position presented above. On average, Latin Americans rate their social position at 4.2 on a Cantril ladder with rungs numbered from zero to ten. Roughly two-thirds of Latin Americans classify themselves in rungs 3 through 5, and only about 6 percent place themselves in the four highest rungs (see the last column of table 1). Rung 5 is the mode for the whole sample, which indicates that most people believe they belong to the lower-middle fraction of the social ranking in their countries. Table 1 also shows how those in each objective income decile (of their own countries) place themselves in the ladder-subjective question. The mode is rung 5 for all the deciles, except the two lowest ones, where the mode is rung 3. Although objectively richer people classify themselves on higher rungs, the distribution of responses

TABLE 2. Objective Definitions of Middle Class and Matching Coefficients with the Subjective Class

Definition	*Study*	*Household is middle class if*[a]	*Matching coefficients*[b]
Based on the median (P_{50}) of the income (y) distribution	Davis and Huston (1992)	$0.5 * D^{-1}(p_{50}) \leq y(x) \leq 1.5 * D^{-1}(p_{50})$	45
	Birdsall, Graham, and Pettinato (2000)	$0.75 * D^{-1}(p_{50}) \leq y(x) \leq 1.25 * D^{-1}(p_{50})$	24
Based on percentiles of the income (y) distribution	Easterly (2001)	$D^{-1}(p_{20}) \leq y(x) \leq D^{-1}(p_{90})$	63
	Solimano (2008)	$D^{-1}(p_{30}) \leq y(x) \leq D^{-1}(p_{90})$	64
Based on absolute thresholds	Banerjee and Duflo (2008)[b]	US$2 *PPP per day* $\leq y(x) \leq$ US$10 *PPP per day*	62
	Ravallion (2009)	US$2 *PPP per day* $\leq y(x) \leq$ US$13 *PPP per day*	69
	López-Calva and Ortiz-Juárez (2011)	US$10 *PPP per day* $\leq y(x) \leq$ US$50 *PPP per day*	42
Based on mixed thresholds	Birdsall (2010)	US$10 *PPP per day* $\leq y(x) \leq D^{-1}(p_{95})$	36

Source: Authors' calculations as explained in text. See table 3 for calculation using the definition based on the median income by Davis and Huston (1992), and table 4 for calculation using the definition based on absolute thresholds by Ravallion (2009).

a. Defined in terms of the cumulative distribution $D(y)$, nth percentile P_n, and x's household income $y(x)$.

b. Percentage of correct subjective and objective classifications of those who belong in the middle class.

is not close to a hypothetical northwest-southeast 45-degree diagonal, as would be the case if the subjective and the objective classifications matched perfectly. Therefore, it would be most inadequate to take the simplest option of considering as subjective middle class a central range of the ladder question on social ranking or any other ad hoc threshold. Instead, we propose a definition of subjective social classes that is interrelated with the sizes of the objective classes, using alternative definitions established in the literature on objective middle classes, as explained below.

Table 2 shows alternative definitions of middle class commonly used in the literature. They include measures of central tendency (Davis and Huston 1992; Birdsall, Graham, and Pettinato 2000), measures based on percentiles (Easterly 2001; Solimano 2008), on absolute thresholds (Banerjee and Duflo 2008; Ravallion 2009; López-Calva and Ortiz-Juárez 2011), and on mixed criteria (Birdsall 2010).[2] We focus on two of these definitions: the

2. In addition to the four types of definitions considered, endogenous definitions of middle class have also been proposed. See D'Ambrosio, Muliere, and Secchi (2002); Zhu (2005); Olivieri (2008); Massari, Pittau, and Zelli (2009); Cruces, López-Calva, and Battiston (2010). For instance, the latter propose a nonparametric, polarization-based measure that results in a less volatile middle-class size over time and that accounts for a greater homogeneity within groups and larger differences between groups in terms of socioeconomic characteristics.

range between 0.5 and 1.5 times the median income, introduced by Davis and Huston (1992), and the absolute range of daily incomes between US$2 at 2005 PPP prices (the median value of the poverty line in seventy developing countries) and US$13 (the poverty line in the United States), as proposed by Ravallion (2009). However, the last column of table 2 presents matching coefficients (see below) for the eight measures summarized.

In our measure of subjective social class, we group households in a subjective middle class (by country) having the same size (by number of observations in the sample) as in the objective middle-class definition chosen. The procedure is as follows. First, we generate uniformly distributed random values on a range of +/– 0.5 to translate the categorical question of social ranking into a continuous variable for all the individuals in our sample. Second, we rank the observations in the sample for each country from the lowest to the highest value of this continuous variable and classify the lowest as subjective poor until the subjective-poor group size equals the objective-poor group size in that country. We repeat the second step to classify the following individuals in the sample by country into subjective middle class and rich, using the objective middle-class size and the objective rich-group size as references. As a result, for each class within a given country, the corresponding objective and subjective measures have approximately the same relative size. In spite of its possible limitations, the procedure allows for direct comparisons with the objective definitions of middle class without imposing ad hoc criteria on the subjective data.

Table 3 presents the results of the computations using the two definitions of middle class listed in table 2: the absolute threshold of $2–13 a day and the range of 0.5–1.5 times the median income. By construction, the relative sizes of the classes are the same in the objective and the subjective classifications:[3] in panel A, which uses the absolute threshold, roughly 17, 66, and 18 percent for the poor, middle, and rich classes, respectively. However, those that are classified consistently (and therefore appear on the northwest-southeast diagonal of the table) represent only 57.9 percent of the total sample. Of the total sample, 45.5 percent are consistently classified as middle class in the objective and the subjective scales. Their matching coefficient is 69.3 percent,[4] defined as the percentage of correct subjective and

3. Apart from minor differences that are below 1 percent for all countries. This is a result of the inability to classify some individuals by one of the two criteria because some of them have missing values in either the income variable or the subjective classification variable.

4. That is, 45.53/65.68 in panel A of table 3.

TABLE 3. Matching Objective and Subjective Definitions of Middle Class

	Objective			
Subjective	*Poor*	*Middle class*	*Rich*	*Total subjective*
Panel A: Based on absolute threshold[a]				
Poor	5.88	9.93	0.98	16.79
Middle class	10.13	45.53	10.02	65.68
Rich	0.85	10.24	6.44	17.53
Total objective	16.85	65.7	17.45	100
Panel B: Based on median income[b]				
Poor	12.98	11.02	5.09	29.09
Middle class	11.91	18.79	11.05	41.75
Rich	4.61	11.97	12.57	29.16
Total objective	29.51	41.78	28.71	100

Source: Authors' calculations based on Gallup (2007).
a. US$2–13 PPP a day.
b. 0.5 to 1.5 times the country median income.

objective classifications of those belonging to the middle class by country (the matching coefficients for the eight definitions are reported in the last column of table 2). In a similar way, in panel B, which uses the median income to define classes, those on the diagonal represent only 44.3 percent of the total sample, and around 19 percent of the whole sample are consistently classified as middle class in the objective and the subjective scales, with a matching coefficient of 45 percent.[5]

Based on the two definitions selected, table 4 reports the relative size of the middle class in each of the sixteen countries in the sample and further computation results by country. With the absolute income definition, on average two-thirds of the populations of the Latin American countries are middle class, whereas with the median income definition about 42 percent are. The average matching coefficients for the whole sample, as mentioned, are 69 percent and 45 percent, respectively. Matching coefficients across countries show little variation around these averages. Despite the mismatches, there is a positive and significant degree of correlation between each objective measure of social class and the subjective definition. For the whole sample,

5. That is, 18.79/41.75 in panel B of table 3.

TABLE 4. Middle Class Size, Correlations, and Matching Coefficients between Objective and Subjective Classifications

	Middle class size		*Correlation*[a]		*Matching coefficient*[b]	
	Based on absolute thresholds[c]	*Based on the median*[d]	*Based on absolute thresholds*[c]	*Based on the median*[d]	*Based on absolute thresholds*[c]	*Based on the median*[d]
Country						
Argentina	57	46	0.196**	0.196**	62	47
Bolivia	64	42	0.186**	0.186**	67	45
Brazil	67	45	0.166**	0.166**	68	49
Chile	71	45	0.341**	0.341**	77	52
Costa Rica	60	42	0.280**	0.280**	65	41
Dominican Republic	61	34	0.292**	0.292**	66	33
Ecuador	69	44	0.267**	0.267**	72	46
El Salvador	66	43	0.218**	0.218**	71	47
Guatemala	71	42	0.174**	0.174**	73	48
Honduras	73	45	0.087**	0.087**	72	45
Mexico	66	40	0.308**	0.308**	71	45
Nicaragua	65	41	0.268**	0.268**	70	46
Panama	70	41	0.147**	0.147**	70	45
Paraguay	65	39	0.257**	0.257**	70	44
Peru	64	39	0.247**	0.247**	67	44
Uruguay	59	39	0.160**	0.160**	60	36
Average	66	42	0.285***	0.245***	69	45

Source: Authors' calculations based on Gallup (2007).

a. Kendall's tau coefficient: ***significant at the 99 percent level; **significant at the 95 percent level; *significant at the 90 percent level.

b. Percentage of correct subjective and objective classifications of those belonging to the middle class.

c. US$2–13 PPP a day.

d. 0.5–to 1.5 times the country median income.

the high significance of the Kendall correlation coefficients of the relationship between subjective and objective social classes suggests that ranking by income is indeed relevant in the subjective valuation that individuals make of their relative wealth condition.[6] However, that those coefficients are consistently below 0.3 indicates that there are other factors affecting this valuation, to which we now turn.

6. Kendall's rank correlation provides a distribution-free test of independence and a measure of the strength of dependence between two variables and the similarity between two different orderings.

The Correlates of Perceived Social Position

Apart from income, what other factors seem to influence how people see themselves along a relative social scale within their countries? Answering this question may provide a useful characterization of the subjective middle classes in Latin America. To identify the factors that people take into consideration when placing themselves on a subjective social ranking, we posit that perceived social ranking takes into account all forms of wealth, actual and perceived. Following the classification proposed by the Inter-American Development Bank (2008), we organize those factors into three main categories: capabilities, relational goods, which include family conditions and other interpersonal conditions, and material conditions of life, which comprise income, financial circumstances, and physical assets.

The first category, capabilities, includes variables that are specific to the individual such as gender, age, health status (which can be measured by the EQ-5D, a standardized instrument that inquires about the presence of health problems in five dimensions: mobility, self-care, usual activities, pain or discomfort, and anxiety or depression), and education level. Capabilities are necessary conditions for personal fulfillment and social development (Sen 1985).[7]

The second category, relational goods, is the group of variables referring to the individual in relation to others. It includes family conditions, such as marital status and childbearing, and other interpersonal conditions that reflect the extent and depth of the individual's relationships, including having friends to rely on, the importance of religion in his or her personal life, being employed, and having a supervisor.

The material conditions of life are subdivided into three groups: income, financial circumstances, and physical assets. The household's income per capita is the most obvious manifestation of wealth. If all forms of wealth were adequately measured through the other variables considered in our model, and if all of them had perfect functioning markets, it would be unnecessary to include income separately in the regression, as total income would correspond to the flow of returns from all the different forms of wealth. Since these conditions are not met, the inclusion of income is clearly warranted.

7. The European Quality of Life-5 Dimensions Index (EQ-5D) is an indicator calculated on the basis of answers to quasi-objective questions of basic individual health conditions. The original EQ-5D studies were conducted in the United Kingdom and then implemented in the United States. See Dolan (1997) and Shaw, Johnson, and Coons (2005).

Financial circumstances comprise actual and perceived circumstances. To summarize the information on access and use of financial services, we have constructed an access to financial services index, calculated with principal components analysis. For its calculation we include the following list of dichotomic variables: whether the individual has a savings account, checking account, ATM card, certificate of deposit, credit card, and savings for retirement. Perceptions of financial circumstances may affect how people see themselves along the social ladder. They are measured with the answers to the questions of whether the individual has shortages of income to cover food costs and housing costs and a composite variable that summarizes the absence of other financial concerns.[8]

Finally, physical assets include variables of ownership of nonfinancial assets such as house, television, computer, automobile, washing machine, and freezer. We also include in this subgroup variables of access to running water and electricity as well as the location (urban or rural) of residence as proxies of the possession of, or access to, other assets.

Apart from the individual-level variables, country dummies are included to control for differences in unobservable country-specific characteristics, such as asset prices and all forms of social capital not differentiated across individuals.

To estimate the correlates of subjective social ranking we implement an ordered logistic regression analysis on the Cantril ladder question variable (see table 5).[9] The main conclusion of our findings is that in judging their social ranking people take into consideration all forms of wealth, not just their current income.

First, individuals' judgment of their social ranking is affected by their human capabilities. Women tend to be more conforming than men as they are more likely to place themselves in the higher rungs of the ladder. Age shows

8. A household head is considered to have financial worries if he or she reports facing one or more of the following problems: not having the capacity to pay for a child's education; fears of not having enough money for retirement; not being able to maintain his or her current standard of living; or not being able to afford the medical costs of a serious illness or accident. The composite variable of not having financial concerns was calculated using the principal components analysis methodology.

9. We evaluate the robustness of this estimation to psychological biases by including a variable named "acquiescence," which captures the differences in individual response styles due to the stronger or weaker tendency to endorse any assertion made in a question (see Krosnick and Fabrigar 1998). In a second robustness exercise we include a set of variables intended to measure psychological traits. Unless mentioned, all the results are robust to these tests. Results are available from the authors on request.

TABLE 5. Factors Associated with Subjective Social Ranking[a]

Capabilities	
Female	0.116***
	(0.062)
Age (years)	–0.028***
	(0.005)
Age squared	0.000***
	(0.000)
Health score (EQ-5D)	0.882***
	(0.212)
Complete primary education	0.197***
	(0.078)
Complete secondary education	0.374***
	(0.111)
Complete higher education	0.582***
	(0.106)
Relational goods	
Married	0.127***
	(0.038)
Divorced	0.185***
	(0.079)
Widowed	0.219
	(0.135)
Has one child	0.138***
	(0.047)
Has two or more children	0.168***
	(0.086)
Considers religion to be important	0.136***
	(0.076)
Has friends	0.348***
	(0.072)
Has employment	0.052
	(0.053)
Has a supervisor	0.005
	(0.059)
Material conditions of life	
Income	
Household's monthly per capita income, US$ PPP, logs	0.267***
Financial circumstances	
Access to financial services index	0.163***
	(0.051)
Does not have shortage of income to cover food costs	0.386***
	(0.055)
Does not have shortage of income to cover housing costs	0.235***
	(0.091)
Not concerned with financial matters	0.261***
	(0.029)

(*continued*)

TABLE 5. Factors Associated with Subjective Social Ranking[a] (*Continued*)

Physical assets	
Owns a house	0.127***
	(0.065)
Access to running water service	0.252***
	(0.092)
Access to telephone service	0.218***
	(0.042)
Has a television	0.246***
	(0.080)
Has a computer	0.233***
	(0.048)
Has an automobile	0.177***
	(0.067)
Has a washing machine	0.147***
	(0.064)
Has a freezer	0.232***
	(0.069)
Lives in an urban area	0.218***
	(0.124)
Observations	8,613
Pseudo R^2	0.094
Log likelihood ln L(β)	−15,564.131

Source: Authors' calculations based on Gallup (2007).
Robust standard errors clustered at the country level are in parentheses. Country dummies are not reported.
***Significant at the 99 percent level.
**Significant at the 95 percent level.
*Significant at the 90 percent level.

the familiar U-shape curve found in happiness studies, which in this context implies that, controlling for income and all the other factors mentioned, self-classification in a social ranking ladder declines with age until about seventy-two years of age and then increases. Although no definite explanation has been given for this pattern, it could be associated with changes in aspirations.[10] This pattern could not be the result of lifecycle factors, since this would imply an inverse U-shape, whereas income and wealth tend to increase with age until about retirement age and then to decline. Other aspects of human capabilities that influence perceived social ranking are health status and education, which is entirely consistent with the hypothesis that human capital is part of wealth, on the basis of which perceptions of social ranking are formed.

10. Blanchflower and Oswald (2008, p. 1747) suggest that, in order to explain the U-shaped curve in well-being, "one possibility is that individuals learn to adapt to their strengths and weaknesses, so in mid-life quell their infeasible aspirations."

The same goes for the different forms of relational capital, which are sources of interpersonal relationships and support, such as family, friends, and religion. Thus having a spouse and having one or more children are associated with a higher subjective classification. Surprisingly, being divorced, as compared with being single, is also associated with higher subjective social ranking.[11] It should be noted in this respect that our estimates point only to correlates of subjective social ranking, without implying causality (divorce may be more common among those with more wealth but may not necessarily be a source of higher subjective social ranking). Having friends is also associated with higher perceived social ranking, since they may be a source of help and support. However, friendship may mean something different to different social classes. Psychological research (Argyle 1994) shows that the poor tend to choose as friends people to whom they can always turn for help (mainly, their families), whereas the middle class describe friends as people whose company they enjoy. Argyle (1994) also points out that people generally choose friends who are from the same social class or occupational group and that this tendency is stronger at the top and bottom of society (middle-class people deliberately make more friends from different settings). We also observe a similar association between religion and subjective social ranking. Of all the relational goods surveyed in the Gallup World Poll, only having employment (after controlling for income) and having a supervisor are not associated with subjective social ranking among Latin Americans.

Material conditions of life are, of course, central in how people judge their relative standing in society. Income is a strong determinant of subjective social ranking, as already mentioned. Our estimates imply that when income doubles, keeping everything else constant, the probability of being at the sixth rung of the perceived social ranking ladder increases by 1.18 percentage points.[12] But apart from income, many other aspects of the financial and material situation of individuals affect their self-evaluation of relative social ranking. Having access to financial services and ownership of a variety of physical assets certainly contributes to feeling richer. Perceived social ranking is strongly associated with feelings of economic vulnerability (as cap-

11. This result is not robust to the inclusion of the variable "acquiescence."

12. By way of comparison, using the same Gallup data set and the question "On what step of the ladder do you feel currently, with the highest step (10) representing the best possible life for you and the lowest step (0) representing the worst for you?" the ceteris paribus effect of doubling income implies that the probability of being at the sixth rung in the life-satisfaction 0–10 scale increases by 0.37 percentage points.

tured in the variables not having shortage of income to cover food, not having shortage of income to cover housing costs, and not being concerned with financial matters). These results are in line with those of Solimano (2008), who finds a positive correlation between the size of the middle class and both the country's income per capita and the level of net wealth made up of physical and financial assets, housing, and debts. Finally, perceived social ranking is higher in urban areas.[13]

Some of the coefficients of the country dummies (not shown) are significant, indicating that people of some countries tend to classify themselves in higher rungs of the wealth ladder than those of other countries, irrespective of their personal capabilities, relations, and belongings. We find no association between the coefficients of those country dummies and variables that reflect the level of development or the quality of the institutions of the countries (see below for further detail).

Our results are largely consistent with those of Ravallion and Lokshin (2002) for Russia, where perceived social ranking is influenced not just by income but also by marital status, family size and composition, education, health, employment status, and ownership of several assets (car, freezer, washer, television, and video cassette recorder).

Sources of Conflicts between Actual Wealth and Perceived Wealth

The final step in our investigation is aimed at understanding what makes people think they are middle class when they are objectively classified as either poor or rich on the basis of their income. The inconsistency between objective and subjective social class has its origins, according to sociologists, in the imperfect correlations among income, occupation, education, and some other factors such as local economic conditions, employment status, gender, marital status, talent, and luck that create class ambivalence (Hout 2008).

We focus on the same two alternative objective definitions of middle class used in previous sections. We use multinomial regressions (see results in table 6) where the dependent variable is a categorical variable that equals 1 if an individual who is objectively poor self-classifies as middle class, 2 if an individual who is objectively middle class self-classifies as middle class, and 3 if an individual who is objectively rich self-classifies as middle class. Thus we have a set of results for a definition of middle class based on absolute

13. This result is not robust to the inclusion of the variable "acquiescence."

TABLE 6. Factors Associated with Self-Classification as Middle Class among the People Objectively Classified as Rich or Poor, by Definition of Middle Class[a]

	Based on absolute thresholds[b]		*Based on the median income*[c]	
Dependent variable: Subjective social ranking	*(1)*	*(2)*	*(1)*	*(2)*
Capabilities				
Female	0.090	−0.150***	0.074	−0.108
	(0.101)	(0.088)	(0.109)	(0.090)
Age (years)	−0.006	0.004	−0.000	−0.002
	(0.012)	(0.014)	(0.017)	(0.019)
Age squared	0.000	−0.000	0.000	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Health score (EQ-5D)	−0.007	0.548	−0.074	0.719***
	(0.304)	(0.399)	(0.271)	(0.351)
Complete primary education	−0.257	0.159	−0.211	0.122
	(0.157)	(0.207)	(0.130)	(0.190)
Complete secondary education	−0.753***	0.770***	−0.616***	0.526***
	(0.128)	(0.201)	(0.152)	(0.154)
Complete higher education	−1.186***	1.280***	−1.062***	1.063***
	(0.255)	(0.233)	(0.302)	(0.165)
Relational goods				
Married	−0.292***	0.156	−0.191***	0.108
	(0.089)	(0.106)	(0.103)	(0.137)
Divorced	−0.192	−0.001	−0.626***	−0.091
	(0.197)	(0.219)	(0.145)	(0.232)
Widowed	−0.331	0.038	0.095	−0.609***
	(0.269)	(0.306)	(0.318)	(0.284)
Has one child	0.938***	−1.172***	0.539***	−1.007***
	(0.134)	(0.130)	(0.174)	(0.144)
Has two or more children	1.684***	−2.464***	1.136***	−2.084***
	(0.181)	(0.133)	(0.254)	(0.166)
Considers religion to be important	−0.085	−0.089	0.058	−0.214***
	(0.121)	(0.108)	(0.121)	(0.124)
Has friends	−0.291***	0.256***	−0.241	0.121
	(0.140)	(0.127)	(0.156)	(0.156)
Has employment	−0.204	0.141	−0.207	−0.040
	(0.139)	(0.191)	(0.128)	(0.143)
Has a supervisor	−0.191	0.200	−0.142	0.203
	(0.137)	(0.230)	(0.159)	(0.198)
Financial circumstances				
Access to financial services index	−0.762***	0.767***	−0.557***	0.597***
	(0.151)	(0.085)	(0.161)	(0.086)
Does not have shortage of income to cover food costs	−0.419***	0.427***	−0.386***	0.150
	(0.110)	(0.116)	(0.143)	(0.183)
Does not have shortage of income to cover housing costs	−0.018	0.145	−0.190	0.131
	(0.148)	(0.204)	(0.134)	(0.131)
Not concerned with financial matters	−0.194***	0.253***	−0.090	0.248***
	(0.057)	(0.048)	(0.070)	(0.071)

(*continued*)

TABLE 6. Factors Associated with Self-Classification as Middle Class among the People Objectively Classified as Rich or Poor, by Definition of Middle Class[a] (*Continued*)

	Based on absolute thresholds[b]		*Based on the median income*[c]	
Dependent variable: Subjective social ranking	*(1)*	*(2)*	*(1)*	*(2)*
Physical goods				
Owns a house	0.041	−0.048	0.115	0.047
	(0.095)	(0.102)	(0.092)	(0.074)
Access to running water service	−0.213***	0.067	−0.240***	0.108
	(0.115)	(0.303)	(0.100)	(0.235)
Access to telephone service	−0.484***	0.105	−0.466***	0.304***
	(0.079)	(0.110)	(0.104)	(0.110)
Has a television	−0.387***	0.214	−0.284***	−0.070
	(0.089)	(0.376)	(0.161)	(0.166)
Has a computer	−0.203	0.622***	−0.230	0.379***
	(0.213)	(0.084)	(0.233)	(0.055)
Has an automobile	−0.390***	0.764***	−0.553***	0.589***
	(0.130)	(0.103)	(0.137)	(0.099)
Physical goods				
Has a washing machine	−0.583***	0.601***	−0.497***	0.651***
	(0.158)	(0.119)	(0.143)	(0.100)
Has a freezer	−0.560***	0.150	−0.393***	0.177
	(0.163)	(0.183)	(0.170)	(0.115)
Lives in an urban area	−0.429***	0.320***	−0.381***	0.126
	(0.092)	(0.135)	(0.128)	(0.160)
Constant	−0.012	−4.173***	1.069***	−2.647***
	(0.635)	(0.598)	(0.590)	(0.645)
Observations	5,719		3,625	
Country dummies	Yes		Yes	
Pseudo R^2	0.286		0.228	

Source: Authors' calculations based on 2007 Gallup Poll.

a. The model estimated is a multinomial logit with base outcome full middle class, that is, people who are objectively middle class and subjectively middle class. Column 1 = Objective poor–subjective middle class versus full middle class. Column 2 = Objective rich–subjective middle class versus full middle class. Country dummies are not reported.

b. US$2–13 PPP a day.

c. 0.5–1.5 times median income of country.

Robust standard errors clustered at the country level are in parentheses.

***Significant at the 99 percent level.

**Significant at the 95 percent level.

*Significant at the 90 percent level.

thresholds and for a definition based on the median of the income distribution. The set of explanatory variables is the same as that in table 5, and the outcome base is category 2 (being middle class both in the objective and the subjective definitions).

Because all forms of wealth, and not just income, are taken into consideration by individuals when judging their relative position in society, many

of those forms help to explain why some income-poor or income-rich individuals see themselves as middle class. Among the capabilities considered, having at least a complete secondary education is a consistent factor that helps explain why some people who are poor on the basis of their income classify themselves as middle class (whereas not having such education makes some rich people see themselves as middle class). Not being in good health contributes to explaining why some people who make more than 1.5 times the median income (and are therefore rich on this criterion) consider themselves middle class. Among the relational goods, having one or more children also consistently helps explain the mismatches, but in a direction opposite to their valuation as wealth: whereas having children is associated with a higher rung on the subjective social ranking, not having children makes some objectively poor people see themselves as middle class (and having children makes some rich people see themselves as middle class). Being married and having friends are relational goods that also help explain the mismatches, although in a less consistent way.

Among the material conditions of life variables, access to financial services, not being concerned with financial matters, having an automobile, and having a washing machine consistently contribute to the mismatches in both directions. Other factors help explain why some poor see themselves as middle class: access to running water service, access to telephone service, having a television, and having a freezer. Since virtually all the objectively rich have these assets, these variables do not contribute much to explaining why some rich people perceive themselves as middle class. Finally, not having a computer contributes to why some objectively rich people (on the basis of their income) perceive themselves as middle class.

The coefficients of the country dummies (not shown) indicate that, in addition to all the individual variables, objectively poor people of some countries tend to classify themselves more often as middle class than those of other countries, and the same is true of objectively rich people. The small number of countries in our sample (sixteen) prevents us from doing a rigorous analysis of the factors associated with those differences. However, and for illustrative purposes only, table 7 (in which the columns correspond to the regressions of table 6) presents pairwise correlations between the country dummy coefficients and indicators of the state of development at the country level, namely, income per capita, life expectancy, and the set of variables of quality of public institutions developed by Kaufmann, Kraay, and Mastruzzi (2009). All the correlations for the dummies derived from the regressions that use the 0.5–1.5 median income criterion of middle class are very high (at

TABLE 7. Correlations of Country-Dummies Coefficients with Country-Level Variables, by Definition of Middle Class[a]

	Based on absolute thresholds[b]		*Based on the median*[c]	
	(1)	*(2)*	*(1)*	*(2)*
GDP per capita (constant 2005 international dollars, logs)	−0.08	0.21	0.78	−0.74
Life expectancy at birth, total (years) 2005	−0.07	0.05	0.75	−0.79
Kaufmann indicators of governance				
Political stability, rescaled 0–1, 2006	−0.30	0.27	0.77	−0.72
Government effectiveness, rescaled 0–1, 2006	0.06	−0.10	0.82	−0.85
Regulatory quality, rescaled 0–1, 2006	0.27	−0.39	0.69	−0.72
Rule of law, rescaled 0–1, 2006	−0.12	−0.01	0.78	−0.81
Control of corruption, rescaled 0–1, 2006	−0.11	−0.11	0.71	−0.76

Source: Authors' calculations based on Gallup (2007) and Kaufmann, Kraay, and Mastruzzi (2007).

a. For these correlations, we use the beta coefficients for the country dummies in each of the multinomial logit models estimated with base outcome full middle class, that is, people who are objective middle class and subjective middle class. Column 1 = Objective poor–subjective middle class versus full middle class. Column 2 = Objective rich–subjective middle class versus full middle class.

b. US$2–13 PPP a day.

c. 0.5–1.5 × country's median income.

least 0.69 in absolute terms) and point in the same direction: in more developed countries, fewer poor people tend to erroneously classify themselves as middle class, and more rich people tend to define themselves as middle class. In other words, the more developed the country, the stronger the downward bias in the subjective classification. (Notice that there are no systematic biases of this type when the objective classification is based on the absolute threshold of US$2–13.) This implies that the relative standards of reference that individuals use to judge whether they are middle class are consistently higher in more developed countries (when the definition of objective middle class is based on relative income).

Conclusions

Sociologists have noted that proper analysis of social classes must consider both objective and subjective factors. However, economic literature often ignores the subjective aspect and opts for social-class analysis based on objective variables such as income and consumption. In this paper we consider both strands of theory and use the subjective perception of social ranking to compare its match with eight alternative, income-based definitions of middle class in Latin America, using the rich data set of the 2007 Gallup World Poll.

The absolute threshold of US$2–13 PPP a day and the interval of 0.5–1.5 times the median income are two objective criteria that are widely used in the economic literature to define the middle class. With the first of these two criteria, only 69 out of 100 people match their objective and subjective classifications as such, and with the second criterion only 45 out of 100 do so. Sociologists argue that inconsistencies between objective and subjective social class are the result of a class ambivalence created by the imperfect correlations among standard economic variables such as income, occupation, education, and some other factors such as local economic conditions, employment status, gender, marital status, talent, and luck.

One of the objectives of this paper is to identify the factors behind the discrepancies between objective and subjective social-class identification. We have found strong and very consistent evidence that people consider many variables other than income when classifying their social ranking. More precisely, they consider all forms of capital, be they personal capabilities, relational goods, or material conditions of life, in their self-assessment of their position in society.

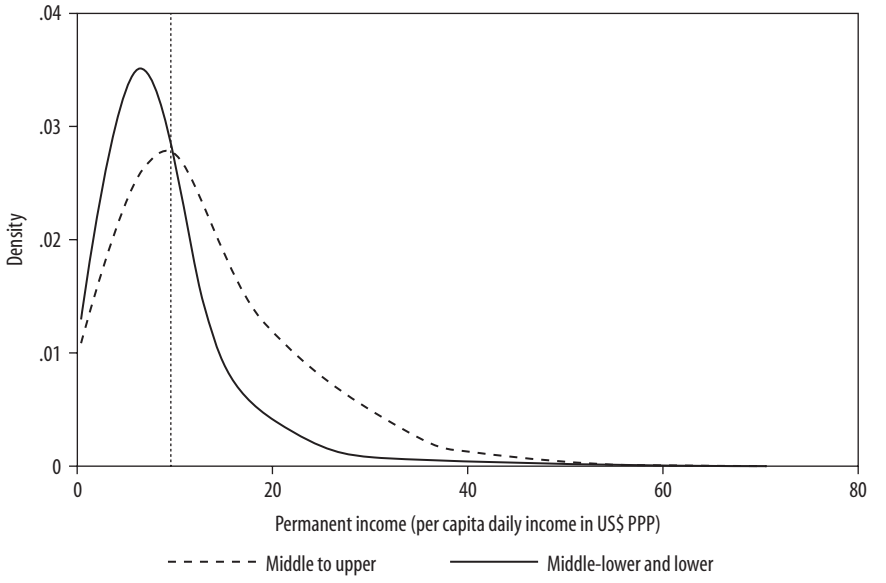
The same set of factors that are associated with the self-ranking of individuals along the social ladder has been used in this paper to explore why people who, based on income alone, are objectively not middle class define themselves as such. Having (or lacking) at least complete secondary education helps to explain why some people who are objectively poor classify themselves as middle class (and why some rich people see themselves as middle class). Not having children makes some objectively poor people see themselves as middle class (and having children makes some rich people see themselves as middle class). Among the material conditions of life variables, access to financial services, no concerns with financial matters, owning an automobile, and owning a washing machine make some poor people self-classify themselves as middle class (and lack of those things makes some rich see themselves as middle class). Access to running water service and telephone service and having a television and a freezer increase the odds that a poor person self-classifies as middle class, and not having a computer raises the odds that someone who is rich self-classifies as middle class. Finally, people of more developed countries within Latin America tend to classify themselves as belonging to a lower class than their exact peers (on the basis of their capabilities, relationships, and belongings) in other, less developed countries, implying that the standards of comparison do increase with social and economic development.

Comment

Jamele Rigolini: Eduardo Lora and Johanna Fajardo's paper touches a very important topic of social analysis: who believes themselves to be middle class, and which personal characteristics drive their beliefs. While characteristics claimed to be associated with middle-class status do affect people's beliefs, many people claim (and are convinced) that they are middle class when in fact they may be much richer or poorer than the people who are statistically in the middle. In a recent report (Ferreira and others 2013), my colleagues and I plot, for Mexico, people's self-reported class status against their per capita household income. In deriving the income variable we faced the same problem as Lora and Fajardo face: value surveys do not carry precise information on income. We tried to solve the problem by imputing income based on asset holdings. The results, shown in figure 1, are striking: while the mode of the self-reported class status does have an association with income, some poor people identify themselves as middle class, and others at the very top of the income distribution claim to be of middle- or even lower-middle-class status.

Interestingly, occupation and occupational status do not carry much more predictive power than income in determining self-reported class status. Yet understanding self-reported class status is of great importance for policy design and political economy analyses. If people with widely different social origins, different occupations, and markedly different earnings all claim to be middle class, how much is the middle class a "true" class, composed of people who live, think, and act alike? While politicians, in their campaigns, may benefit from referring to the needs of the "middle class" because they speak to a class with which many associate, the needs and expectations of the self-reported middle class are likely to be heterogeneous. For policy design, it is therefore advisable to understand the factors that drive a person's identification with the middle class—or, for these purposes, any class—which is the objective of the Lora and Fajardo paper.

FIGURE 1. Distribution of Self-Reported Class Status in Mexico, 2007



Source: Based on Ferreira and others (2013).

Many interesting findings emerge from their analysis, of which I want to highlight two. First, personal characteristics impact in a similar manner the correlation between self-reported status and both the relative (per capita income of 0.5 to 1.5 times the median per capita income) and absolute (per capita income between US$2 and US$13 a day in PPP terms) definitions of the middle class. This is most likely because, in the context of Latin America and the Caribbean, people in the middle of the income distribution tend to have a per capita income that falls within these absolute brackets; therefore relative and absolute definitions of the middle class overlap to some extent. Hence, for policy purposes, the good news is that the "objective" middle class may consist of a more homogeneous group of people that does not vary as much across definitions as in other regions.

Second, the pseudo *R* squared of the regressions remains fairly low, around the order of 0.1. This suggests that, even if the factors identified by the authors affect self-reported class status, they explain only a small part of what drives

people to think of themselves as middle class. Such a low *R* squared is common among values surveys (see, for example, López-Calva, Rigolini, and Torche 2012), in part because such surveys currently capture only a limited number of factors associated with beliefs such as culture, personal history, peer, and family effects. Such an agenda remains an open field for further investigation.

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