

Understanding the Determinants of Household Saving:

Micro Evidence for Latin America

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Abstract*

This paper investigates the main patterns and drivers of the household saving rate in Latin America by assembling a broad dataset of official household surveys for 10 Latin American countries and 27 surveys covering selected years from the 1990s, 2000s and 2010s. Almost half of households display negative saving, which raises suspicions of income underreporting and/or consumption overreporting. The estimations highlight the overriding positive role of income in shaping saving decisions. Government transfers, remittances, self-employment, capitalization pension systems, access to financial services, urban location, and health and education expenses seem to diminish saving, whereas labor formality and homeownership have the opposite effect. In terms of policy implications, the drivers identified are either beyond the realm of direct government intervention or might be modified only in the long run. Moreover, some of these policies entail serious policy trade-offs, as they may boost saving at the expense of other worthy policy goals.

JEL classifications: D91, E21

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1. Introduction

An extensive literature has examined the aggregate determinants of the private saving rate around the globe and in Latin America in particular (see Loayza, Schmidt-Hebbel and Servén, 2000, and IDB, 2013). This active field of research, while having enriched the understanding of this complex and vital economic outcome, falls short of being bulletproof. By its very nature, macroeconomic variables cannot accurately inform about the ultimate factors behind why and how much households save.¹

However, despite the apparent advantages of the microdata approach, little was known until very recently about household saving decisions in Latin America. Among the handful of existing contributions, we can mention Butelmann and Gallego (2000) for Chile and Sandoval-Hernández (2013) for Mexico and Gandelman (2014a,b) for nine economies in the region. Attanasio and Székely (2000) construct synthetic cohorts to compare household saving behavior between two Latin American countries (Peru and Mexico) and two East Asian economies (Thailand and Taiwan).

To broaden our knowledge of this subject, the present study exploits household-level data from Latin American national surveys on income and expenditure. At the end of the day, the goal is to pinpoint socioeconomic and other factors that may constrain the ability of Latin American households to save as well as to draw policy recommendations. Given the stated scope of our research, the main contribution does not lie in methodological innovations but largely in conducting a comprehensive cross-country saving analysis for the Latin American region, covering 10 economies and 27 surveys in selected years for the 1990s, 2000s and 2010s.

Our approach consists of pooling household-level data from all those surveys, adding country and time effects, for a total number of about 392,000 usable observations. This implies that we will not pay much attention to individual country- and time-specific saving behavior, a choice justified by i) the practical difficulty of presenting and assessing in a reader-friendly way evidence from such a large set of countries and years; and ii) the fact that Gandelman (2014a,b) undertakes, for a similar dataset, a country-by-country descriptive, but not econometric, analysis of a some major issues tackled in our paper.

¹ A given macroeconomic regressor may lend itself to more than just one interpretation. For example, the real interest rate is thought to capture intertemporal substitution effects, but may also proxy for aggregate risk and for the degree of financial development, blurring any meaningful inference from the empirical findings.

The paper proceeds as follows. Section 2 briefly reviews the theoretical support for the subsequent empirical analysis of household saving decisions. Section 3 describes the data, and Section 4 presents the econometric results. A closing section discusses the conclusions and policy implications.

2. Literature Review

This section sets the groundwork for the statistical assessment of the various drivers of the household saving rate. As is standard in this field, we will frame our analysis within the canonical permanent income (Friedman, 1957) and the life cycle (Modigliani and Brumberg, 1954) models. While these models have forcefully posited the intertemporal smoothing motive for consumption, subsequent refinements highlighted the major role played by borrowing constraints (see Campbell and Mankiw, 1990, and Deaton, 1991) and precaution in the face of uncertainty (see Kimball, 1990, and Lusardi, 1998) in shaping consumption and saving decisions. Our regressors are conventional empirical counterparts of the theoretical drivers underlying the above theories. In what follows, we list and discuss the proposed list of explanatory variables and succinctly summarize the available evidence for Latin America.

Household head education qualifies as a reasonable proxy for expected future income. Within the permanent income formulation, the saving rate should not be responsive to permanent income but to gaps between current and permanent income. Nevertheless, schooling levels may on their own have a bearing on saving, as educated individuals may display a lower time preference (more patience), and so a clearer inclination to save; in fact, the very decision to study and delay the entry into the labor force reveals such kind of pro-saving behavior. Gandelman (2014b), for a number of economies in the region, Sandoval-Hernández (2013), for Mexico, and Butelmann and Gallego (2000), for Chile, find mixed evidence regarding the education-saving nexus, with several countries and years where the household saving rate drops with educational levels.

In order to further investigate wealth effects on consumption, a house ownership dummy variable will be included in the analysis (see Peltonen, Sousa and Vansteenkiste, 2009, and Butelmann and Gallego, 2000, who both find a positive effect). Homeownership, though, lends itself to several conflicting effects on saving. First, once households become homeowners, they may reduce their saving vis-à-vis non-homeowners. Getting rid of monthly rent may induce

households to save less, especially if they do not have an outstanding mortgage on the property. Second, saving for some time to buy, as opposed to renting, hints at a frugal attitude by household members and a higher saving rate. Third, real estate can serve as collateral when tapping the credit market and thus may loosen financial constraints and reduce the household's saving effort.

Two contrasting views have been put forward in the pension and saving literature (see Engen, Gale and Uccello, 1999). On the one hand, under the standard life cycle model, compulsory social security contributions substitute for voluntary saving. If the anticipated pension benefits are comparable to the gross return of voluntary saving, pension system participation should not change permanent income, and thus neither should change saving decisions. On the other hand, social security membership may increase saving for myopic individuals who do not abide by the permanent income consumption rule and, as a result, do not save at all (or enough) on their own to provide for retirement. A dummy variable will capture this effect, distinguishing contributing from non-contributing workers.² Compounding this theoretical ambiguity, a modified life cycle approach would add new and disparate arguments if: i) faced with borrowing constraints, individuals may not be able to increase consumption in response to the inception of a pension system; ii) an early retirement option is open to the worker, he/she may decide to save more to finance a longer retirement period; and iii) pension benefits resolve the uncertainty linked to earnings and longevity risk, voluntary saving for precautionary reasons may fall. Yet, if the pension system—whether public or private—suffers from a lack of credibility, workers are uncertain as to whether they will actually receive upon retirement the benefits he/she is entitled to, this last effect may be partly neutralized.

A most sensitive issue in running a household saving regression is whether current income should be included within the set of explanatory variables. In the face of solid international evidence of a high correlation between current income and saving rates (see Bozio et al., 2011), many authors claim that current income is an endogenous variable and hence that the estimated coefficient would be biased upward, overstating the intrinsic saving-income link (see Attanasio, 1994, and Dynan, Skinner and Zeldes, 2004). They usually invoke two reasons for this assessment: i) consumption smoothing implies a positive correlation between current

² Unfortunately, for countries having both systems in place, household surveys do not inquire about the regime (pay-as-you-go or capitalization) to which the worker contributes.

income and saving rates due to transitory shocks (people compensate for temporarily high (low) income with more (less) saving and vice versa); and ii) measurement error in income will translate into measurement error of the same sign in saving (since income appears on both sides of the equation). In order to avoid these pitfalls, empirical studies have either deleted current income from the regressors list or have instrumented it with proxies for permanent income, such as education or consumption. By applying the latter approach, a number of papers have confirmed that the rich do in general save more than the poor (see, among others, Dynan, Skinner and Zeldes, 2004, for the United States, and Gandelman, 2014b, for several Latin American countries).

In spite of such sound arguments, there are still some compelling reasons for not writing off the saving-current income link as economically meaningless. First, at odds with the permanent income theory, current income may indeed be a major driver of consumption and saving for financially constrained or myopic individuals (see, for example, Campbell and Mankiw, 1990). Second, higher current income may also be associated with higher saving rates under Stone-Geary preferences, and thus a subsistence income threshold beyond which saving takes place, or—as postulated in the neo-Keynesian models of Lewis, Kaldor and Pasinetti—where entrepreneurs save but workers do not (see Ogaki, Ostry and Reinhart, 1996; Schmidt-Hebbel and Servén, 2000; and Achury, Hubar and Koulovatianos, 2012)). Along these lines, in the macro field, empirical research has identified the level of per capita GDP as a significant explanatory variable (see Loayza, Schmidt-Hebbel and Servén, 2000). Third, measurement errors and transitory income shocks are, unfortunately, not directly observable, so there is no clarity as to the actual size of the coefficient bias. Relatedly, the above endogeneity argument assumes that income and expenditure measurement errors are independent of each other, which is an empirical matter.³ Fourth, if current income turns out to be a relevant regressor, its exclusion on the grounds of endogeneity bias would give rise to a different sort of endogeneity bias, that is, omitted variable bias. For instance, it is well-known that the age-income and the education-income profiles are increasing up to some point. By excluding current income, the age and

³ Similarly, as opposed to current income, permanent income is also unobservable, as it encompasses discounted expected flows of income. In this light, it is difficult to ascertain how good a proxy education or other variables are. For instance, on top of being unobservable, perceptions of permanent income can be time-varying (see Heymann, 2007), while most standard proxies are time-invariant. On a related note, measurement error stems from the fact that Y (income) is part of the residual measurement of saving as $Y-C$, where C is consumption expenditure. However, if the saving rate is defined as $(Y-C)/Y$, the direction and size of the bias becomes even less clear. Defining the saving rate as $(Y-C)/C$ overcomes such an ambiguity.

education coefficients may be overestimated. Finally, the policy prescriptions can be quite different according to the assumptions on which they are based in regard to saving. If one believes that saving decisions have more to do with permanent than current income, saving policy measures affecting the former (but not necessarily the latter), such as fostering education levels, reducing interest rates or infusing optimism on economic prospects, would raise the average saving rate. Conversely, the conviction that current income plays a leading role would render such advice much less appealing. In light of the above controversy, the subsequent econometric work will take a step back and revisit this issue by running and comparing specifications involving both current income and an instrumental variable, as well as excluding income.

As put forward by the life cycle model, the saving rate should be highest among working adults vis-à-vis individuals at both tails of the age distribution. Since the nexus between saving and age is likely to be concave, age and age squared will enter the equation. Likewise, the old dependency ratio (individuals aged 65 and older to those between 15 and 64 years old) and the young dependency ratio (individuals under 15 to those between 15 and 64 years old) will be part of the control set. The evidence, nevertheless, is not utterly conclusive regarding this prediction. For instance, Dynan, Skinner and Zeldes (2004) do not find evidence of dissaving among the elderly in the United States, and neither do Gragnolati et al. (2011) for Brazil. Gandelman (2014a) observes that household heads above 60 display higher saving rates than those aged 40-49 in several Latin American countries. Similar finding is shown for Mexico by Sandoval-Hernández (2013) for a number of surveys in the 1984-2010 period.

An extended version of the life cycle model can accommodate this factual ambiguity, by incorporating longevity and health risks as well as bequest motives among the elderly. In turn, Mody, Ohnsorge and Sandri (2012) argue that the young dependency ratio may not decrease but increase the saving rate whenever parents seek to build a buffer stock to provide for future education and health expenditures for their children.⁴ All in all, the issue must be settled on empirical grounds.

By stifling the ability to finance a wedge between desired current consumption and income, borrowing constraints may increase the household saving rate. The presence of financial

⁴ Gandelman (2014b) argues that just looking at the age of the household heads, as customary in most studies, and not at that of other income-earning members may distort the analysis of the age-saving relationship.

constraints is not easily observable, but some insight can be gained by noticing that people with access to formal lending (including credit cards) or to income sources other than salaries and transfers (such as remittances or rents) are a priori less likely to suffer such constraints. The estimates produced by Sandoval-Hernández (2013) with Mexican data lend support to the above claims, while Butelmann and Gallego (2000) report conflicting findings for different Chilean survey years.

Precautionary saving may appear whenever households decide to build a buffer stock to face a more volatile income in the future (for a given expected future income). Among other possible proxies, self-employment is a priori associated with greater income risk. Receiving government transfers (such as subsidies and pensions) and/or remittances from relatives and friends living overseas would have the opposite effect. Household location may also have to do with saving behavior in this regard. As claimed, among others, by Loayza, Schmidt-Hebbel and Servén (2000), urban households may have a lower saving rate, as consumption opportunities are much broader and accessible than in rural areas. Also, income risks in rural areas are not as diversifiable as in big cities, which may induce a higher saving rate in the former than in the latter. Sandoval-Hernández (2013) obtains results consistent with this hypothesis.

Other frictions can hinder the saving process. For example, the above theories assume access to financial instruments meeting the needs of households with desired positive saving. This is not always the case. For instance, rural families or those living in marginal areas may not have easy access to bank facilities, a major impediment at the time of investing their saving. To test this aspect, a dummy with value 1 for rural families and for those who report possessing a bank account will be incorporated on the right-hand side.

It should be noted that the effect of some regressors may be conditioned by some other variables in the control set, a feature that can be fruitfully addressed via interaction terms. In particular, we are interested in the joint effects of the dependency ratio, the education level and the age of the household head with household income level.

To close this section, in light of the variety of theoretical and empirical effects described above, the overall reading of the literature provides, with few exceptions, little guidance as to what to expect from our estimations.

3. Data

This section describes the main trends in the saving rate and its main correlates across the available national household surveys. The SEDLAC database, administered by CEDLAS (Centro de Estudios Distributivos, Laborales y Sociales) is the most comprehensive source of household survey data for LAC countries. However, to date, household survey collection and analysis around the world has emphasized income rather than expenditures.⁵ That being said, we have put together a new and homogeneous database merging expenditure and other socioeconomic household characteristics for 10 Latin American countries spanning selected years since the 1990s, comprising the following 27 household surveys:

Table 1. Household Survey Coverage

Country	Years
Argentina	2004-2012
Brazil	2003-2009
Colombia	1997-2003-2011
Ecuador	1999-2006
El Salvador	1998-2004-2010
Guatemala	2000-2006-2011
Mexico	1994-2000-2010
Nicaragua	1998-2005-2009
Panama	1997-2003-2008
Peru	1997-2003-2010

This list is dictated by the quest for broad regional coverage (countries in South, Central and North America), economic development heterogeneity and time variation. As is obvious, data availability proves to be a major constraint, as expenditure surveys do not exist for several countries or are not conducted on an annual basis.

⁵ Incidentally, this may explain, as noticed above, the worldwide relative scarcity of micro-level research on consumption and saving.

Our variable of interest is the household saving rate, defined as disposable income minus consumption expenditure as a ratio of disposable income. Since we are concerned with household decisions, disposable income is measured as gross household income (from labor and other sources) net of taxes and retirement contributions, the latter being subtracted because of their compulsory rather than voluntary nature. Besides this standard saving rate, which will be the basis for our econometric work, we have calculated the following alternative measures: i) saving to consumption, which is a monotonic transformation of the traditional saving-to-income ratio, but is not affected by low or zero income;⁶ and ii) The same saving/income and saving/consumption ratios augmented by durables, health and education expenditures. Details on methodological and measurement aspects can be consulted in Annex 1.

Tables 2 to 5 show the above four measures for each survey under analysis. Each table reports the aggregate rate (sum of saving to sum of income or consumption for all households in the survey) as well as the mean and the median household saving rate. The values display an enormous dispersion across countries, years and measures. The mean, for instance, is dramatically different from the aggregate rate, while the latter lies closer to the median. Mean household saving rates are strongly negative in most cases (24 of the 27 surveys). Even medians are negative, for the usual saving-to-income measure, in six cases. This all points to a noteworthy phenomenon: the prevalence of negative saving in a vast number of households. According to Table 2, an average of 45 percent of households across the region have negative saving, with a maximum of 65 percent (El Salvador 2004) and a minimum of 13 percent (Guatemala 2000). Since negative saving implies a financing gap, these figures call for more granular data on financing choices and decisions, which are plainly omitted in most national household surveys. As will be seen shortly, just a handful of surveys include some questions on the use of banking and credit, but even in these cases no questions are asked, when applicable, about the excess of expenditures over income, and the ways that deficit is addressed.⁷

⁶ Out of the total number of households in the dataset, just 0.4 percent report zero income and none negative income.

⁷ Browning and Lusardi (1996) and Verbina (2003) confirm that negative saving rates are common among the lower percentiles of the income distribution for a number of countries. This issue is not observed only in Latin America, but also in more developed economies. For instance, Alves and Cardoso (2010) point out that 90 percent of the Portuguese household saving is generated by 20 percent of the households, and that 30 percent of total households have negative saving rates (-60 percent of disposable income for the first saving decile). For Ireland in 1999/2000, Moreno-Badía (2006) reports a national accounts-based household saving rate of 9.4 percent and a household survey-based value of 3 percent. Moreover, she computes a saving rate of -6 percent and -2 percent for the first and second income quartile, which rises to 14 percent for the fourth quartile.

To summarize the information contained in Tables 2-5, Table 6 shows some statistics on the aggregate saving rate. The regional mean of the saving-to-income ratio is 13.1 percent, which goes up to 29.3 percent after including durables, health and education expenses. The median is quite similar (12.7 percent and 28.1 percent), but these values hide significant variation across surveys, ranging, for the standard saving rate, from -33 percent to +63 percent. This range is even more pronounced for the saving/consumption measure.

As mentioned earlier, measuring saving by means of household data has, unlike national accounts saving, the advantage of providing details on the saving behavior and the socioeconomic profile of each interviewed family. But since conventional saving rates are calculated from national accounts rather than household surveys, it is convenient to compare them. Unfortunately, a large number of countries lack institutional sector accounts separating household and business saving. Taking advantage of a recent dataset assembled by Bebczuk and Cavallo (2014), Table 7 compares both measures for a small set of countries and years with available information. Sizable differences are seen in either direction and for several surveys, such as Brazil 2009 (20.3 percent according to the household survey and 4.5 percent according to national accounts) and Mexico 2000 (3.5 percent and 9.2 percent).⁸

Accurately measured, both sources should yield the same results, but this is obviously not the case. While discrepancies are admissible, the wedge is eye-catching. Ravallion (2000) discusses at length the contrast between social indicators measured via household surveys or national accounts. Differences can be traced to many factors, inter alia, sample coverage (wider for national accounts), data sources (mostly supply-side in national accounts and demand-side in surveys), methodology (consumption measured as a residual—and thus absorbing any existing measurement errors—in national accounts, and directly measured in surveys) and the treatment of certain items (imputed rents, own-account consumption, financial services, and so on). In addition, a pervasive problem with household surveys is limited coverage of income and underreporting of income by well-off families. In turn, potentially misleading saving and consumption data can result from recall expenditure surveys, such as the ones being exploited here (see Battistin, 2003, and Browning, Crossley and Winter, 2014).

⁸ Let us say that these differences are not exclusive of Latin America and extend to developed countries as well. For instance, Le (2007) notes for New Zealand that the average household saving rate for 1984-2001 was -7.3 percent of disposable income according to national accounts and +7.5 percent according to the micro data collected by the Household Economic Survey. For the case of Portugal in 2005-2006, Alves and Cardoso (2010) report a household saving rate of 20 percent based on household surveys and one of 8 percent as calculated in the national accounts.

The underreporting issue is reflected in Table 8, where per capita consumption is compared between the household survey level and its national accounts counterpart.⁹ In all cases, household surveys record a smaller per capita consumption, with a difference of between 8 percent (Panama 2008) and 63 percent (El Salvador 2010), and a mean of 40 percent. This indicates that either the sample is tilted towards lower income households and/or that there exists a major underreporting bias, which should not be ignored when drawing conclusions from the data.

In line with our approach of merging the observations from all surveys into a large dataset of some 392,000 households across all countries and surveys, we next describe some salient features of the data. Since the conclusions are similar based on either denominator (income or consumption), the following tables use the standard saving rate. Table 9 shows the age-income profile of the median saving rate. From the first column, it can be noticed that the saving rate increases with age. Even though it is somewhat reasonable that households with a young head save less than their middle-aged peers, it is more startling that the saving rate of older household heads is the highest among all age groups, especially for heads aged 71 and up. In turn, the last row of the Table 9 shows the median saving rate by income quintile.¹⁰ In line with previous evidence, the saving rate is strongly correlated with current income; it moves from -47.3 percent for the first quintile to 23.4 percent for the fifth. Positive saving-income shows up at all age groups, while the positive saving-age pattern is exclusively explained by the three higher quintiles.¹¹ According to Table 10, the saving rate grows with the education level of the head, with a median saving rate of 6.1 percent for those with primary education, going up to 9.1 percent and 11.9 percent for those with secondary and tertiary education, respectively.

⁹ Bhalla (2002) reports, for a broad sample of developing countries in 1998, that the ratio of consumption per capita as measured in household surveys to the same variable as measured by national accounts amounts to 76.5 percent. For the industrialized world, this number is 63.2 percent. Per capita income cannot strictly be compared because, in view of the lack of institutional sector accounts, national accounts aggregates do not allow us to isolate household income.

¹⁰ The income quintile is that to which a household belongs in its own country, not the overall income distribution for the full dataset.

¹¹ A possible rationale for the increase of the saving rate with age for higher income households is the perception among the latter, unlike those pertaining to lower income brackets, of an expected upward income trend through their lifetime horizon, coupled with a more obvious bequest motive for saving. This is consistent with the rising saving rate with age for heads with secondary and tertiary education, but the opposite for those having attained primary education (see Table 11).

Table 11 revisits the apparent saving-income connection by examining the saving-expenditure profile. If, as postulated by the permanent income theory, household expenditure is less influenced by transitory shocks and thus more stable than income, there should be little to no relationship between saving and expenditure. Far from that, high-expenditure households save distinctly less than low-expenditure households. The asymmetry is most evident when comparing the first and the last expenditure quintiles, whose median saving rates are 23.5 percent and 1.1 percent, respectively. The same pattern is detected not only for the whole sample but also for each age group as well. This means that measurement errors are likely to contaminate both income and expenditure, that is, higher saving households might overstate income and/or understate expenditure. In turn, the fact that saving rates rise (fall) with income (expenditure) casts some doubt about the lack of correlation between income and expenditure measurement errors, as assumed in the income endogeneity story outlined in Section 2. Specifically, if these two errors are negatively correlated, as suggested by the previous analysis, the income coefficient bias should lessen to some extent.

4. Econometric Results

This section reports and assesses the main econometric findings. After pooling all household surveys and adding country and time effects, median regressions (see Attanasio, 1993) of the saving rate are run on an array of household characteristics. As discussed in Section 2, theory offers poor guidance in defining the expected sign on each variable, as sometimes contradictory effects can be derived depending on modeling assumptions. For the sake of brevity, and building on the conceptual arguments already presented in Section 2 and the references therein, the present section focuses solely on documenting the new findings.

Regressions can be classified into two groups, one containing the baseline specification and another incorporating into the core estimation a number of additional correlates. The baseline results (Table 12) were put to and passed a number of robustness tests, including keeping only the last available survey (Table 13), excluding outliers (Table 14), keeping only the countries usually thought to have the most consistent surveys over time (Argentina, Brazil, Colombia, Mexico and Peru, Table 15), replacing the saving/disposable income by the saving/consumption ratio (Table 16), and taking health and education expenses as saving (Table

17). Furthermore, we instrumented income by education years of the household head (Table 18) and by home and car ownership (Table 19). The main results are the following:

1. Current income presents a positive and significant coefficient throughout all regressions.
2. When instrumented by household head education (see Table 15) and by house and car ownership (Table 16), income remains highly significant, although the estimate goes down by about half.¹²
3. Age has a positive but decreasing effect on saving in our baseline regressions.¹³ However, the age coefficient becomes significantly negative when adopting an income-based definition for the dependency ratio, which renders this result fragile.
4. Households with female heads tend to save less.
5. The age-defined dependency ratio (total, old and young) bears a positive sign when controlling for current income, which turns negative for total and young dependency when current income is dropped. The old dependency ratio remains positive even after the latter change. The same results are found when current income is instrumented. Conversely, the income-based dependency ratio (dependents to income earners) presents a negative and robust estimate all along.
6. Higher levels of household head education (those with 8-13 and more than 13 years of schooling, relative to those with less than 8) diminish the saving rate when controlling for income, but increase it otherwise. The likely correlation between current income and education may be behind this result. A possible interpretation of the negative sign would be that, once current income is controlled for, highly educated heads envisage an upward lifetime income trend, which would boost consumption and depress saving.¹⁴

¹² We try these two different instruments not only for robustness but also because using education as an instrument prevents us from assessing the direct effect of education on saving. Instrumenting by asset ownership overcomes this issue.

¹³ Given that the square of age enters with a negative sign, the first column of Table 13 implies that saving peaks for household heads aged 68.

¹⁴ The fragility of these and other coefficients cannot be attributed to multicollinearity issues. First, multicollinearity may affect the coefficient's precision (and thus its statistical significance), but not reverse them to a well-estimated

7. The above results are largely invariant to subsampling (by keeping only the last available survey for each country and, by doing that, cutting down the total sample from some 392,000 to 167,000 observations; see Table 13) and to scaling saving by expenditure instead of income (Table 16).¹⁵

In relation to the core regression augmented with additional variables and interaction terms, Tables 20 and 21 indicate the following:¹⁶

1. A higher proportion of government transfers and of remittances in overall household income reduces the saving rate, revealing that these sources of income appear to discourage saving.¹⁷
2. Households with a formal head (meaning that he/she contributes to social security) save more. The saving rate also increases for formal workers affiliated with capitalization schemes.^{18,19} Against the background of studies for advanced countries unveiling a crowding-out effect between voluntary saving and mandatory pension saving (see, for instance, Attanasio and Brugiavini, 2003; and Attanasio and Rohwedder, 2003), this crowding-in

value with the opposite sign. Second, the correlations among these baseline regressors are quite low: the median correlation coefficient is -0.004, with a maximum of 0.31 and a minimum of -0.21.

¹⁵ The main results largely hold in unreported regressions comprising only positive saving observations as well as when considering health and education expenses as saving.

¹⁶ These variables are entered one by one because of concerns about multicollinearity. Several of these additional regressors do indeed lose significance when running the full specification.

¹⁷ Both transfers and remittances are included as part of disposable income, so these income sources appear on both sides of the regression, which may bias the estimated coefficient upward. Reassuringly, the coefficient turns out to be significantly negative. In any case, for the whole sample, the correlation with income is very low (0.13 for transfers and -4 percent for remittances).

¹⁸ Since, in countries with a mixed pension model, household surveys do not inform about the pension system to which the worker is affiliated, the Capitalization dummy takes value 1 for surveys at which time a full capitalization system was in effect. For the sample at hand, these surveys are El Salvador (1994, 2004 and 2010) and Mexico (2000 and 2010). However, even with limitation, it is still possible to distinguish the above full capitalization experiences from the rest (PAYG, in Guatemala, Nicaragua and Panama, and hybrid, in Colombia, Ecuador and Peru).

¹⁹ In principle, when including an interaction variable, all constitutive terms must be included as well. Otherwise the estimated coefficients would be biased and inconsistent. However, this ceases to be true whenever the effect of one of those terms is nil if the other variable is zero (see Brambor, Clark and Golder, 2006). In the present case, Capitalization is a subset of Participation, which implies that when Participation is zero, then Capitalization is also zero by construction, warranting the exclusion of Capitalization on its own. Reassuringly, when Capitalization is included, this conclusion does not change (see columns 4 and 5, Table 21.a.). Incidentally, to claim a positive effect of capitalization on saving, we need to consider the joint effect of being formal and contributing to the pension fund system (in the regression, the sum of the coefficients on Capitalization and Capitalization * Formal). This sum is 0.015, and it was tested to be statistically significant at 1 percent.

- effect is consistent with the scarce evidence for Latin America (as produced by Sandoval-Hernández, 2013, on Mexico, and Coronado, 1998, on Chile).²⁰
3. Self-employment diminishes the saving rate.
 4. Access to financial instruments also reduces the saving rate. This is true for credit instruments (loans) as well as payment (having a bank account) and hybrid ones (credit cards).
 5. Homeownership is associated with a higher saving rate.
 6. Urban households save less than rural ones.
 7. The higher the level of health and education expenses, the lower the saving rate, implying some degree of offset between standard saving and expenses of this kind, thus meaning that the latter are considered a form of saving.²¹
 8. Based on the specifications from Table 17, the positive effect of age, which appears only when controlling for age vis-à-vis income dependency, is attenuated at higher income levels.
 9. All forms of the dependency ratio (by age—total, old, and young—and by income) display a negative effect, but this response weakens as income rises.
 10. As income goes up, the effect of education becomes more negative (for those with 8-13 years of education) or less positive (for those with more than 13 years of education).
 11. The negative effect of education lessens with the age of the household head. This is at odds with the prior that young and highly educated individuals should be less prone to save, as their income is expected to grow more vis-à-vis older individuals with the same education level.

²⁰ Recall that the crowding-out hypothesis assumes that individuals behave according to the pure frictionless permanent income model. Departures from such model, such as borrowing constraints (limiting the ability to increase consumption) or behavioral traits (such as the so-called recognition effect, in the sense of greater awareness of the importance of saving for retirement) may give rise to a different effect.

²¹ Since health and education expense items appear to be a substitute of conventional saving, this lends support to the importance of computing broader measures of saving, as proposed in the literature and shown in Section 4 of this document.

Box 1. Negative Saving and Old Age Saving: A Closer Look

Negative saving among a large share of households and positive and high saving by old household heads stand out as major, and shocking, stylized facts from this database. This section seeks to highlight the defining traits of such households as compared to others.

Table 22 shows the most significant household traits of negative- and positive-saving households. As mentioned earlier, negative saving may just be an artifact of measurement errors, but there is no sure method of determining if that is actually the case.²² In this dataset, negative-saving households display an average income that is about half that of their positive-saving counterparts, but a level of expenditure about 20 percent above them. While income underreporting is a common feature of household surveys, less is known about expenditure over-reporting. More importantly, both errors seem inconsistent with each other.

Even though individual household information collected in surveys is not used for tax or social program participation purposes, the fear that it may be used can explain why some households underreport income. This, however, appears looks inconsistent with expenditure overstating, a contradiction easily detectable by the authorities, should they in fact take into account such information. This suggests that negative saving may indeed result from some households having trouble in estimating their own total income and expenditure, as opposed to a rational decision to hide their actual income. In particular, this seems more likely to happen in low-income households with informal jobs and possibly less developed internal accounting systems to track income and expenditure flows. Such a conjecture is supported not only by the deep income difference between the two groups, but also by other attributes, as negative-saving households display lower head education and labor formality levels, along with a somewhat higher share of government transfers and remittances in total income.

As noticed earlier, negative saving would imply access to credit to fill the financing gap. According to Table 22, for countries with available data, the proportion of negative-saving households having a loan is greater than in positive-saving households, but the difference is quite small (24 percent versus 22 percent). Similar consideration deserves the variable “Having a loan or a credit card” (50 percent versus 49 percent). Based on this evidence, it is far-fetched to assume a clear-cut link between negative saving and use of credit, lending some additional backing to the measurement error hypothesis.

Regarding saving among the elderly, Table 23 reports that households headed by individuals aged 65 and over save more than others (a median of 11.8 percent versus 4.9 percent). These

²² Regardless of the eventual measurement errors, regression results explaining saving behavior do not differ much (especially in terms of sign and statistical significance) for the whole sample and for the positive- and negative-saving subsamples. These unreported results are available upon request.

households have a higher per capita income and fewer and older members, and they are more likely to have a female and less educated head with an informal job. These households tend to have a slightly higher proportion of their income coming from transfers and remittances and less access to credit, even though most of them are homeowners. In light of our previous econometric results, these household characteristics are for the most part saving-reducing (see Table 20), with the exception of income and access to credit. Since the latter characteristic is only available for a few countries, the most compelling explanation for the higher saving rate in households with elderly heads appears to be their higher per capita income.

5. Conclusions and Policy Implications

This study has investigated the main patterns and drivers of the household saving rate in Latin America by exploiting and pooling a broad dataset of official household surveys for 10 Latin American countries and 27 surveys covering selected years from the 1990s, 2000s and 2010s.

On the statistical side, we document a wide dispersion of saving rates across countries and periods and equally huge differences among aggregate, mean and median saving rates. Furthermore, almost half of the households display negative saving. Underlying these figures, there is a strong suspicion of income underreporting and/or consumption over-reporting. The apparent gap between household survey and national accounts measures of saving and income calls for refinements and cross-validation of household survey information so as to make those measures more reliable data sources for policy and academic purposes.

Many variables were tested in explaining saving that proved to be statistically and economically significant. A number of robustness checks, including subsampling and outlier exclusion, were conducted and passed by most regressors, meaning that signs, point estimates and statistical significances were maintained even after radical changes in sample size and composition. The estimations highlight the overriding positive role of income in shaping saving decisions. This occurs when entering current income and also, although with a lower but still high coefficient, after instrumenting this potentially endogenous variable. For the baseline specification, in addition to income, the most robust variables were female household head (negative effect), dependency ratio by income (negative) and, to a lesser extent, the age of the household head (positive but decreasing).

However, while robust to sample changes, some variables appeared to be fragile to the inclusion of income on the right-hand side, to the extent that they reverse their sign while remaining statistically significant. For example, secondary and tertiary education were negative

when controlling for current income and positive when income was instrumented or just deleted. Similarly, the overall dependency ratio is positive in the former case (controlling for current income) and negative in the latter (income instrumented or excluded). The old dependency ratio, which is mostly positive and significant, ceases to be significant when income is instrumented by asset ownership.

Among the additional variables tested in our exercises, government transfers, remittances, self-employment, capitalization pension systems, access to financial services, urban location, and health and education expenses seem to diminish saving, whereas labor formality and homeownership have the opposite effect.

Our work provides some useful lessons in connection with the level of household saving and the design of public policies in this field. One natural question is whether one may be able to pass any verdict on the adequacy of saving based on the paper's findings. Saving adequacy, of course, can be approached from two different—and not necessarily consistent—angles: the macro (how much saving do we need to sustain a certain economic growth rate?) and the micro (how much saving do households need to smooth their consumption across time and states of nature?). If anything, our analysis deals with the latter aspect.

Saving statistics and regressions like the ones presented in this document do not inform per se about optimality and constraints in the saving decision process. Much could be learned in this direction by polling households firsthand about their views and perceptions as well as by using structural models to quantify saving and investment needs for sustainable growth or household-based models to forecast saving needs, based on household composition, life expectancy, and risks and access to credit, among other factors. At any rate, our analysis can be used as an input in that diagnosis but not as the ultimate tool to evaluate saving optimality.

Nevertheless, it should not escape us that, unlike borrowing, saving decisions face no major constraints: a household may find it hard to obtain a loan, but no one can prevent that household from putting aside money for future consumption.²³ At most, surplus households may be unable to find instruments in which to save, provided they refuse to save in cash and look for bank or capital market instruments. At first glance, this seems a minor problem, with little impact

²³ It is true, at any rate, that some individuals display behavioral biases leading them to save too little. Financial education may help in this regard, but a major impact on aggregate saving is unlikely to result from these initiatives. If household behavior is difficult to modify, one needs to take it as an additional hard constraint in the determination of the saving rate.

on aggregate saving: for one, bank facilities do typically exist in high-income, and thus high-saving, areas. In any case, the availability of such instruments is endogenous: if there is a critical mass of saving to be intermediated, financial businesses will be established near those locations to take and manage cash deposits.

Just to be clear, we do not claim that observed household saving rates are optimal in that they are high enough to meet the consumption-smoothing goal for each and every household. Instead, we contend that households are already choosing the saving level that maximizes their utility, given the economic, social, demographic and institutional environment they face.²⁴

What if authorities assess that household saving is low from either a micro or macro point of view? Is there any room for public policies in light of our results? The answer is disheartening here. Most explanatory variables are beyond the realm of government control (such as household characteristics including the number of dependents, the gender of the head, and household location) or may be affected by state policies only in the long run (such as education, labor formality, the generosity of government transfers, and the structure of the pension system). The central role of income suggests that economic growth is likely to deliver much more fruitful and fast effects on saving rates than any government intervention.²⁵ Moreover, even if the government may reshape directly or indirectly some factors driving saving decisions, it is important to take note that, while saving promotion may be a legitimate macro or micro policy goal, pro-saving measures may entail trade-offs. For example, limiting access to financial instruments just to promote saving would be a thoroughly misguided advice. In general, changing the incentive structure of the private sector to encourage more saving may also change other household decisions (labor, education, fertility), with indeterminate overall effects on social well-being. In any case, pursuing a more aggressive policy to enhance labor formality and social security inclusion seems at first glance a pro-saving policy without visible negative side effects.

²⁴ Some households may exhibit myopia or other bounded rationality traits, leading them not to save enough for the future. But the way they process information and make decisions is another hard constraint to be internalized in evaluating the optimality of saving. In fact, departure from full intertemporal utility maximization is the ultimate reason why social security is compulsory and not voluntary.

²⁵ These conclusions are akin to those found in macroeconomic saving studies, which assert that authorities can do little to modify private saving decisions and thus that the most effective pro-saving tool is the promotion of government saving (due to partial Ricardian Equivalence) and, secondly, that saving is caused by economic growth, and not the other way around.

Last but not least, if governments aim to increase aggregate saving, a targeted policy is strongly recommended. According to our data, *all* saving is generated by the highest income quintile. Saving policies directed to increase the saving rate of lower-income households may have beneficial micro effects but little to no macro effect.

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Annex 1. Methodological Note on the Construction of Households' Expenditure and Saving

Household Consumption

Total consumption expenditure is the sum of various components, classified under the following headings: Food and Non-Alcoholic Beverages; Alcoholic, Tobacco and Narcotics; Clothes and Footwear; Housing; Water; Electricity, Gas and other Fuels; Furniture, Equipment and Maintenance; Transport; Communication; Recreation and Culture; Health; Education; Catering and Accommodation Services; Miscellaneous goods and services, and Personal Taxes and Business.

Depending on the country and the survey considered, some expenditure items are reported at the household level (total expenditure for all household members) and others are reported at the individual level. In the latter case, the values for all household members are added in order to compute the household expenditure.

Food and Non-Alcoholic Beverages; Alcoholic, Tobacco and Narcotics; Clothes and Footwear

Surveys typically include standard information on the purchasing of certain food, beverages, tobacco, clothing and footwear items for a given period. Nondurable goods acquisition is usually computed on a monthly or quarterly basis. The variables used to compute the monthly consumption expenditure on these goods are the value and the frequency of these purchases.

Once monthly spending on each of the items is calculated, total expenditure for the headings previously mentioned is obtained by aggregating all items that belong to each heading. Finally, as most of the items in this group of headings are reported at the individual level, household expenditure is constructed by adding expenditures of each household member under those headings.

Housing; Water; Electricity, Gas and other Fuels; Furniture, Equipment and Maintenance

These expenditure items tend to be reported at household level, something that is expected since they are typical expenses for home maintenance and they are also incurred by the family as a whole, due to the difficulty of determining individual spending. These expenditures tend to be reported on a quarterly or semiannual frequency, while our figures are calculated on a monthly basis.

In general, the first two headings (Housing and Water; electricity, gas and other fuels) include payments in concept of rent, fuels, local or national taxes for water, electricity or gas and so on. Furniture, Equipment and Maintenance implies spending on furniture, equipment for the house (plates, glasses, cutlery, pots, curtains, sheets, quilts, brooms) and the family members and for dwelling maintenance (cleaning items, overhauls, painting, etc.).

Transport; Communication; Recreation and Culture

Transport and Communication include expenditure on public and private transport, both long and short distance, and expenditure on general means of communication (phones, cellphones, Internet), while Recreation and Culture include expenditures on television service, cinema, theater, museums and sports club, among others.

Education and Health

Expenditure on tuition, school supplies, uniforms, books, photocopies, lunch and snacks and transport to school are included in the Education heading. Meanwhile, Health expenditures include catastrophic and non-catastrophic, private and out-of-pocket expenses such as the cost of social or health insurance, hospitalizations, surgical interventions, drugs, health professionals' fees, cares' fees, and pregnancies and child delivery, among others.

Catering and Accommodation Services, Miscellaneous goods and services

Personal care, personal belongings (such as glasses, dryers, electric shavers, etc.), insurances, professional services, formalities, restaurants, bars and other meals outside home and hotels, tickets and purchases in the rest of the world are the type of goods and services included in these headings.

Personal Taxes and Business

This heading includes tax payments and spending in family businesses, which are an important component of total expenditure while not being consumption expenditures. However, detailed information about these items is not always available in surveys, and they are computed only in countries that have related questions. Taxes include amounts paid as taxes on profits and personal property, among others. Business expenditures imply all inputs' costs, raw materials, wages, rent, machinery, and facilities.

Computing Household Consumption Expenditure

Total household expenditure is the sum of all the expenditures headings mentioned before. The expenditure of all households in the country consists, in turn, of the aggregation of the total expenditure for each household. Total household expenditure is calculated using the following formulas:

$$EHT = \sum_{i=1}^n EH_i \quad (1)$$

$$EH = \sum_{j=1}^m g_j \quad (2)$$

where EHT is the monthly total expenditure, EH is the monthly expenditure of each households, n is the number of household and m is the number of expenditure headings (typically $m=13$).

Household Income

Household income includes income from labor and income from other sources. Furthermore, both monetary incomes and in-kind incomes are considered. The estimates of all revenues are on a monthly basis (the same as expenditure). Therefore, those incomes with another frequency are transformed accordingly.

While income data tend to be reported at the individual level, it is possible to find some incomes at the household level, especially within non-labor income sources. Nevertheless, when computing total household income, individual revenues from all household members are added.

Although the target population and the questions of this module differ among surveys, all income variables are calculated using the same methodology applied in SEDLAC, which assures comparability across countries and years.

In order to compute income from labor all jobs are considered (primary, secondary and others). Non-labor income consists of pension income, income from capital and rent, and income from transfers (remittances and government transfers). In both labor and non-labor income calculation, monetary and in-kind income are considered.

Computing Household Income

Total household income is the sum of all categories of income while the income of all household in the country consists of aggregation of the total income of each household. Aggregate household income per month is calculated in based on the following formulas:

$$IHT = \sum_{i=1}^n EH_i \quad (3)$$

$$IH = \sum_{j=1}^m y_j \quad (4)$$

where IHT is the monthly aggregate household income, IH is the monthly total income of each household, n is the number of household and m is the number of income categories.

Household Saving

The final step to calculate households' saving of a country is very simple and it is limited to subtracting aggregate expenditure from aggregate income.

$$SVH = EHT - IHT \quad (5)$$

The savings rate for main figures and tables is calculated as:

$$SVH = \frac{(EHT - IHT)}{IHT} * 100 \quad (6)$$

As a robustness check, we calculate an alternative saving rate as:

$$SVH = \frac{(EHT - IHT)}{EHT} * 100 \quad (7)$$

When comparing absolute values of saving, income or expenditure, we convert magnitudes into the local currency unit of each country to 2005 PPP dollars.

To explore possible shortcomings in the methodology followed to construct household expenditure, we compute two alternative saving measures apart from the Standard Saving Rate, namely, a saving rate which excludes expenditure on durables from consumption, and another alternative saving rate also excluding health and education expenditures.

Table 2. Saving Rate (Saving to Income) in Latin America

Country	Year	Aggregate	Mean	Median	% of households with negative saving
Argentina	2004	10.3	-25.0	8.5	44.2
	2012	15.5	-12.8	16.4	38.6
Brazil	2003	14.9	-16.4	5.4	45.4
	2009	20.3	-3.1	14.6	36.7
Colombia	1997	-0.9	-216.9	-9.7	55.9
	2003	6.3	-34.0	3.1	47.5
	2011	12.7	-33.3	5.2	46.4
Guatemala	2000	16.5	-28.5	61.0	13.2
	2006	23.4	-17.1	17.0	38.5
	2011	12.0	-80.2	-7.3	55.4
Ecuador	1999	62.7	-42.8	61.2	14.8
	2006	7.2	-15.1	1.7	47.5
El Salvador	1998	3.5	-257.0	-26.2	60.4
	2004	-32.7	-189.1	-57.4	65.2
	2010	28.9	4.7	30.6	31.7
Panama	1997	12.7	-169.4	0.8	49.5
	2003	14.1	-154.8	4.7	46.9
	2008	18.3	-45.2	10.6	42.3
Peru	1997	9.1	-37.2	-4.0	53.0
	2003	21.9	-6.2	2.5	47.4
	2010	23.7	1.2	11.6	37.1
Mexico	1994	8.0	-28.5	2.2	47.1
	2000	3.5	-26.5	0.5	49.3
	2010	3.6	-33.0	0.5	49.8
Nicaragua	1998	4.4	-83.1	-12.6	58.7
	2005	16.1	-264.6	5.6	45.8
	2009	17.5	-47.1	7.7	44.5

Table 3. Saving Rate (Saving to Consumption) in Latin America

Country	Year	Aggregate	Mean	Median	% of households with negative saving
Argentina	2004	11.5	31.1	8.8	44.2
	2012	18.3	47.9	19.4	38.6
Brazil	2003	17.5	22.5	5.7	45.4
	2009	25.5	34.4	17.2	36.7
Colombia	1997	-0.9	16.7	-8.8	55.9
	2003	6.7	18.4	3.0	47.5
	2011	14.5	20.7	5.3	46.4
Guatemala	2000	19.8	262.5	156.1	13.2
	2006	30.6	44.7	20.5	38.5
	2011	13.6	9.8	-6.9	55.4
Ecuador	1999	168.1	231.2	157.9	14.8
	2006	7.7	14.3	1.7	47.5
El Salvador	1998	3.7	448.3	-23.5	60.4
	2004	-24.7	36.7	-37.4	65.2
	2010	40.6	101.5	44.0	31.7
Panama	1997	14.5	14.6	0.6	49.5
	2003	16.4	17.8	4.7	46.9
	2008	22.4	28.5	11.3	42.3
Peru	1997	10.0	9.0	-3.9	53.0
	2003	28.1	15.7	2.5	47.4
	2010	31.0	26.8	13.1	37.1
Mexico	1994	8.7	7.6	2.0	47.1
	2000	3.6	5.7	0.4	49.3
	2010	3.7	10.1	0.2	49.8
Nicaragua	1998	4.6	10.5	-11.3	58.7
	2005	19.2	24.0	5.9	45.8
	2009	21.2	24.9	8.3	44.5

Table 4. Saving Rate (Saving to Income, including durables, health and education) in Latin America

Country	Year	Aggregate	Mean	Median	% of households with negative saving
Argentina	2004	25.5	-7.0	21.7	33.1
	2012	28.4	3.4	28.8	29.5
Brazil	2003	28.1	-0.6	18.7	34.0
	2009	32.8	12.1	27.8	25.6
Colombia	1997	23.3	-162.5	15.8	39.0
	2003	16.2	-21.5	11.9	40.2
	2011	22.4	-20.8	13.3	39.2
Guatemala	2000	25.9	-12.1	65.8	10.2
	2006	33.2	-5.0	27.1	31.0
	2011	22.5	-64.3	2.5	48.2
Ecuador	1999	70.2	-13.4	70.4	11.2
	2006	61.3	-3.1	11.0	34.1
El Salvador	1998	25.3	-161.3	6.9	48.5
	2004	-19.9	-165.1	-43.5	61.9
	2010	40.2	18.0	43.0	25.4
Panama	1997	40.5	-97.0	29.0	34.1
	2003	42.3	-97.6	28.0	33.1
	2008	37.4	-16.0	28.8	28.4
Peru	1997	14.9	-29.3	1.7	48.8
	2003	32.8	5.8	13.8	34.7
	2010	35.0	13.4	22.6	25.7
Mexico	1994	26.9	-2.6	19.5	27.0
	2000	23.5	-0.0	19.7	26.9
	2010	21.2	-9.0	16.4	35.1
Nicaragua	1998	19.2	-60.4	1.9	49.3
	2005	30.3	-192.9	18.9	34.5
	2009	32.4	-22.2	22.2	33.1

Table 5. Saving Rate (Saving to Consumption, including durables, health and education) in Latin America

Country	Year	Aggregate	Mean	Median	% of households with negative saving
Argentina	2004	28.4	44.6	23.5	33.1
	2012	33.6	61.1	34.3	29.5
Brazil	2003	33.0	36.3	19.9	34.0
	2009	41.1	49.3	32.6	25.6
Colombia	1997	23.1	38.8	14.2	39.0
	2003	17.3	27.0	11.7	40.2
	2011	25.6	28.9	13.7	39.2
Guatemala	2000	31.1	275.0	167.2	10.2
	2006	43.4	55.9	32.7	31.0
	2011	25.6	19.1	2.3	48.2
Ecuador	1999	188.2	252.4	182.0	11.2
	2006	66.0	23.5	11.4	34.1
El Salvador	1998	26.3	464.3	2.3	48.5
	2004	-15.0	50.5	-28.5	61.9
	2010	56.5	119.4	62.2	25.4
Panama	1997	46.3	41.1	27.4	34.1
	2003	49.3	42.5	29.5	33.1
	2008	45.7	48.4	30.7	28.4
Peru	1997	16.3	14.4	1.6	48.8
	2003	42.0	26.7	14.2	34.7
	2010	45.8	39.2	25.5	25.7
Mexico	1994	29.2	26.2	20.0	27.0
	2000	24.3	25.4	19.5	26.9
	2010	21.9	25.8	16.0	35.1
Nicaragua	1998	20.0	23.2	1.5	49.3
	2005	36.1	39.0	20.2	34.5
	2009	39.2	41.3	24.0	33.1

**Table 6. Aggregate Saving Rate in Latin America:
Summary Table across Countries and Surveys**

Statistics/Saving Measure	Saving/Income	Saving/Income, <i>including Durables, Education and Health</i>	Saving/Consumption	Saving/Consumption, <i>including Durables, Education and Health</i>
Mean	13.1	29.3	19.8	38.5
Median	12.7	28.1	14.5	33.0
Standard Deviation	15.1	15.7	32.2	33.7
Max	62.7	70.2	168.1	188.2
Min	-32.7	-19.9	-24.7	-15.0

**Table 7. Household Saving Rate in Latin America:
Household Surveys versus National Accounts**

Country	Year	Aggregate Saving Rate	
		Household Survey	National Accounts
Brazil	2003	14.9	5.6
	2009	20.3	4.5
Colombia	2003	6.3	6.4
	2011	12.7	6.6
Ecuador	2006	14.2	5.7
Guatemala	2011	11.9	4.4
Mexico	2000	3.5	9.2
	2010	3.6	7.4

**Table 8. Annual Per Capita Consumption in Latin America:
Household Surveys versus National Accounts (in US\$)**

Country	Year	Household Survey	National Accounts	Difference (%)
Brazil	2003	1,487	1,882	-21%
	2009	3,653	5,117	-29%
Colombia	2003	1,097	1,554	-29%
	2011	3,100	4,363	-29%
Ecuador	2006	1,606	2,202	-27%
El Salvador	2010	1,189	3,200	-63%
Guatemala	2011	1,390	2,765	-50%
Mexico	2000	2,068	4,480	-54%
	2010	2,529	5,980	-58%
Nicaragua	2009	682	1,170	-42%
Panama	2008	3,136	3,417	-8%
Peru	2003	724	1,609	-55%
	2010	1,451	3,249	-55%

**Table 9. Age-Income Profiles and Median Saving Rates
in Latin America**

Age group	Total Sample	First Income Quintile	Second	Third	Fourth	Fifth
21-25	3.6	-36.1	-8.1	3.7	14.1	20.3
26-30	7.8	-42.2	-9.1	6.8	14.7	21.1
31-35	9.6	-45.8	-8.0	5.9	14.4	22.5
36-40	9.9	-50.2	-10.3	3.3	15.2	24.4
41-45	11.0	-49.5	-9.9	6.6	14.6	24.6
46-50	13.2	-75.8	-12.5	5.3	16.5	25.8
51-55	13.2	-73.1	-12.6	5.3	15.7	22.4
56-60	13.5	-110.5	-27.8	4.7	14.4	27.0
61-65	12.5	-126.4	-16.2	3.1	14.2	27.1
65-70	12.9	-91.7	-42.6	11.6	11.7	26.0
71-75	15.2	-119.4	-27.0	8.9	18.5	27.8
75-80	16.6	-153.8	-30.0	12.8	20.2	22.7
<i>Total (21-80)</i>	9.0	-47.3	-9.8	5.4	14.8	23.4

**Table 10. Age-Education Profiles and Median Saving Rates
in Latin America**

Age group	Total Sample	Education = 1	Education = 2	Education = 3
21-25	3.6	5.1	3.5	2.5
26-30	7.8	6.8	7.9	8.7
31-35	9.6	6.1	9.8	12.9
36-40	9.9	7.2	9.9	17.1
41-45	11.0	6.9	11.2	15.1
46-50	13.2	9.6	13.3	24.0
51-55	13.2	5.2	14.3	19.5
56-60	13.5	4.1	14.0	24.9
61-65	12.5	2.2	15.2	16.3
65-70	12.9	5.1	14.6	23.5
71-75	15.2	0.3	20.1	20.8
75-80	16.6	9.5	22.7	16.6
<i>Total (21-80)</i>	<i>9.0</i>	<i>6.1</i>	<i>9.1</i>	<i>11.9</i>

Note: Education =1, primary schooling (complete or not), Education =2, secondary schooling (complete or not), Education =3, tertiary schooling (complete or not).

**Table 11. Age-Expenditure Profiles and Median Saving Rates
in Latin America**

Age group	Total Sample	First Expenditure Quintile	Second	Third	Fourth	Fifth
21-25	3.6	21.0	9.7	2.5	-1.8	-9.8
26-30	7.8	22.9	12.7	7.6	5.9	-1.5
31-35	9.6	22.9	11.2	10.1	7.3	3.2
36-40	9.9	22.3	11.8	7.6	8.4	6.5
41-45	11.0	24.3	15.3	9.2	7.5	5.3
46-50	13.2	25.0	14.9	9.7	8.7	11.8
51-55	13.2	23.4	16.0	8.6	11.1	9.0
56-60	13.5	22.4	13.6	9.4	3.1	15.3
61-65	12.5	19.2	12.2	6.4	13.0	-2.4
65-70	12.9	28.4	2.4	2.8	-1.1	-0.2
71-75	15.2	26.7	8.8	3.6	8.2	-18.0
75-80	16.6	36.9	3.2	-4.3	-11.5	-3.1
<i>Total (21-80)</i>	<i>9.0</i>	<i>23.5</i>	<i>12.0</i>	<i>7.3</i>	<i>5.3</i>	<i>1.1</i>

Table 12. Baseline Median Regressions: Household Saving Rate (Saving/Income), All Countries and Surveys

Variables	(1)	(2)	(3)	(4)	(5)	(6)
HH Head Age	0.0068*** (0.0003)	0.0062*** (0.0004)	-0.0011** (0.0004)	0.0077*** (0.0004)	0.0074*** (0.0004)	0.0030*** (0.0004)
Squared HH Head Age	-0.0001*** (0.0000)	-0.0000*** (0.0000)	0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	0.0000 (0.0000)
Female HH Head	-0.0618*** (0.0021)	-0.0604*** (0.0022)	-0.0441*** (0.0026)	-0.0539*** (0.0023)	-0.0502*** (0.0023)	-0.0462*** (0.0027)
Dependency Ratio (by age)	0.0182*** (0.0013)			-0.0560*** (0.0014)		
Young Dependency Ratio (by age)		0.0139*** (0.0015)			-0.0802*** (0.0016)	
Old Dependency Ratio (by age)		0.0150*** (0.0034)			0.0160*** (0.0037)	
Dependency Ratio (by income)			-0.2837*** (0.0037)			-0.3143*** (0.0038)
8-13 years education, HH Head	-0.0693*** (0.0024)	-0.0688*** (0.0025)	-0.0591*** (0.0028)	0.0661*** (0.0025)	0.0593*** (0.0026)	0.0678*** (0.0029)
>13 years education, HH Head	-0.1552*** (0.0033)	-0.1520*** (0.0033)	-0.1082*** (0.0039)	0.1241*** (0.0033)	0.1149*** (0.0034)	0.1423*** (0.0038)
Log pc HH Income (USD PPP2005)	0.1945*** (0.0007)	0.1904*** (0.0007)	0.1780*** (0.0008)			
Constant	-1.0179*** (0.0101)	-0.9878*** (0.0103)	-0.5837*** (0.0126)	-0.0535*** (0.0101)	-0.0153 (0.0105)	0.2308*** (0.0124)
Observations	392,263	384,777	292,318	392,281	384,795	292,320

Regressions span a maximum of 10 LA countries and 27 household surveys (see text for further details on sample composition).

The estimation includes unreported country and time dummies.

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 13. Baseline Median Regressions: Household Saving Rate (Saving/Income), All Countries, Last Available Survey Only

Variables	(1)	(2)	(3)	(4)	(5)	(6)
HH Head Age	0.00707*** (0.000484)	0.00575*** (0.000508)	-0.00232*** (0.000624)	0.00945*** (0.000495)	0.00928*** (0.000546)	0.00594*** (0.000656)
Square HH Head Age	-7.18e-05*** (4.65e-06)	-5.09e-05*** (5.04e-06)	1.29e-05** (6.19e-06)	-5.16e-05*** (4.76e-06)	-5.86e-05*** (5.41e-06)	-2.13e-05*** (6.52e-06)
Female HH Head	-0.0647*** (0.00299)	-0.0653*** (0.00307)	-0.0281*** (0.00374)	-0.0671*** (0.00306)	-0.0620*** (0.00330)	-0.0555*** (0.00394)
Dependency Ratio (by age)	0.0719*** (0.00206)			-0.0507*** (0.00201)		
Young Dependency Ratio (by age)		0.0855*** (0.00246)			-0.0771*** (0.00249)	
Old Dependency Ratio (by age)		0.0221*** (0.00481)			0.0263*** (0.00517)	
Dependency Ratio (by income)			-0.235*** (0.00546)			-0.267*** (0.00574)
8-13 years education, HH Head	-0.155*** (0.00351)	-0.155*** (0.00358)	-0.165*** (0.00414)	0.0441*** (0.00342)	0.0380*** (0.00367)	0.0413*** (0.00415)
>13 years education, HH Head	-0.328*** (0.00491)	-0.330*** (0.00502)	-0.321*** (0.00594)	0.105*** (0.00448)	0.0935*** (0.00481)	0.118*** (0.00557)
Log pc HH Income (USD PPP2005)	0.320*** (0.00162)	0.322*** (0.00169)	0.328*** (0.00198)			
Constant	-1.572*** (0.0148)	-1.572*** (0.0154)	-1.184*** (0.0182)	-0.174*** (0.0135)	-0.136*** (0.0146)	-3.10e-05 (0.0178)
Observations	167,247	164,691	121,272	167,247	164,691	121,272

Regressions span 10 LA countries and 27 household surveys (see text for further details on sample composition).

The estimation includes unreported country and time dummies.

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 14. Baseline Median Regressions: Household Saving Rate (Saving/Income), All Countries, Excluding Outliers

Variables	(1)	(2)	(3)	(4)	(5)	(6)
HH Head Age	0.0067*** (0.0003)	0.0053*** (0.0003)	-0.0034*** (0.0004)	0.0080*** (0.0004)	0.0077*** (0.0004)	0.0032*** (0.0004)
Squared HH Head Age	-0.0001*** (0.0000)	-0.0000*** (0.0000)	0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000 (0.0000)
Female HH Head	-0.0643*** (0.0022)	-0.0637*** (0.0021)	-0.0356*** (0.0025)	-0.0557*** (0.0024)	-0.0523*** (0.0023)	-0.0463*** (0.0027)
Dependency Ratio (by age)	0.0568*** (0.0014)			-0.0540*** (0.0014)		
Young Dependency Ratio (by age)		0.0625*** (0.0015)			-0.0791*** (0.0015)	
Old Dependency Ratio (by age)		0.0165*** (0.0034)			0.0180*** (0.0036)	
Dependency Ratio (by income)			-0.2751*** (0.0035)			-0.3202*** (0.0038)
8-13 years education, HH Head	-0.1341*** (0.0026)	-0.1343*** (0.0025)	-0.1377*** (0.0027)	0.0677*** (0.0026)	0.0602*** (0.0025)	0.0690*** (0.0028)
>13 years education, HH Head	-0.2942*** (0.0035)	-0.2926*** (0.0034)	-0.2753*** (0.0038)	0.1272*** (0.0034)	0.1180*** (0.0033)	0.1463*** (0.0038)
Log pc HH Income (USD PPP2005)	0.2917*** (0.0009)	0.2904*** (0.0009)	0.2943*** (0.0011)			
Constant	-1.3943*** (0.0106)	-1.3727*** (0.0104)	-0.9406*** (0.0121)	-0.1411*** (0.0105)	-0.0997*** (0.0102)	0.1428*** (0.0123)
Observations	384,707	377,644	286,732	384,723	377,660	286,734

Regressions span a maximum of 10 LA countries and 27 household surveys (see text for further details on sample composition).

The estimation includes unreported country and time dummies.

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 15. Baseline Median Regressions, Household Saving Rate (Saving/Income), Data for Argentina, Brazil, Colombia, Mexico and Peru

Variables	(1)	(2)	(3)	(4)	(5)	(6)
HH Head Age	0.0075*** (0.0004)	0.0053*** (0.0004)	-0.0026*** (0.0005)	0.0084*** (0.0004)	0.0074*** (0.0004)	0.0039*** (0.0005)
Squared HH Head Age	-0.0001*** (0.0000)	-0.0000*** (0.0000)	0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000 (0.0000)
Female HH Head	-0.0625*** (0.0023)	-0.0614*** (0.0023)	-0.0332*** (0.0028)	-0.0608*** (0.0024)	-0.0559*** (0.0024)	-0.0478*** (0.0030)
Dependency Ratio (by age)	0.0645*** (0.0015)			-0.0359*** (0.0016)		
Young Dependency Ratio (by age)		0.0729*** (0.0018)			-0.0581*** (0.0018)	
Old Dependency Ratio (by age)		0.0104*** (0.0036)			0.0131*** (0.0038)	
Dependency Ratio (by income)			-0.2141*** (0.0040)			-0.2444*** (0.0042)
8-13 years education, HH Head	-0.1305*** (0.0027)	-0.1315*** (0.0027)	-0.1321*** (0.0031)	0.0485*** (0.0027)	0.0419*** (0.0027)	0.0446*** (0.0031)
>13 years education, HH Head	-0.2749*** (0.0036)	-0.2740*** (0.0037)	-0.2522*** (0.0043)	0.0999*** (0.0034)	0.0915*** (0.0034)	0.1099*** (0.0040)
Log pc HH Income (USD PPP2005)	0.2545*** (0.0012)	0.2537*** (0.0012)	0.2500*** (0.0014)			
Constant	-1.3147*** (0.0117)	-1.2869*** (0.0122)	-0.8637*** (0.0140)	-0.1609*** (0.0112)	-0.1173*** (0.0114)	0.0461*** (0.0141)
Observations	266,314	262,754	196,534	266,329	262,769	196,536

Regressions span a maximum of 10 LA countries and 27 household surveys (see text for further details on sample composition).

The estimation includes unreported country and time dummies.

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 16. Baseline Median Regressions: Household Saving Rate (Saving/Consumption), All Countries and Surveys

Variables	(1)	(2)	(3)	(4)	(5)	(6)
HH Head Age	0.7206*** (0.0345)	0.5886*** (0.0369)	-0.1374*** (0.0393)	0.8332*** (0.0404)	0.7745*** (0.0416)	0.2782*** (0.0452)
Squared HH Head Age	-0.0061*** (0.0003)	-0.0042*** (0.0004)	0.0014*** (0.0004)	-0.0042*** (0.0004)	-0.0042*** (0.0004)	0.0005 (0.0005)
Female HH Head	-7.2833*** (0.2183)	-7.2116*** (0.2271)	-4.5800*** (0.2424)	-5.8446*** (0.2562)	-5.3257*** (0.2561)	-4.7588*** (0.2790)
Dependency Ratio (by age)	4.6312*** (0.1342)			-5.3038*** (0.1539)		
Young Dependency Ratio (by age)		5.0361*** (0.1574)			-7.3140*** (0.1724)	
Old Dependency Ratio (by age)		1.1883*** (0.3578)			1.6317*** (0.4040)	
Dependency Ratio (by income)			-24.7491*** (0.3448)			-32.6178*** (0.3957)
8-13 years education, HH Head	-10.7476*** (0.2510)	-10.9347*** (0.2590)	-11.1135*** (0.2632)	7.2497*** (0.2878)	6.5895*** (0.2855)	7.1434*** (0.2949)
>13 years education, HH Head	-22.5170*** (0.3370)	-22.6888*** (0.3478)	-20.3393*** (0.3607)	14.3954*** (0.3737)	13.5055*** (0.3710)	15.8093*** (0.3926)
Log pc HH Income (USD PPP2005)	26.2332*** (0.0741)	26.2707*** (0.0775)	25.5163*** (0.0789)			
Constant	-123.2417*** (1.0384)	-121.7798*** (1.0872)	-80.4093*** (1.1697)	-6.9888*** (1.1409)	-2.8812** (1.1432)	24.9647*** (1.2792)
Observations	392,078	384,620	292,194	393,859	386,240	292,222

Regressions span a maximum of 10 LA countries and 27 household surveys (see text for further details on sample composition).

The estimation includes unreported country and time dummies.

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 17. Baseline Median Regressions: Household Saving Rate (Saving/Income), Health and Education Expenses as Saving All Countries and Surveys

Variables	(1)	(2)	(3)	(4)	(5)	(6)
HH Head Age	0.0053*** (0.0003)	0.0045*** (0.0003)	-0.0011*** (0.0004)	0.0058*** (0.0003)	0.0054*** (0.0003)	0.0025*** (0.0004)
Squared HH Head Age	-0.0000*** (0.0000)	-0.0000*** (0.0000)	0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	0.0000 (0.0000)
Female HH Head	-0.0509*** (0.0019)	-0.0499*** (0.0020)	-0.0336*** (0.0023)	-0.0431*** (0.0020)	-0.0404*** (0.0019)	-0.0364*** (0.0024)
Dependency Ratio (by age)	0.0198*** (0.0012)			-0.0451*** (0.0012)		
Young Dependency Ratio (by age)		0.0176*** (0.0014)			-0.0641*** (0.0013)	
Old Dependency Ratio (by age)		0.0103*** (0.0031)			0.0095*** (0.0031)	
Dependency Ratio (by income)			-0.2486*** (0.0032)			-0.2779*** (0.0034)
8-13 years education, HH Head	-0.0498*** (0.0022)	-0.0494*** (0.0022)	-0.0445*** (0.0025)	0.0700*** (0.0022)	0.0652*** (0.0022)	0.0725*** (0.0025)
>13 years education, HH Head	-0.1057*** (0.0029)	-0.1022*** (0.0030)	-0.0682*** (0.0034)	0.1443*** (0.0029)	0.1378*** (0.0028)	0.1631*** (0.0033)
Log pc HH Income (USD PPP2005)	0.1738*** (0.0006)	0.1704*** (0.0007)	0.1649*** (0.0007)			
Constant	-0.7339*** (0.0089)	-0.7048*** (0.0094)	-0.4072*** (0.0110)	0.1330*** (0.0088)	0.1636*** (0.0087)	0.3420*** (0.0109)
Observations	392,257	384,771	292,313	392,275	384,789	292,315

Regressions span a maximum of 10 LA countries and 27 household surveys (see text for further details on sample composition).

The estimation includes unreported country and time dummies.

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 18. Baseline Median Regressions, Household Saving Rate (Saving/Income), All Countries and Surveys, IV (HH Education) Estimation

Variables	(1)	(2)	(3)
HH Head Age	0.0065*** (0.0002)	0.0060*** (0.0001)	0.0006 (0.0006)
Square HH Head Age	-0.0000*** (0.0000)	-0.0000*** (0.0000)	0.0000 (0.0000)
Female HH Head	-0.0508*** (0.0021)	-0.0496*** (0.0015)	-0.0358*** (0.0035)
Dependency Ratio (by age)	-0.0254*** (0.0017)		
Young Dependency Ratio (by age)		-0.0418*** (0.0027)	
Old Dependency Ratio (by age)		0.0092*** (0.0004)	
Dependency Ratio (by income)			-0.2881*** (0.0028)
IV - Log pc HH Income (USD PPP2005) [▪]	0.0875*** (0.0010)	0.0826*** (0.0015)	0.0940*** (0.0019)
Constant	-0.5879*** (0.0112)	-0.5384*** (0.0084)	-0.3086*** (0.0188)
Observations	434,158	423,887	326,226
Hausman test			
Chi2	1598.64	170.19	-11.62
Prob>Chi2	0.0000	0.0000	0.0088

Table 19. Baseline Median Regressions, Household Saving Rate (Saving/Income), All Countries and Surveys, IV (Home and Car Ownership) Estimation

Variables	(1)	(2)	(3)
HH Head Age	0.0071*** (0.0001)	0.0059*** (0.0006)	-0.0001 (0.0004)
Square HH Head Age	-0.0000*** (0.0000)	-0.0000*** (0.0000)	0.0000** (0.0000)
Female HH Head	-0.0501*** (0.0025)	-0.0480*** (0.0043)	-0.0371*** (0.0027)
Dependency Ratio (by age)	-0.0396*** (0.0020)		
Young Dependency Ratio (by age)		-0.0586*** (0.0025)	
Old Dependency Ratio (by age)		-0.0028 (0.0033)	
Dependency Ratio (by income)			-0.3841*** (0.0056)
8-13 years education, HH Head	0.0398*** (0.0038)	0.0353*** (0.0039)	0.0304*** (0.0007)
>13 years education, HH Head	0.0597*** (0.0059)	0.0570*** (0.0078)	0.0690*** (0.0047)
IV - Log pc HH Income (USD PPP2005) [•]	0.0630*** (0.0027)	0.0581*** (0.0057)	0.0688*** (0.0058)
Constant	-0.4862*** (0.0146)	-0.4178*** (0.0279)	-0.1179*** (0.0365)
Observations	265,677	255,651	211,189
Hausman test			
Chi2	2906.53	-294.46	-1145.44
Prob>Chi2	0.0000	0.0000	0.0000

Regressions span a maximum of 10 countries and 27 household surveys.

Estimation includes unreported country and time dummies.

[•] Instrumented by homeowner and the household own a car

Bootstrapped standard errors in second stage, with 1,000 replications.

*** p<0.01, ** p<0.05, * p<0.1

**Table 20.a. Median Regressions with Additional Regressors:
Household Saving Rate (Saving/Income), All Countries and Surveys**

Variables	(1)	(2)	(3)	(4)	(5)	(6)
HH Head Age	-0.0012** (0.0005)	-0.0006 (0.0005)	-0.0006 (0.0006)	-0.0007 (0.0006)	-0.0009 (0.0007)	-0.0002 (0.0004)
Squared HH Head Age	0.0000*** (0.0000)	0.0000** (0.0000)	0.0000** (0.0000)	0.0000*** (0.0000)	0.0000*** (0.0000)	0.0000** (0.0000)
Female HH Head	-0.0638*** (0.0033)	-0.0475*** (0.0036)	-0.0650*** (0.0042)	-0.0649*** (0.0041)	-0.0631*** (0.0045)	-0.0478*** (0.0026)
8-13 years education, HH Head	-0.0418*** (0.0037)	0.0026 (0.0037)	-0.0240*** (0.0044)	-0.0237*** (0.0044)	-0.0244*** (0.0048)	-0.0662*** (0.0028)
>13 years education, HH Head	-0.0713*** (0.0047)	0.0318*** (0.0053)	-0.0408*** (0.0062)	-0.0401*** (0.0061)	-0.0368*** (0.0066)	-0.1173*** (0.0038)
Dependency Ratio (by income)	-0.4115*** (0.0048)	-0.3812*** (0.0050)	-0.4067*** (0.0058)	-0.4052*** (0.0057)	-0.4058*** (0.0063)	-0.2806*** (0.0036)
Log pc HH Income (USD PPP2005)	0.1396*** (0.0010)	0.1285*** (0.0009)	0.1257*** (0.0011)	0.1262*** (0.0011)	0.1236*** (0.0012)	0.1773*** (0.0008)
Gov transfers (% HH income)	-1.0903*** (0.0186)					
Remittances (% HH income))		-0.3101*** (0.0013)				
Formal HH Head (legal)			0.0949*** (0.0046)	0.1118*** (0.0054)	0.1184*** (0.0060)	
Formal Head * Full capitalization				-0.0477*** (0.0084)	-0.0666*** (0.0095)	
Full Capitalization					0.0813*** (0.0102)	
Self-Employed HH Head						-0.1928*** (0.0068)
Constant	-0.3040*** (0.0157)	-0.7740*** (0.0166)	-0.4223*** (0.0195)	-0.4279*** (0.0193)	-0.4121*** (0.0210)	-0.5860*** (0.0123)
Observations	200,789	151,771	134,920	134,920	134,920	292,318

Regressions span 10 LA countries and 27 household surveys (see text for further details on sample composition).

The estimation includes unreported country and time dummies.

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

**Table 20.b. Median Regressions with Additional Regressors:
Household Saving Rate (Saving/Income), All Countries and Surveys**

Variables	(7)	(8)	(9)	(10)	(11)	(12)
HH Head Age	-0.0016** (0.0007)	-0.0015* (0.0008)	0.0011* (0.0007)	-0.0021*** (0.0004)	-0.0008 (0.0005)	0.0053*** (0.0006)
Squared HH Head Age	0.0000*** (0.0000)	0.0000* (0.0000)	0.0000 (0.0000)	0.0000*** (0.0000)	0.0000** (0.0000)	-0.0000*** (0.0000)
Female HH Head	-0.0434*** (0.0049)	-0.0144*** (0.0050)	-0.0511*** (0.0042)	-0.0424*** (0.0024)	-0.0503*** (0.0032)	-0.0423*** (0.0034)
8-13 years education, HH Head	0.0343*** (0.0051)	-0.0933*** (0.0053)	0.0076* (0.0043)	-0.0547*** (0.0027)	-0.0185*** (0.0036)	-0.0040 (0.0036)
>13 years education, HH Head	0.0780*** (0.0072)	-0.1322*** (0.0085)	0.0402*** (0.0059)	-0.1019*** (0.0036)	-0.0523*** (0.0046)	0.0195*** (0.0047)
Dependency Ratio (by income)	-0.2970*** (0.0067)	-0.0995*** (0.0072)	-0.3014*** (0.0058)	-0.2853*** (0.0035)	-0.3752*** (0.0045)	-0.3703*** (0.0050)
Log pc HH Income (USD PPP2005)	0.0891*** (0.0010)	0.2585*** (0.0027)	0.0995*** (0.0010)	0.1743*** (0.0008)	0.1653*** (0.0009)	0.3041*** (0.0015)
Has a Loan	-0.1430*** (0.0062)					
Holds a bank account		-0.3553*** (0.0139)				
Has a credit card or loan			-0.1331*** (0.0063)			
Homeowner				0.0351*** (0.0024)		
Urban					-0.0633*** (0.0032)	
Health expenses (log USD PPP2005)						-0.0912*** (0.0009)
Educ. expenses (log USD PPP2005)						-0.0811*** (0.0009)
Constant	-0.0597*** (0.0213)	-1.1930*** (0.0247)	-0.3713*** (0.0182)	-0.5631*** (0.0118)	-0.4374*** (0.0149)	-1.2078*** (0.0185)
Observations	76,797	60,247	103,724	285,881	216,915	135,793

Regressions span 10 LA countries and 27 household surveys (see text for further details on sample composition).

The estimation includes unreported country and time dummies.

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

**Table 21. Median Regressions with Income Interactions:
Household Saving Rate (Saving/Income), All Countries and Surveys**

Variables	(1)	(2)	(3)	(4)	(5)
HH Head Age	0.00803*** (0.000393)	0.00689*** (0.000335)	0.00601*** (0.000353)	-0.00153*** (0.000420)	0.00641*** (0.000347)
HH Head Age* Log (pc Income)	-0.000370*** (3.84e-05)				
Square HH Head Age	-4.47e-05*** (3.50e-06)	-5.61e-05*** (3.25e-06)	-4.33e-05*** (3.55e-06)	2.03e-05*** (4.18e-06)	-4.85e-05*** (3.49e-06)
Female HH Head	-0.0606*** (0.00214)	-0.0608*** (0.00212)	-0.0609*** (0.00217)	-0.0460*** (0.00259)	-0.0615*** (0.00213)
Dependency Ratio (by age)		-0.114*** (0.00381)			
Dependency Ratio (by age)* Log (pc Income)		0.0267*** (0.000739)			
Young Dependency Ratio (by age)	0.0150*** (0.00148)		-0.159*** (0.00409)		0.0158*** (0.00148)
Young Dependency Ratio (by age)* Log (pc Income)			0.0361*** (0.000808)		
Old Dependency Ratio (by age)	0.0147*** (0.00337)		-0.0428*** (0.0107)		0.0154*** (0.00336)
Old Dependency Ratio (by age)* Log (pc Income)			0.0102*** (0.00186)		
Dependency Ratio (by income)				-1.208*** (0.0124)	
Dependency Ratio (by income)* Log (pc Income)				0.178*** (0.00234)	
8-13 years of education, HH Head	-0.0692*** (0.00244)	-0.0715*** (0.00244)	-0.0717*** (0.00248)	-0.0614*** (0.00281)	-0.0291*** (0.00844)
8-13 years of education, HH Head * Log (pc Income)					-0.00805*** (0.00150)
> 13 years of education, HH Head	-0.153*** (0.00328)	-0.156*** (0.00328)	-0.153*** (0.00333)	-0.117*** (0.00385)	0.163*** (0.0115)
> 13 years of education, HH Head * Log (pc Income)					-0.0519*** (0.00181)
Log pc HH Income (USD PPP2005)	0.208*** (0.00194)	0.181*** (0.000895)	0.175*** (0.000918)	0.0732*** (0.00167)	0.203*** (0.000865)
Constant	-1.081*** (0.0136)	-0.940*** (0.0104)	-0.903*** (0.0107)	-0.0141 (0.0147)	-1.065*** (0.0106)
Observations	384,777	392,263	384,777	292,318	384,777

Regressions span 10 LA countries and 27 household surveys (see text for further details on sample composition).

The estimation includes unreported country and time dummies

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 22. Households with Positive and Negative Saving

Variable	Positive Saving	Negative Saving	Difference
Households (% of total)	54.6	45.4	9.1
Saving Rate (mean)	35.6	-159.5	195.1***
Saving Rate (median)	33.2	-45.1	78.3
Per Cap. HH Income (USD PPP2005)	410.3	195.9	214.4***
Total Household Income (USD PPP2005)	1,590.0	725.1	864.9***
Total Household Expenditure (USD PPP2005)	944.9	1,128.4	-183.5***
Dependency Ratio (by age)	0.61	0.74	-0.13***
Young Dependency Ratio (by age)	0.50	0.65	-0.15***
Old Dependency Ratio (by age)	0.12	0.10	0.02***
Dependency Ratio (by income)	0.59	0.69	-0.09***
Head with <8 years of education	0.57	0.62	-0.05***
Head with 8-13 years of education	0.27	0.26	0.01***
Head with more than 13 years of education	0.16	0.12	0.04***
Government Transfers (% household income)	0.01	0.02	-0.01***
Remittances (% household income)	0.04	0.06	-0.02***
Labor formality	0.23	0.14	0.08***
Has a Loan	0.22	0.24	-0.02***
Holds a bank account	0.14	0.10	0.04***
Has a credit card or loan	0.49	0.50	-0.01***
Homeowner	0.74	0.70	0.04***
Urban	0.67	0.64	0.03***

***, ** and * Significant at 1%, 5% and 10%, respectively.

Table 23. Households with Head under and over 65 Years Old

Variable	Household Head < 65 years old	Household Head > = 65 years old	Difference
Households (% of total)	83.4	16.4	67.0
Saving Rate (mean)	-54.1	-46.2	-7.85
Saving Rate (median)	4.9	11.8	-6.9
Per Cap. HH Income (USD PPP2005)	304.40	348.73	-44.33***
Total Household Income (USD PPP2005)	1,209.9	1,104.9	105.06***
Total Household Expenditure (USD PPP2005)	1,053.7	893.0	160.62***
Expenditure on health (log USD PPP2005)	3.20	3.51	-0.30***
Expenditure on education (log USD PPP2005)	3.39	3.22	0.17***
Household Head Age	42.3	73.4	-31.06***
Dependency Ratio (by age)	0.64	0.78	-0.14***
Young Dependency Ratio (by age)	0.61	0.30	0.31***
Old Dependency Ratio (by age)	0.03	0.61	-0.58***
Dependency Ratio (by income)	0.64	0.64	-0.00
Female Household Head	0.25	0.38	-0.13***
Number of household members	4.25	3.26	0.98***
Number of children (under 15) in the household	1.46	0.56	0.89***
Head with <8 years of education	0.55	0.77	-0.22***
Head with 8-13 years of education	0.29	0.16	0.13***
Head with more than 13 years of education	0.16	0.07	0.09***
Government Transfers (% household income)	0.02	0.03	-0.01***
Remittances (% household income)	0.04	0.08	-0.04***
Labor formality	0.22	0.02	0.20***
Has a Loan	0.24	0.16	0.08***
Holds a bank account	0.12	0.10	0.02***
Has a credit card or loan	0.51	0.42	0.08***
Homeowner	0.69	0.85	-0.16***
Urban	0.66	0.64	0.02***

***, ** and * Significant at 1%, 5% and 10%, respectively.