

A comparison of saving rates: micro evidence from sixteen Latin American and Caribbean countries

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Abstract

Using micro data on expenditure and income for sixteen Latin American and Caribbean (LAC) countries we present stylized facts of saving behavior by age, education, income and place of residence. We compute counterfactual saving rates by imposing the saving behavior, the population distribution or the income distribution of two benchmark economies (USA and Korea). Our results suggest that the difference in national saving rates between LAC and the benchmark economies can mainly be attributed to differences in saving behavior of the population and to a lower degree to differences in the distribution of the population by educational levels. Other demographic or income distribution differences are not quantitatively important as explanations of saving rates.

Keywords: saving rates, Latin America

JEL codes: C81, D12, D14, D91, E21

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1. Introduction

According to the World Development Indicators, gross national savings in Latin America as percentage of GDP was 20% in 2012. This figure is well below East Asia and Pacific (40%) and South Asia (30%), but about the same magnitude as other regions like Europe and Central Asia (17%) and Sub-Saharan Africa (17%) and above USA (12%). The comparison between these regions suggests that there is not an obvious pattern between national savings, growth and development. This might be due to significant heterogeneity within regions. In particular, Latin America and the Caribbean (LAC) is not an homogeneous entity in many dimensions including savings rates. In 2012, they were as large as 26% in Bolivia and as low as 9% in neighbor-country Paraguay.

National savings are themselves aggregates of heterogeneous households' (or individuals') personal savings decisions. On theoretical grounds, life-cycle models (Aando and Modigliani 1963, Modigliani and Brumberg 1954) imply that individuals savings behavior differ by age. Friedman (1957) permanent income hypothesis suggest that consumption (and therefore savings) will differ among individuals whose determinants of permanent income are different. Empirically, Carroll et al (1994) test for cultural effects in saving behavior in USA. As will become clear in the methodology section differences in saving rates between countries can be disaggregated into:

- i. Differences in saving decisions between similar individuals living in different countries (e.g. young people being able to spend above their income level in countries where financial restrictions are less binding, differences in adults savings due to alternative national social security systems).

- ii. Differences in the distribution in the population of the relevant groups (e.g. differences in the proportion of individuals yet to join the workforce).
- iii. Differences in the income share of groups (e.g. countries with income concentrated in individuals with low saving rates)

The goals of this paper are to address the importance of these differences with special interest in the first cause (differences in behavior among groups of the population). In particular, we are interested in addressing how similar or different are savings patterns by age, income, education level and area of residence (urban vs rural). To do so, we apply a common methodology to micro data on income and consumption of sixteen LAC countries and two benchmark economies (USA and Korea) and compute individual saving rates for the adult population and household savings rates.

In the literature there are several papers who aim as we do to set the main stylized facts of savings rates in particular countries (e.g. Butelmann and Gallego 2001 for Chile, Alegre and Pou for Spain, Castañeda 2001 for Colombia, Demery and Duck 2006 for the UK and Alan et al 2006 for Canada among others). Poterba (1994) is probably the classic cite for this type of research in whose book several case studies appeared. Deaton (1992), Browning and Lussardi (1996) and Attanasio (1999) present comprehensive surveys on consumption and saving that stress the importance of looking and micro-behavior to understand national saving differentials.

Our paper contributes to the literature on at least two grounds. First, data homogenization and application of a common methodology to a large set of countries has rarely been done in this literature (an exception being Kirsanova and Sefton 2007 who work with data of UK, USA and Italy). We go beyond individual case studies and set the stylized

facts for a wide range of LAC countries in a comparative way. The dimensions considered are important for empirical or theoretical reasons. Among other Butelmann and Gallego (2001) and Dynan et al (2004) report large disparities in saving rates by current income. The latter authors argue that the more meaningful comparison would take lifelong income and proposes a methodology for doing so.² Butelmann and Gallego (2001) also report disparities in savings rates by education level. Those with superior education were the only group with a positive median saving rate in Chile. Differences in savings rates by age are predicted by life cycle models theories and have been reported in several empirical exercises (e.g. Demery and Duck 2006 for UK and Alegre and Pou 2008 for Spain).

Second, are Latin American saving rates low or high? There is not a natural benchmark to compare their relative sizes. We perform a series of counterfactual exercises comparing the structure of savings in LAC with that of USA and Korea and find that compared to this countries LAC saving rates are indeed low. The counterfactual exercises allow identifying the main differences in saving determinants between LAC and these two benchmarks. In choosing the benchmarks we selected countries with developed financial markets where constraints to saving and to borrowing are likely to be lower than in Latin America. We wanted also to take countries with different cultural traits that could imply different behavior with respect to consumption and savings. Latin America belonging to the Spanish-Portuguese tradition has many differences with the USA Anglo-Saxon and Korean Asian background. Finally, according to WDI Korean gross savings as percentage of GDP are larger than LAC gross savings that are themselves larger than USA gross savings.

² See Gandelman (2014) for an application to LAC countries.

The paper proceeds as follows. Section 2 presents the methodology and section 3 the data. The descriptive results on saving rates are reported in section 4, the counterfactual exercises in section 5 and section 6 concludes.

2. Methodology

a. Decomposition

National private savings can be decomposed among groups of the population. Various dimensions can be used to decompose saving rates. Aggregate private savings are the sum of savings of all relevant groups in a country. These groups are indexed by i (e.g. age brackets). Y , C stand for total private income and consumption while y_i and c_i for the group income and consumption equivalent. n_i is the size of group i . Therefore national saving is:

$$Y - C = \sum_i (y_i - c_i) n_i \quad (1)$$

By some simple algebraic manipulation this expression can be transformed into the following disaggregation of the national private savings rate:

$$S_t = \frac{Y - C}{Y} = \sum_i \left(\frac{y_i - c_i}{y_i} \right) \left(\frac{y_i}{Y/N} \right) \left(\frac{n_i}{N} \right) \quad (2)$$

where N is total population.

The first term within the sum is the i th group savings rate. The second term and third term can be seen as how much this group savings rate weights for the aggregate. The second term gives larger weight to those groups whose income level is above the average income level. The third term weights the savings rate according to the relative size of the group. Differences in any three of these terms can explain differences in national saving rates.

b. Counterfactual saving rates

We compute counterfactual saving rates considering various dimensions (age, education income and place of residence). For easiness of exposition we explain them in terms of age brackets but the same applies to the other disaggregation of the population. We take each LAC country and change one of its characteristics (savings rates, population distribution and income distribution by age bracket) for the characteristic of the benchmark economies. In this way we compute the counterfactual LAC saving rates if it had one characteristic of the USA or Korea.

Let the superscript ^{*} refer to the benchmark countries (USA or Korea) while the variables without superscript refer to a LAC country. There are three simple exercises to be performed with respect to each benchmark economy.

1. To what extend are the differences in the national private saving rates between LAC and USA/Korea due to different saving behavior of the population? We assume that groups by age in LAC countries have the saving behavior of the population in USA/Korea but that the income and demographic distribution remains as in LAC. The counterfactual national saving rate for each LAC country is:

$$\hat{S}_{sav=sav^*}^{LA} = \sum_i \left(\frac{y_i^* - c_i^*}{y_i^*} \right) \left(\frac{y_i}{Y/N} \right) \left(\frac{n_i}{N} \right) \quad (3)$$

2. To what extend the differences in the national private saving rates between LAC and USA/Korea are due to differences in demographic distribution? We assume that the age population distribution of each LAC country is equal to that of USA/Korea but that the group saving behavior and the income distribution remains at the levels of a LAC country. The counterfactual national saving rate for each LAC country is:

$$\hat{S}_{pop=pop^*}^{LA} = \sum_i \left(\frac{y_i - c_i}{y_i} \right) \left(\frac{y_i}{Y/N} \right) \left(\frac{n_i^*}{N^*} \right) \quad (4)$$

3. To what extend are the differences in saving rates between LAC and USA/Korea due to differences in income distribution? We assume that the income distribution by age bracket in LAC is the same as in USA/Korea but remain the saving behavior by groups and the age population distribution as that of each LAC country. The counterfactual national saving rate for each LAC country is:

$$\hat{S}_{inc=inc^*}^{LA} = \sum_i \left(\frac{y_i - c_i}{y_i} \right) \left(\frac{y_i^*}{Y^*/N^*} \right) \left(\frac{n_i}{N} \right) \quad (5)$$

c. Household vs. individual savings

It is important to define whether we treat individuals or households as the decision makers. Ex ante there are pro and cons for both options. First, empirically it is easier to work at the household level since consumption is not reported at the individual level. To compute individual savings rates we need to allocate household consumption between household

members using some more or less ad hoc allocation rule. Second, economic theory in general and more precisely life cycle theory is constructed assuming individual and not household decision makers. Third, there are differences between household members in some of the variables of interest like age and education. Computing household saving rates forces to classify households' savings by the characteristic of the household head which may or may not be demographically representative of his household. In the next sections we will show that some of our results are more reasonable using individual savings rates but for completeness and robustness analysis we perform our analysis both at the household and individual level.

In computing the individual saving rates we follow the methodology proposed by Kirsanova and Sefton (2007) to allocate household consumption (and when necessary also income) within individuals.

The starting point is the division of household members in three groups:

- i. Dependent children: individuals younger than 18
- ii. Principal adults: the head of the household and his partner (if any)
- iii. Dependent adults: other adults.

The consumption level of a newborn baby is assumed to be 30% of that of an adult and this proportion is assumed to increase linearly until age 18 where it is considered an adult. After allocating consumption in this way, the consumption of dependent children is reallocated equally between the principal adults. For example, consider a household composed by a couple, a newborn baby and one dependent adult. The household consumption level is 100. The preliminary assignment of consumption consists of 0.3 units to the baby, 1 to the father, 1 to the mother and 1 to the other adult. The 0.3 of the baby is later re-allocated to both parents that end up each with 1.15 units of consumption. The total consumption of 100

is divided between 34.8 ($100 \times 1.15 / 3.3$) to each principal adult and 30.3 ($100 \times 1 / 3.3$) to the dependent adult.

In general, the information on income provided by household surveys is less problematic since the major sources of income (e.g. labor income) are generally well identified at the individual level. When such identification cannot be done (e.g. a housing government subsidy) this income is divided like consumption.

3. Data

Countries perform income and expenditure surveys every decade or so as an input in the construction of the Consumer Price Index. We work with microdata for sixteen LAC countries (Argentina, Bahamas, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru and Uruguay), USA and Korea. The databases of Nicaragua presents data only at the household level.

There are some differences in the way data is gathered and reported in the surveys. To the best of our ability we tried to homogenize the definition of the savings rates. Income is after tax in all cases but in Mexico and Nicaragua where it is reported before tax and there is no detailed information on paid taxes. In Bahamas, Bolivia, Brazil, Honduras and Paraguay the documentation does not inform whether income is before or after tax. All forms of monetary and non-monetary income are computed. Capital gains are not computed as current income but earned interests and dividends are.

The surveys request expenditures over various time frames (yearly, quarterly, monthly, weakly and daily). The National Institutes of Statistics of all countries but Mexico and USA transform these totals into monthly figures. These countries transform it into quarterly data. Consumption of durable goods is also reported but only it is imputed the

portion corresponding to the current period. There are other forms of consumption and income that are imputed. The most important is the rent value of houses for homeowners that appear as consumption and income in all cases but in Argentina, Barbados, Korea and the USA that this information is not available. Home production for consumption is treated in the same way.

Survey coverage includes both urban and rural setting in most countries. In Bahamas, Barbados, Chile, Nicaragua, Panama, Uruguay and Korea is only urban.

4. Differences in savings between countries

The third column of Table 1 presents our estimates of the households national saving rates from the income and consumption surveys. To have an idea of how reasonable our estimates are we also report the WDI measure of gross domestic savings over GDP for each country. In many countries the survey was conducted during two years. For these countries we report the average of the WDI measure for those years.

As expected our estimates (except for Bolivia, Nicaragua and USA) are below the national gross domestic savings figures since they only capture the savings preformed by families within a country. The difference between our savings rates and the WDI can be seen as a reflection of firms and government saving rates. Bolivia, Nicaragua and the USA households' savings rates being larger than the national saving rate imply that firms and governments in these countries are saving at a lower rate than households. Dynan et al (2004) working with the same database as we do present results similar to us for USA. They report that the average savings rates for ages 30 to 59 is 30% and for the whole sample 25%. In their study they use two other data sources and estimate savings rates as changes in net assets. These latter estimates are lower than savings rates from income and consumption data.

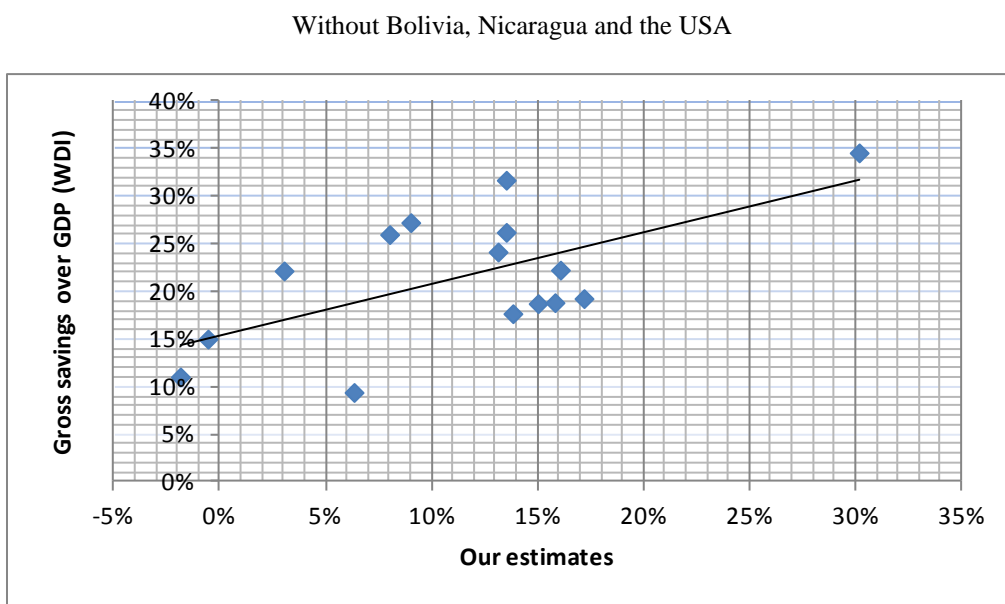
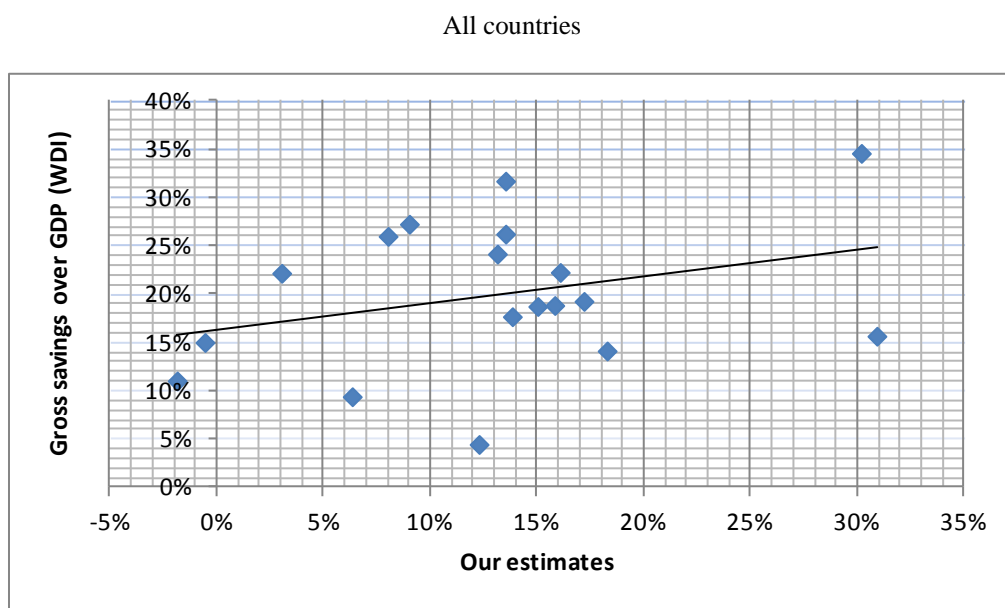
The correlation between our estimates and gross domestic savings is 0.31. The top panel of figure 1 reports a scatter plot. Without considering USA the correlation increases to 0.44 and without the three countries (Bolivia, Nicaragua and USA) for which we find a household saving rate above the gross domestic saving rate the correlation increases to 0.62. Figure 1 reports the relevant scatter plots. We conclude that for the LAC countries our estimates are reasonably consistent with published national data.

Table 1. National savings rate			
	Year	Our estimates	Gross domestic saving over GDP
Argentina	2004 - 2005	13%	24%
Bahamas	2013	-1%	15%
Barbados	2010	6%	9%
Bolivia	2003 - 2004	18%	14%
Brazil	2008-2009	17%	19%
Chile	2011 - 2012	8%	26%
Colombia	2013	16%	22%
Costa Rica	2013	14%	18%
Ecuador	2011 - 2012	9%	27%
Honduras	2004	-2%	11%
Mexico	2006	3%	22%
Nicaragua	2006 - 2007	12%	4%
Panama	2007 - 2008	14%	32%
Paraguay	2011-2012	15%	19%
Peru	2008 - 2009	14%	26%
Uruguay	2005 - 2006	16%	19%
USA	2012	31%	16%
Korea	2005	30%	35%

Note: Gross domestic savings are calculated as GDP less final consumption expenditure (total consumption). Source WDI. The year reported is the year of the survey used for our estimates. If the survey was conducted in more than one year, we report the average of the WDI indicator.

In the rest of this section we present our estimates of individual and household saving rates by age, education, income level and place of residence for all countries. These estimates correspond to the first term of equation (2).

Figure 1. Scatter plot: estimated saving rates & gross national savings over GDP



Source: own elaboration based on income and consumption household surveys.

a. Saving rates by age

Table 2 and Table 3 report the saving rates by age brackets. Table 2 is based on individuals saving rates and Table 3 on household saving rates classified by the household head age. The life cycle model predicts an inverse U shape for saving rates. In the absence of financial restrictions young individuals consume more than their current income experiencing negative saving rates. Also older individuals (e.g. after retirement) maintain a consumption pattern above their current income. The negative saving rates at the extreme years of adult life are financed by the positive saving rates in the middle years.

Figure A1 in the appendix shows that the inverse U shape prediction holds for the seventeen countries that we can compute individual saving rates. Negative saving rates for young individuals are present in the data (except Barbados) but we find 0 and negative saving rates for older adults only in Bahamas, Barbados, Costa Rica, Honduras, Mexico, Peru and Korea. Figure A4 in the appendix report household saving rates for the eighteen countries here considered classified by household head age. The inverse U shape is less evident in most countries but in Brazil, Mexico and USA. There are two differences between data in Table 2 (Figure A1) and Table 3 (Figure A4). First, for the individual savings we divided consumption and household income as explained in the methodological section. Second, the classification of individual savings is based on the age of the individual taking the consumption-saving decision. The household saving rates accumulates the saving rates of individuals of different ages. These household saving rates are classified by the age of the household head. Therefore it is not surprising that the individual saving rates of Table 2 and Figure A1 are closer to what is expected by the life

cycle hypothesis. This is an additional argument in favor of paying special attention to the counterfactuals based on individual saving rates.

Table 2. Personal saving rates by age brackets									
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador
less than 25	-57%	-44%	3%	-29%	-55%	-91%	-27%	-78%	-30%
25-29	0%	-8%	12%	13%	0%	-1%	11%	6%	7%
30-34	7%	6%	15%	21%	10%	10%	13%	17%	9%
35-39	9%	14%	4%	27%	13%	13%	18%	17%	11%
40-44	17%	21%	13%	25%	20%	13%	24%	18%	15%
45-49	24%	14%	15%	32%	29%	14%	27%	31%	18%
50-54	31%	20%	8%	36%	32%	23%	27%	30%	20%
55-59	33%	15%	13%	32%	31%	27%	27%	26%	21%
60-64	28%	-15%	-2%	23%	33%	20%	14%	37%	17%
65-69	21%	-20%	-5%	19%	36%	21%	27%	3%	19%
70-74	21%	-50%	-11%	14%	32%	10%	20%	15%	-1%
75 and more	16%	-197%	-13%	14%	30%	6%	8%	-14%	1%
	Honduras	Mexico		Panama	Paraguay	Peru	Uruguay	USA	Korea
less than 25	-27%	-33%		-32%	-22%	-28%	-63%	-43%	-88%
25-29	-6%	1%		6%	11%	18%	3%	21%	30%
30-34	-3%	7%		12%	14%	15%	13%	34%	38%
35-39	4%	6%		13%	16%	16%	8%	36%	38%
40-44	8%	7%		20%	21%	21%	19%	40%	33%
45-49	14%	16%		11%	20%	22%	24%	38%	40%
50-54	8%	18%		27%	16%	22%	31%	41%	46%
55-59	16%	18%		22%	41%	23%	27%	39%	40%
60-64	-12%	3%		28%	31%	20%	22%	29%	15%
65-69	7%	-4%		21%	17%	12%	20%	30%	4%
70-74	-34%	-9%		21%	20%	4%	26%	28%	-31%
75 and more	-38%	-35%		16%	14%	0%	22%	12%	-69%

Source: own elaboration based on income and consumption household surveys.

Table 3. Household saving rates by age brackets and household head									
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador
less than 25	-3%	-16%	6%	12%	-8%	-22%	4%	-40%	4%
25-29	3%	-16%	5%	14%	4%	1%	5%	-2%	5%
30-34	7%	5%	-8%	18%	10%	9%	3%	13%	5%
35-39	5%	6%	-6%	20%	12%	7%	12%	10%	6%
40-44	10%	13%	5%	18%	15%	0%	15%	11%	8%
45-49	10%	6%	12%	19%	17%	4%	16%	20%	8%
50-54	18%	12%	1%	22%	21%	2%	19%	20%	9%
55-59	20%	12%	15%	19%	19%	12%	21%	17%	13%
60-64	22%	-11%	11%	22%	24%	14%	25%	30%	14%
65-69	21%	-1%	14%	15%	25%	21%	26%	13%	16%
70-74	20%	-24%	3%	13%	24%	20%	21%	13%	9%
75 and more	16%	-90%	3%	15%	27%	13%	25%	3%	10%
	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay	USA	Korea
less than 25	-4%	-15%	-1%	1%	-7%	4%	12%	3%	57%
25-29	-6%	-5%	7%	7%	2%	10%	22%	30%	39%
30-34	-8%	5%	13%	9%	5%	7%	14%	34%	40%
35-39	-10%	1%	9%	6%	8%	10%	10%	36%	37%
40-44	-2%	3%	13%	14%	14%	12%	13%	41%	30%
45-49	5%	7%	10%	6%	12%	12%	15%	29%	21%
50-54	-4%	6%	13%	12%	16%	15%	20%	34%	30%
55-59	7%	9%	24%	14%	28%	18%	13%	32%	31%
60-64	-6%	7%	17%	22%	27%	18%	19%	32%	31%
65-69	10%	5%	8%	21%	16%	16%	14%	27%	28%
70-74	-1%	1%	9%	17%	17%	13%	21%	25%	7%
75 and more	-2%	-9%	7%	24%	30%	18%	17%	11%	18%

Source: own elaboration based on income and consumption household surveys.

b. Saving rates by education

We expect a positive correlation between saving rates and educational levels at least by two reasons. First, the decision to engage in advance educational studies implies the postponement of entry into labor markets and therefore the postponement of the most income generating phase of an individual's life. There is a relation between education and time preferences that is similar to the relation between savings and time preference. More impatient people with a relative lower valuation of future are likely to enter the labor market earlier and to study and save less. Second, education might be a reasonable proxy for permanent income. If rich people save more (a question with a less than obvious answer)³, more educated people should also save more.

Figure 2 (Table 4) and Figure 3 (Table 5) present the saving rates by educational level. The degree of information on education between countries is dissimilar. The common ground for all countries is a division between: incomplete primary education, incomplete secondary education, complete secondary education and more than complete secondary education (at least some tertiary education). The top and bottom panels reports the same saving rates but differently classified.

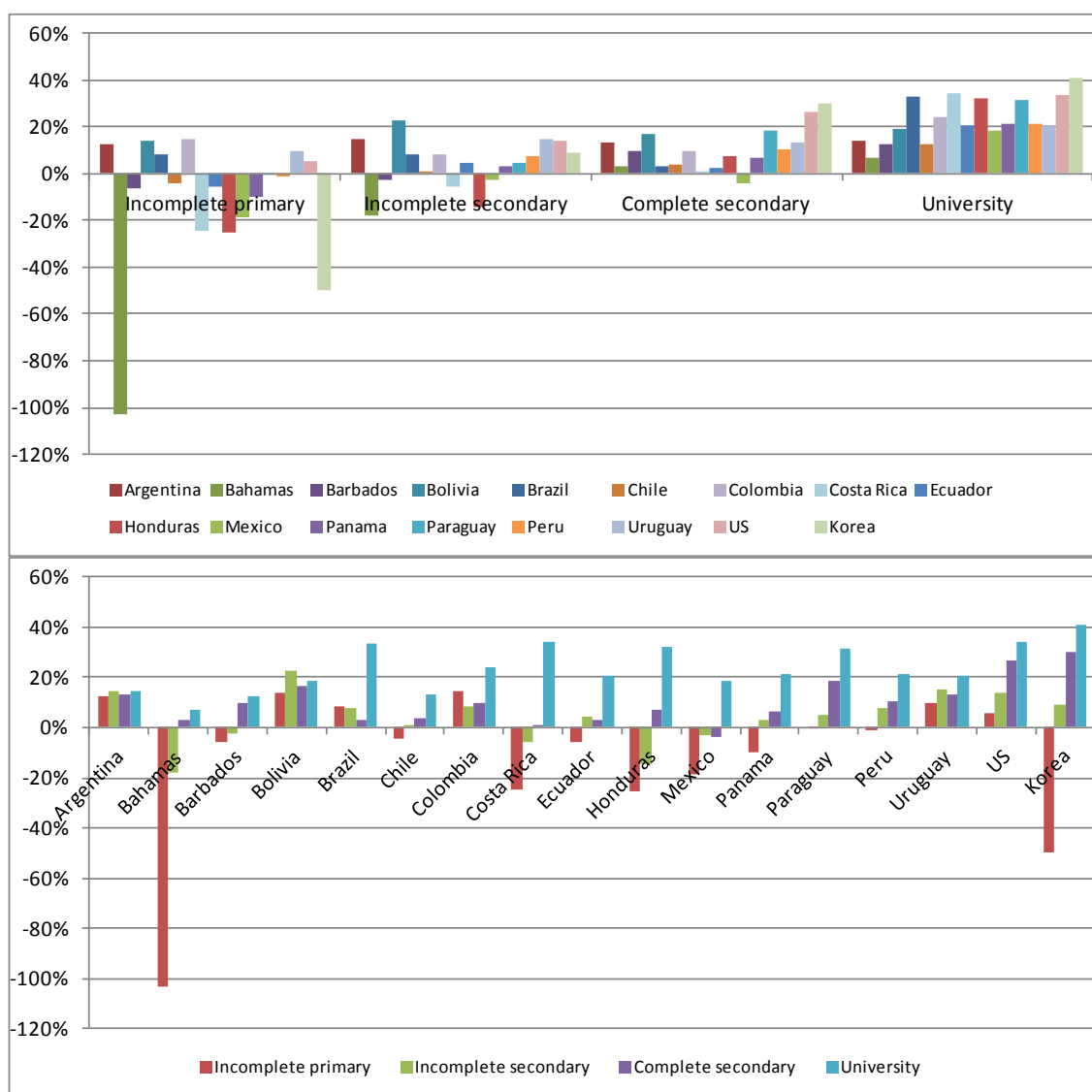
Personal saving rates have a very clear and monotonic relation with education for most countries (but Argentina, Bolivia, Brazil and Uruguay). More educated individuals save more than less educated individuals. Saving rates are negative in nine countries out of seventeen for the less educated.

This pattern of savings-education is much less clear in household savings. For instance, Barbados has exactly the opposite relation with lower household saving rates for household of more educated household heads. As before the drawback in the personal saving rates is that to compute it we have to make some assumptions on how to

³ See next section and Dynan et al (2004).

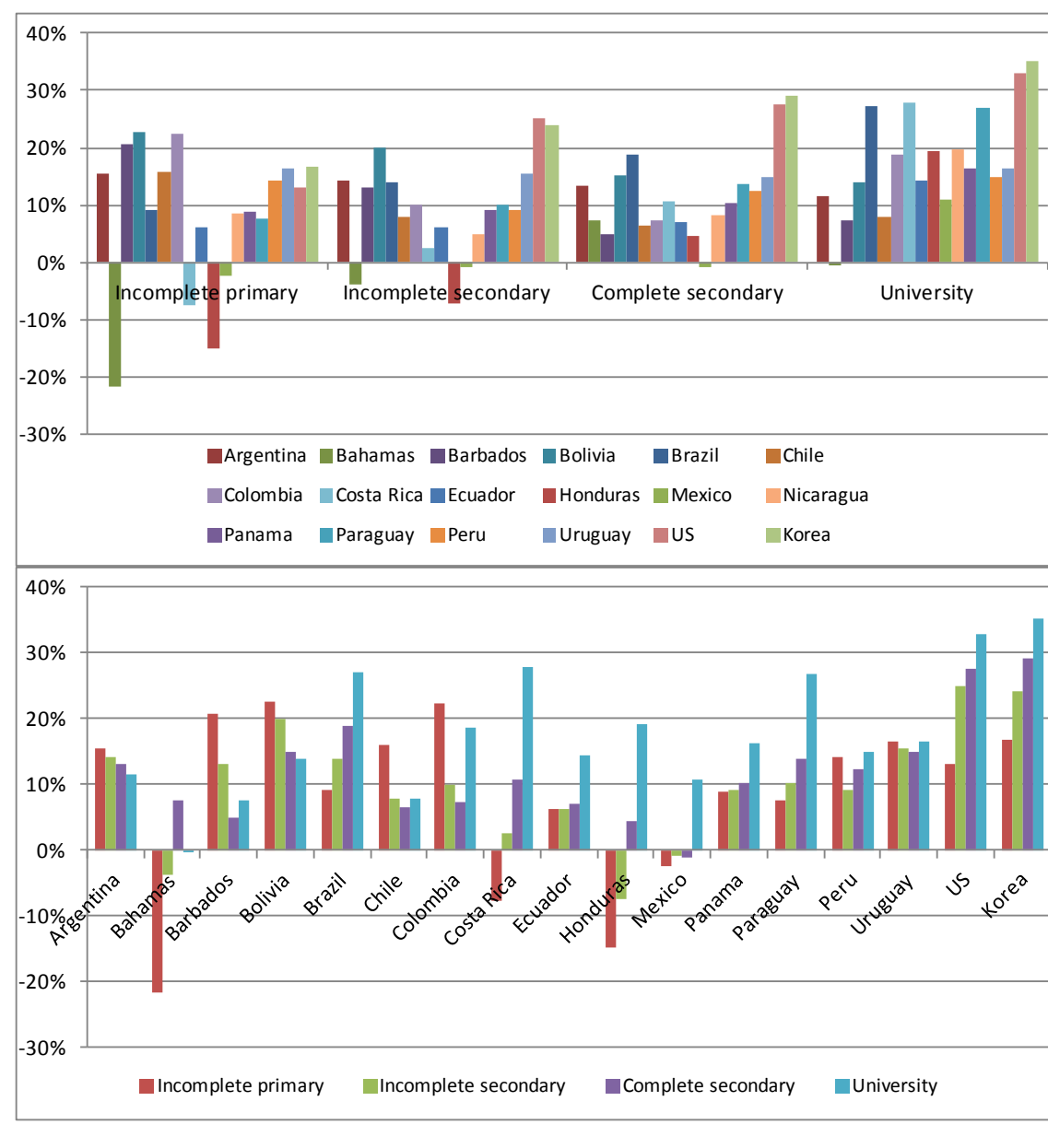
distribute consumption and household income as explained in the methodology section. On the other hand, the drawback of the household head saving rates is that it accumulates saving rates of individuals with different educational levels within a household and assigns the saving rate to the household head. Given the evidence in the literature of positive assortative matching in marriage markets (individuals tend to marry others of similar educational level) we were expecting to find a much similar picture between personal and household level saving rates defined by educational level.

Figure 2. Personal saving rates by education level



Source: own elaboration based on income and consumption household surveys

Figure 3. Household saving rates by education level of household head



Source: own elaboration based on income and consumption household surveys.

Table 4. Personal saving rates by educational level									
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador
Incomplete primary	13%	-103%	-6%	14%	8%	-4%	15%	-25%	-5%
Incomplete secondary	15%	-18%	-3%	23%	8%	0%	9%	-6%	5%
Complete secondary	13%	3%	10%	17%	3%	4%	10%	1%	3%
University	14%	7%	12%	19%	33%	13%	24%	34%	21%
	Honduras	Mexico		Panama	Paraguay	Peru	Uruguay	USA	Korea
Incomplete primary	-25%	-19%		-10%	0%	-1%	10%	5%	-50%
Incomplete secondary	-14%	-3%		3%	5%	8%	15%	14%	9%
Complete secondary	7%	-4%		7%	19%	11%	13%	27%	30%
University	32%	18%		21%	31%	21%	20%	34%	41%

Source: own elaboration based on income and consumption household surveys.

Table 5. Household saving rates by household head educational level									
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador
Incomplete primary	15%	-22%	21%	23%	9%	16%	22%	-8%	6%
Incomplete secondary	14%	-4%	13%	20%	14%	8%	10%	2%	6%
Complete secondary	13%	7%	5%	15%	19%	6%	7%	11%	7%
University	12%	0%	7%	14%	27%	8%	19%	28%	14%
	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay	USA	Korea
Incomplete primary	-15%	-2%	8%	9%	8%	14%	17%	13%	17%
Incomplete secondary	-7%	-1%	5%	9%	10%	9%	16%	25%	24%
Complete secondary	5%	-1%	8%	10%	14%	12%	15%	28%	29%
University	19%	11%	20%	16%	27%	15%	16%	33%	35%

Source: own elaboration based on income and consumption household surveys.

c. Saving rates by income level

The relation between saving rates and income levels is less clear than what might look at first glance. Popular saying might be inclined to assert that rich individuals save more because they can afford to do so. Looking from the other side those that save more might become richer as the Benjamin Franklin adagio says “a penny saved is a penny earned” implying causality from savings to wealth. Either way there is a sense that saving rates and income/wealth go hand in hand.

From an economist perspective this relation is not so obvious. First, even if savings in absolute levels are higher for richer people, in relative terms with respect to income this does not need to be the case. Second, the life cycle model predicts a relation between saving rates and age that is common to all income levels. According to it, older richer individuals would use their past savings to finance current consumption above their current income and experience negative savings. If the past savings of elderly rich people is larger than the savings of poorer people, when old, rich individuals will be able to have larger negative saving than poorer individuals. Therefore, the relation between current income and savings might depend also on age.

Empirically there is one more problem. Individuals experiencing temporary income shocks are not likely to dramatically alter their consumption level. A negative temporary income shock will move someone down on the income distribution and at the same time produce a smaller (even negative) saving rate than what expected. On the other hand, a positive temporary income shock will move someone up on the income distribution at the same time that will produce a larger than normal saving rates. Therefore, temporary shocks might induce a false positive relation. Measurement error

works as temporary shocks inducing a spurious positive correlation between current income and savings.

The data presented in Figures 4 (Table 6) and Figure 5 (Table 7) do not address the more interesting question of the relation between saving rates and permanent income.⁴ Rather they refer to current income with all the difficulties previously mentioned in their interpretation.

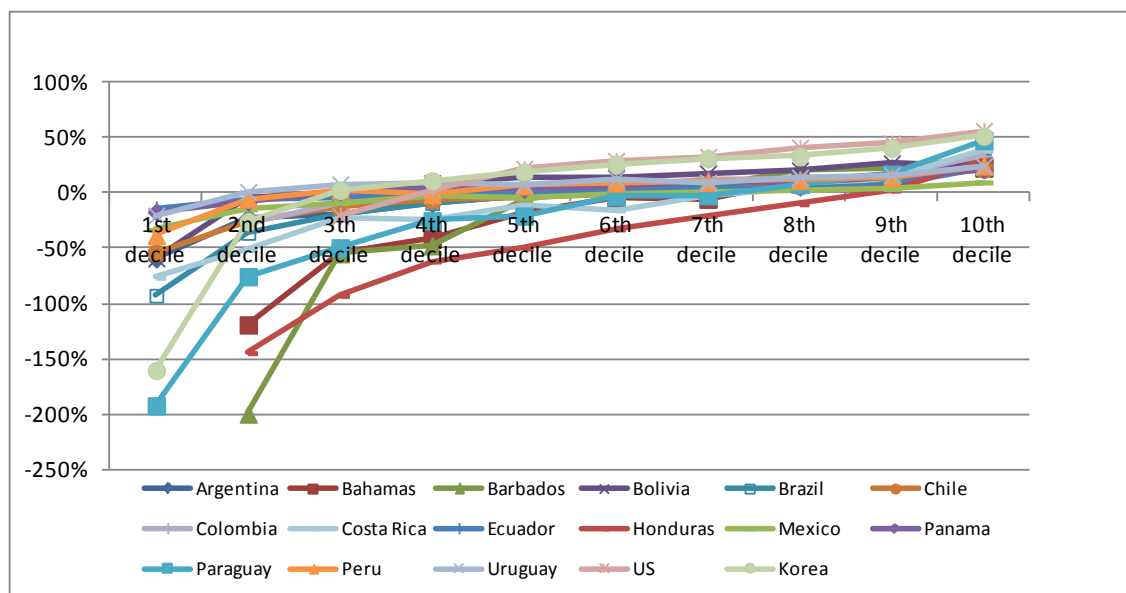
The savings rates of lower income deciles of some countries are so large in absolute value that we have to exclude them from the figures in order to show that the positive relation between saving rates and current income is pervasive in all the economies considered. In the figures we dropped all saving rates below -300% (Bahamas, Barbados, Colombia, Honduras and USA).

According to the personal saving rates, the first income bracket with positive savings is the 9th decile for Honduras, the 8th decile for Bahamas, Costa Rica and Paraguay, the 7th decile for Chile and Mexico, the 6th decile for Argentina and Barbados and Brazil, the 5th for Colombia and Ecuador, the 4th for USA the 3rd for Bolivia, Panama, Peru and Korea and the 2nd for Uruguay. According to household savings, the first bracket with positive savings is the 9th decile for Honduras, the 7th decile for Bahamas, Costa Rica and Paraguay, the 6th decile for Barbados, Mexico and Nicaragua the 5th for Argentina, Brazil and Chile, the 4th for Bolivia, Colombia and USA, the 3rd for Ecuador, Panama, Peru and Korea and the 2nd for Uruguay. Although, there are some differences in the ranking by personal and household savings from both rankings it results that Honduras, Bahamas, Costa Rica and Paraguay are the countries where positive saving rates are more concentrated at the top of the income distribution. On the

⁴ Gandelman (2014) finds that in most LAC countries the rich save more using an income lifetime and a wealth proxy.

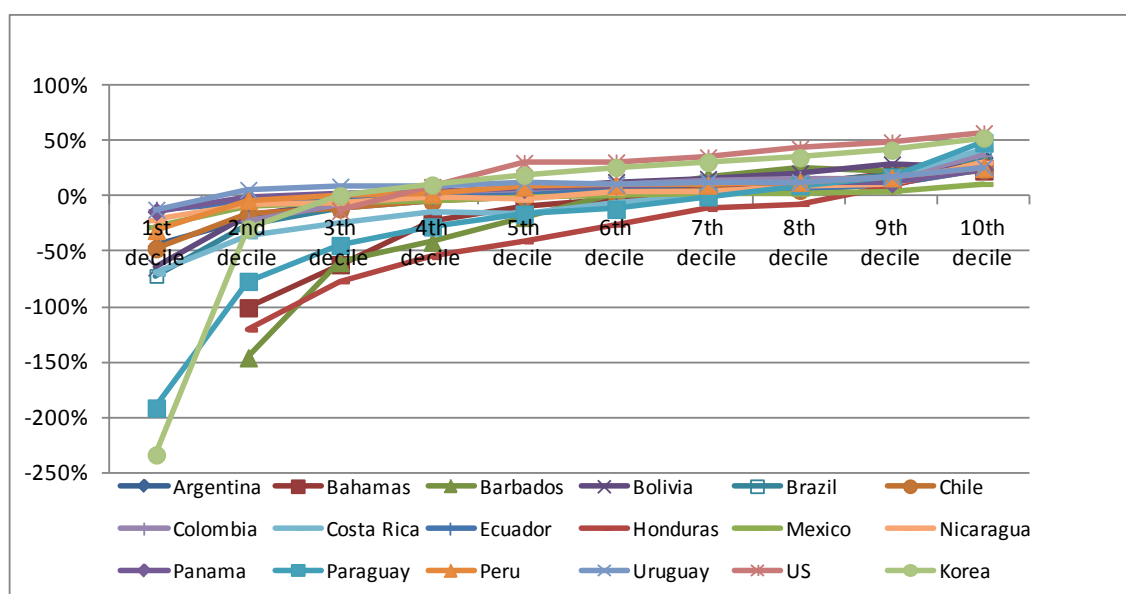
other hand, Uruguay is the LAC country where positive savings rates are more widespread among income brackets.

Figure 4. Personal saving rates by income level



Source: own elaboration based on income and consumption household surveys.

Figure 5. Household saving rates by household income level



Source: own elaboration based on income and consumption household surveys.

Table 6. Personal saving rates by income deciles									
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador
1st decile	-59%	-450%	-1291%	-59%	0%	-54%	-498%	-76%	-14%
2nd decile	-22%	-119%	-200%	-5%	-36%	-26%	-27%	-51%	-6%
3th decile	-19%	-53%	-55%	1%	-19%	-13%	-10%	-23%	-5%
4th decile	-9%	-41%	-48%	9%	-9%	-6%	-3%	-25%	-1%
5th decile	-3%	-18%	-5%	13%	-3%	-4%	2%	-12%	0%
6th decile	3%	-4%	6%	14%	3%	-1%	7%	-16%	2%
7th decile	5%	-5%	5%	18%	8%	2%	12%	-3%	4%
8th decile	10%	11%	21%	21%	11%	7%	13%	5%	5%
9th decile	13%	14%	23%	27%	17%	8%	16%	15%	8%
10th decile	31%	23%	32%	24%	34%	22%	34%	38%	22%
	Honduras	Mexico		Panama	Paraguay	Peru	Uruguay	USA	Korea
1st decile	-361%	-33%		-17%	-192%	-38%	-20%	-2945%	-160%
2nd decile	-145%	-15%		-8%	-76%	-5%	1%	-503%	-26%
3th decile	-93%	-9%		1%	-49%	3%	8%	-21%	3%
4th decile	-62%	-3%		3%	-25%	-1%	8%	3%	11%
5th decile	-50%	-5%		3%	-21%	7%	8%	22%	19%
6th decile	-33%	-1%		6%	-3%	9%	13%	29%	26%
7th decile	-20%	1%		10%	-2%	10%	10%	33%	31%
8th decile	-10%	3%		10%	8%	12%	14%	41%	33%
9th decile	2%	4%		14%	17%	14%	16%	45%	41%
10th decile	30%	10%		21%	48%	25%	24%	56%	52%

Source: own elaboration based on income and consumption household surveys.

Table 7. Household saving rates by income deciles									
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador
1st decile	-45%	-430%	-1260%	-64%	-72%	-47%	-379%	-70%	-12%
2nd decile	-20%	-101%	-146%	-17%	-25%	-17%	-22%	-36%	-6%
3th decile	-9%	-62%	-60%	-5%	-11%	-11%	-8%	-25%	0%
4th decile	-2%	-23%	-41%	2%	-4%	-5%	1%	-14%	0%
5th decile	2%	-9%	-19%	8%	4%	0%	6%	-16%	0%
6th decile	5%	-3%	3%	13%	5%	2%	11%	-6%	4%
7th decile	8%	8%	18%	16%	12%	6%	14%	0%	4%
8th decile	12%	11%	25%	21%	12%	5%	16%	11%	6%
9th decile	18%	21%	23%	29%	19%	10%	16%	18%	11%
10th decile	35%	23%	32%	26%	36%	24%	37%	42%	24%
	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay	USA	Korea
1st decile	-324%	-28%	-22%	-14%	-191%	-31%	-12%	-2945%	-234%
2nd decile	-120%	-9%	-8%	-1%	-77%	-4%	6%	-466%	-29%
3th decile	-77%	-6%	-6%	2%	-44%	1%	9%	-13%	1%
4th decile	-55%	-4%	-1%	4%	-28%	2%	8%	9%	10%
5th decile	-41%	-1%	-3%	7%	-16%	8%	13%	30%	19%
6th decile	-26%	1%	3%	10%	-12%	10%	11%	31%	26%
7th decile	-11%	3%	5%	10%	0%	10%	13%	35%	31%
8th decile	-7%	2%	8%	13%	10%	13%	13%	43%	35%
9th decile	9%	5%	11%	12%	17%	17%	18%	49%	42%
10th decile	31%	11%	31%	25%	48%	25%	26%	57%	53%

Source: own elaboration based on income and consumption household surveys.

d. Saving rates by region of residence

There are various reasons to think that there might be differences between urban and rural regions. Without presenting a complete list some of them are the following. Financial services are more concentrated on urban areas. There is lower enforcement of labor regulation in rural areas and rural workers are less likely to benefit from pensions and social assistance after retirement. Consumption patterns in rural and urban areas are different due to availability of shopping centers and due to cultural traits. There are also differences in average education levels in rural and urban areas. Some of these reasons are likely to increase and some to decrease savings and therefore we do not have a clear prediction of what to expect on saving differences between urban and rural areas. Table 8 reports that saving rates in rural areas is larger than in urban areas in Argentina, Colombia and Costa Rica. Saving rates are larger in urban areas than in rural areas in Brazil, Honduras, Mexico and Paraguay and are of similar magnitude in Bolivia, Ecuador, Peru and USA.

Table 8. Saving rates by residence area						
	Argentina	Bolivia	Brazil	Colombia	Costa Rica	
Rural	25%	33%	6%	29%	17%	
Urban	12%	34%	18%	15%	-5%	
	Ecuador	Honduras	Mexico	Paraguay	Peru	USA
Rural	7%	-15%	-4%	5%	16%	32%
Urban	10%	3%	4%	18%	13%	31%

Source: own elaboration based on income and consumption household surveys.

5. Counterfactual exercises

As explained in the methodological section the counterfactual exercises aim at measuring the importance of three different factors in the national private saving rates. First, it might be that institutional characteristics (financial system, pension system, macro instability, etc) or national cultural traits determine different savings behavior between countries. Second, it might be that conditional on their characteristics (e.g. age) individuals in two countries have the same saving behavior but that the distribution of people is different between countries. Even if comparable individuals in two countries have exactly the same behavior, a country with a larger percentage of retired people will have a lower national saving rate. Third, still if the first two factors are the same in two countries, it might be that national saving rates differ due to differences in income distribution. Consider two countries where people conditional on their characteristics have exactly the same saving behavior and that the people-characteristics distribution is the same. Suppose the distribution of income in one country is more concentrated for older already retired individuals and in the other country the income distribution is more concentrated in adults that are still on the job market, the national savings rates of the second country would be larger than the first country.

Summing up we compute our counterfactual exercises allowing national saving rates to differ by: differences in saving behavior, differences in population distribution and differences in income distribution. These three determinants of the national private saving rates are the three terms of equation (2). The counterfactuals can be computed for any meaning break of the population. We present them by age brackets, educational levels and income distribution.

To compute the counterfactual savings rate we take each LAC country and impose one characteristic of a benchmark economy leaving the other two characteristics as is.

The basic data to construct the counterfactuals is presented in the Appendix. Figures A1 and A4 report for each country the saving rates by age (personal and household level respectively). Note the inverse U shape in most countries in Figure A1. The inverse U shaped in Figure A4 is less clear in many countries. USA in both Figures presents the theory predicted age behavior.

Figures A2 and A5 present the age distribution of the population of each country (personal and household level respectively). The first age bracket goes from 18 to 24, the rest go in steps of 5 years old but the last one that accumulates all individuals above 75 years old. For the graph based on individuals we observe, as expected, a decreasing line but in the last bracket. Figure A5 shows an inverse U shapes for all countries but Barbados. This form is due to two factors. First, it is a reflection of the effect of mortality through time (that produces the negative slopes in Figure A2). Second, it reflects the lower probability of young individuals of being household heads compared to older individuals.

Figures A3 and A6 report a picture of relative income by age. Those above (below) the 100% line reflect age brackets whose individuals or households earn more (less) than the country average. The inverse U shape reflects that younger and older people earn less than adults in their labor market years as there is abundant evidence from the labor economics literature. According to A3, in relative terms, Uruguayan and Brazilian elderly are the richer of the region with income above the national average. In all other countries the elderly are below the national average. In relative terms the

poorest elderly are those of Korea, Bahamas and Barbados with 25%, 53% and 51% of national income respectively. On the other hand, the LAC countries with lower relative income for the youngest bracket are Chile, Argentina and Uruguay with average income of 36%, 38, and 36% of national income. USA and Korea youngest group average income is 33% and 32% of the national income respectively.

Table 9 presents summary results of the counterfactual exercises that are presented in detail in Tables A2 through A8 in the appendix. The top panel presents the average counterfactual saving rate. The bottom panel presents the average change in national saving rates.

According to the exercises based on age brackets differences in national saving rates with the benchmark economies are mainly due to differences in saving behavior. Imposing the USA saving behavior will more than duplicate the saving rates with increase of between 16 to 20 percentage points (individual and household based exercises respectively). The counterfactual based on Korea also suggest that saving behavior is the main driver of differences but the exercise based on individual saving rates implies an increase of 7 percentage points while the exercise based on household implies an increase of 19 percentage points. The results reported in the appendix suggest that according to the individually based counterfactuals for Bolivia and Paraguay differences in the age-distribution with Korea explain more than differences in behavior. For Argentina, Colombia, Panama and Peru differences in saving behavior by age and in age distribution explain about the same change in the counterfactuals.

The exercises based on education levels show that differences in national saving rates with the benchmark economies are due to differences in saving behavior and in the

distribution among educational levels in the benchmark economies and in LAC. In the appendix we show that for some countries (Argentina, Bahamas, Barbados, Chile, Panama) the effect of saving rates is quantitatively more important than education-distribution while for others (Brazil, Costa Rica, Honduras, Paraguay, Uruguay) the opposite is true. There are also some other countries where the effect of this two dimensions is about the same size.

The exercises based on breaking the saving rate by income groups shows that the most relevant dimension to explain differences in saving rates with the benchmark economies is differences in saving behavior but they run in opposite direction for USA and Korea. Imposing the USA saving behavior (by income quintiles) will decrease the LAC average saving rates by 15 percentage points making it negative. Imposing the Korean saving behavior (by income quintiles) will triple the average LAC saving rate.

Finally, the exercises based on region of residence suggest again that differences in saving behavior with USA are the main driver of differences in national saving rates. We do not compute counterfactuals by residence with Korea since the Korean survey gathers information only urban.

Table 9 . Summay of counterfactual excercices (simple country averages)

<i>Average LAC savings rate</i>		11%			
<i>Benchmark economy:</i>		USA	Korea	USA	Korea
<i>Microdata based on:</i>		Individuals	Individuals	Households	Households
<i>Characteristic imposed:</i>		Counter factual saving rates			
Excercise based on age brackets ^{/1}	Saving behaviour	27%	18%	31%	30%
	Population distribution	13%	14%	11%	12%
	Income distribtuion	11%	11%	11%	10%
Excercise based on education ^{/2}	Saving behaviour	23%	19%	26%	28%
	Population distribution	31%	17%	25%	16%
	Income distribtuion	7%	8%	7%	8%
Excercise based on income quintiles ^{/3}	Saving behaviour	-6%	34%	-22%	31%
	Population distribution	9%	8%	11%	10%
	Income distribtuion	14%	8%	12%	8%
Excercise based on place of residence ^{/4}	Saving behaviour	31%		31%	
	Population distribution	14%		14%	
	Income distribtuion	12%		12%	
<i>Characteristic imposed:</i>		Counterfactual change in saving rates			
Excercise based on age brackets ^{/1}	Saving behaviour	16%	7%	20%	19%
	Population distribution	3%	4%	0%	1%
	Income distribtuion	0%	0%	0%	-1%
Excercise based on education ^{/2}	Saving behaviour	12%	8%	15%	17%
	Population distribution	20%	6%	14%	5%
	Income distribtuion	-4%	-3%	-4%	-3%
Excercise based on income quintiles ^{/3}	Saving behaviour	-16%	24%	-32%	21%
	Population distribution	-2%	-3%	0%	-1%
	Income distribtuion	3%	-3%	2%	-3%
Excercise based on place of residence ^{/4}	Saving behaviour	18%		18%	
	Population distribution	1%		1%	
	Income distribtuion	-1%		-1%	

^{/1}. Detailed results in tables A1 and A2. ^{/2}. Detailed results in tables A3 and A4. ^{/3}. Detailed results in tables A5 and A6. ^{/4}. Detailed results in tables A7. The average LAC saving rates for the countries used in this exercise is 13%

Source: own elaboration based on income and consumption household surveys.

Our results so far indicate that differences in saving behavior are the most common explanation for differences in saving rates with the benchmark economies. This difference in saving behavior can be attributed to many things ranging from cultural to institutional differences. In order to have more intuition on what explains these differences we decompose the change in the counterfactual saving rates in smaller components. This decomposition is a simple application of equation (3) where instead of imposing the whole distribution of saving behavior of the benchmark economy we only impose the smaller components we are interested.

Summary results of this decomposition are presented in Table 10 while the details are in the appendix in Tables A9 to A14. We divide the counterfactual based on age bracket on four: less than 35 years old, 35 to 49 years old, 50 to 64 years old and 65 years old and more. The first category captures the first years in the labor markets while the last reflects retirement age. This last category explains a very small fraction of the increase in saving rates due to changes in saving behavior. Note also that the most important category is that of 35 to 49 years old. The two categories below 50 years old explain the vast majority of the differences in the counterfactual saving rates. This suggests that differences in the pension system are not the cause of saving differentials. Whatever is producing the differences in savings reported in the exercises based on age brackets must be related to differences in the active years in the labor market.

The decomposition for differences in saving behavior by education groups suggest the increase in the counterfactual LAC saving rates is due to differences in saving behavior of those more educated (complete secondary and at least some tertiary education). The decomposition for differences by income quintiles for USA shows that the lowest USA quintile saving rates is well below LAC lowest quintile, i.e. imposing

USA saving decreases the national saving rates. On the other hand, the top income quintiles in USA and Korea save more than in LAC, thus, the imposition of their saving behavior increases the national saving rates. About half of the increase in the saving rates produced in the counterfactual based on Korea is due to what happens in the top quintile.

The results for the education decomposition and the income decomposition suggest that the lower saving rates of LAC are produced by lower saving behavior of their more educated and richer individuals. Lower savings might be due to lower income for a given consumption, by higher consumption for a given income or a combination of both. Our results suggests, that in order to increase the saving rate of LAC it is important to increase the saving rates of those at the top of the income and educational distribution. This will most likely be traduced into regressive policies from the point of view of income distribution in a region already characterized by very large income disparities.

Table 10 . Summay of counterfactual excercices (simple country averages). Whose saving behaviour?

<i>Benchmark economy: Microdata based on:</i>		USA Individuals	Korea Individuals	USA Households	Korea Households
Counter factual saving rates					
Excercise based on age brackets ^{/1}	less than 35 years old	4%	1%	4%	6%
	35 to 49 years old	7%	7%	9%	7%
	50 to 64 years old	3%	3%	6%	5%
	65 years old and more	2%	-4%	1%	1%
	Total	16%	7%	20%	19%
Excercise based on education ^{/2}	Incomplete primary	1%	-4%	1%	3%
	Incomplete secondary	3%	3%	5%	7%
	Complete secondary	4%	7%	4%	6%
	University	5%	10%	6%	9%
	Total	12%	10%	15%	19%
Excercise based on income quintiles ^{/3}	1st quintile	-43%	1%	-66%	0%
	2nd quintile	1%	2%	-6%	2%
	3th quintile	3%	3%	-3%	3%
	4th quintile	6%	5%	-1%	5%
	5th quintile	16%	13%	6%	11%
	Total	-16%	24%	-32%	21%

^{/1}. Detailed results in tables A9 and A10. ^{/2}. Detailed results in tables A11 and A12. ^{/3}. Detailed results in tables A13 and A14.

Source: own elaboration based on income and consumption household surveys.

6. Conclusions

In this paper we use microdata on income and consumption from sixteen LAC countries, USA and Korea. We present descriptive statistics showing an inverse U shape saving rates by ages for most countries as predicted by the life cycle model. Although the shape of the saving rates by age is in line with theory the positive sign of the saving rates for older individuals is hard to reconcile without considering precautionary savings and uncertainty in medical expenses (as in Dynan et al 2004) a bequest motive for saving decisions (as in Becker and Tomes 1986) or wealth in the utility function (as in Carroll 2000).

Our estimates suggest a monotonic relation between education and saving decisions. Accepting the not-so-obvious claim that richer people save more, more education is associated with more income and through this channel it transpires into higher savings. A different motive for the association between education and savings can be related to time preferences of individuals. More patient individuals are more likely to engage in education investments and to save since both decisions imply a relatively higher valuation of the future. The relation between education and savings should not be interpreted as causal rather as an empirical regularity.

The descriptive section closes showing a monotonic relationship between current income levels and saving rates. In the text we warn that this relation should be taken with care since income shocks and measurement error that affect the saving rates also affect the classification of individuals in income scale favoring the finding of a positive correlation. Constructing proxies for lifetime income and wealth, Gandelman (2014) reports that for most LAC countries the richer do save more.

The second section of results refers to simulation on saving rates where we alter some characteristic of a LAC country and impose that of a benchmark economy (USA and Korea). The three dimensions tested are differences in saving behavior by groups, differences in population demographic distribution and differences in income distribution. Our results suggest that the main driver of differences in the saving rates between USA or Korea and LAC countries are differences in the saving behavior. To a lesser extent differences in population distribution due to differences in education can explain part of the differences of saving rates with Korea.

The conclusion that saving behavior are the main drivers of differences in national savings with USA and Korea does not illuminate in what are the causes of this differences in saving behavior. There are many potential explanations from institutional differences like the degree of development of the financial sector, the social security system, the macroeconomic stability to intrinsic cultural traits like differences in the social value of work, savings and the intergenerational transmission of wealth.

In order to shed some light on which of the former is more important we decompose the changes due to differences in saving behavior for smaller groups. We find that in groups defined by age, differences in saving behavior at retirement age do not explain the differences in the counterfactual. Quantitatively the most important age bracket to assess differences in saving behavior is from 35 to 49 years old. Given that most of the effect due to differences in saving behavior in age defined groups is before 50 years old we favor the view that differences in saving rates with the benchmark economies are not produced by differences in the pension or social security systems but are likely related to other differences in the labor market (e.g. quality of the jobs, income level, tax system).

In the decomposition by educational level and income level we find that the lower LAC saving rates are to be explained by lower saving behavior or those more educated and those at the top of the income distribution. This presents a political dilemma. Policies promoting the saving rates of the most educated and richest in LAC will likely increase income and social disparities in a region already characterized by large inequalities.

7. References

Aando, A. & Modigliani, F. (1963). The “Life Cycle” Hypothesis of Saving: Aggregate Implications and Tests. *American Economic Review*, v. 53, pp. 55-84.

Attanasio, O. (1999). Consumption. In J. B. Taylor & M. Woodford (eds.), *Handbook of Macroeconomics*, v. 1 (pp. 741-812). Amsterdam: Elsevier.

Alan, S.; Atalay, K. & Crossley, T. F. (2006). Do the Rich Save More in Canada?, *QSEP Research Report No. 406*. Ontario, Canada: McMaster University.

Alegre Martin, J. & Pou Garcias, L. (2008). El consumo y la tasa de ahorro privados de los hogares españoles: Una descomposición de los efectos edad y cohorte. *Investigaciones Económicas*, v. 32 (1), pp. 87-121.

Becker, G. & Tomes, N. (1986). Human Capital and the Rise and Fall of Families. *Journal of Labor Economics*, v. 4 (3, part 2), pp. s1-s39.

Browning, M. & Lussardi, A. (1996). Household Saving: Micro Theories and Micro Facts. *Journal of Economic Literature*, v. 34 (4), pp. 1797-1855.

Butelmann, A. & Gallego, F. (2001). Household Saving in Chile (1988 and 1997): Testing the Life Cycle Hypothesis. *Cuadernos de Economía*, v. 38 (113), pp. 3-48.

Castañeda Cordy, A. (2001). El Ahorro de los Hogares Colombianos: Un Análisis a partir de las Encuestas de Ingresos y Gastos. Unpublished mimeo.

Carroll, C. D. (2000). Why do the Rich Save So Much? In J. Slemrod (ed.), *Does Atlas Shrug? The Economic Consequences of Taxing the Rich* (pp. 465-484). Cambridge: Harvard University Press.

Demery, D. & Duck, N.W. (2006). Savings-Age Profiles in the UK. *Journal of Population Economics*, v. 19 (3), pp. 521-41.

Deaton, A. (1992). Understanding consumption. Oxford: Oxford University Press.

Dynan, K.; Skinner, J. & Zeldes, S. (2004). Do the Rich Save More. *Journal of Political Economy*, v. 112 (2), pp. 397-444.

Friedman M. (1957). A Theory of the Consumption Function. Princeton: Princeton University Press.

Gandelman, N. (2014). Do the Rich save more in Latin America. Unpublished mimeo.

Kirsanova, T. & Sefton, J. (2007). A Comparison of National Saving Rates in the UK, USA and Italy. *European Economic Review*, v. 51 (8), pp. 1998-2028.

Modigliani, F. & Brumberg, R. (1954). Utility Analysis and the Consumption Function: An Interpretation of the Cross-Section Data In K. Kurihara (ed.), *Post-Keynesian Economics* (pp. 388-436). New Jersey: Rutgers University Press.

Poterba, J.M. (1994). Introduction. In J.M. Poterba (ed.), *International Comparisons of Household Saving* (pp. 1-10). Massachusetts; Chicago: NBER; University of Chicago Press.

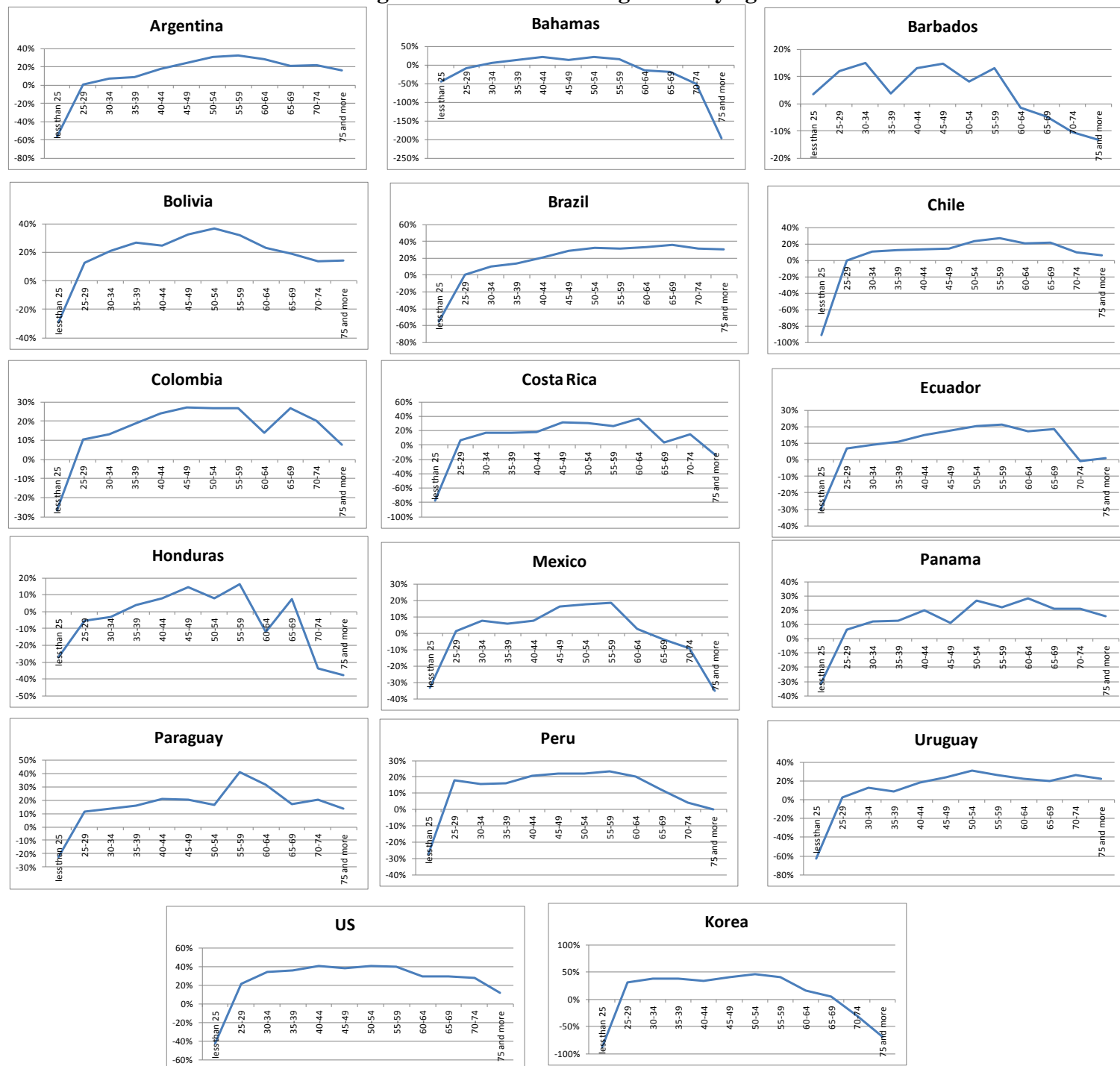
Table A1. Data

	Years	Observations (total)	Observations (adults)	Observations (households)	Survey	Source
Argentina	2004-2005	104.858	68.290	29.138	Encuesta Nacional de Gastos de los Hogares	Instituto Nacional de Estadística y Censos
Bolivia	2003-2004	38.500	21.257	9.149	Encuesta Continua de los Hogares	Instituto Nacional de Estadística
Chile	2011-2012	35.651	26.033	10.518	VII Encuesta de Presupuestos Familiares	Instituto Nacional de Estadísticas
Ecuador	2004	153.444	94.534	39.617	Encuesta Nacional de Ingresos y Gastos de los Hogares Urbanos	Instituto Nacional de Estadística y Censos
Mexico	2005	83.444	51.377	20.875	Encuesta Nacional de Ingresos y Gastos de los Hogares	Instituto Nacional de Estadística y Geografía
Nicaragua	2006-2007			6.912	Encuesta Ingresos y Gastos de los Hogares	Banco Central de Nicaragua
Panama	2007-2008	32.614	21.528	8.895	Encuesta de Ingresos y Gastos de los Hogares	Instituto Nacional de Estadística y Censo
Peru	2008-2009	143.885	108.724	35.161	Encuesta Nacional de Presupuestos Familiares	Instituto Nacional de Estadística e Informática
Korea	2011			14.853	Survey of Family Income and Expenditure	Directorate-General of Budget, Accounting & Statistics
USA	2012	20.772	14.916	7.043	Consumer Expenditure Survey	Bureau of Labor Statistics
Uruguay	2005-2006	16.845	12.593	6.751	Encuesta Nacional de Gastos e Ingresos de los Hogares	Instituto Nacional de Estadística

Note: The Bolivian survey is part of the continuous household surveys that introduced a module in 2003-2004 to capture detailed data on income and expenses. The survey of Nicaragua report income and consumption information only at the household level.

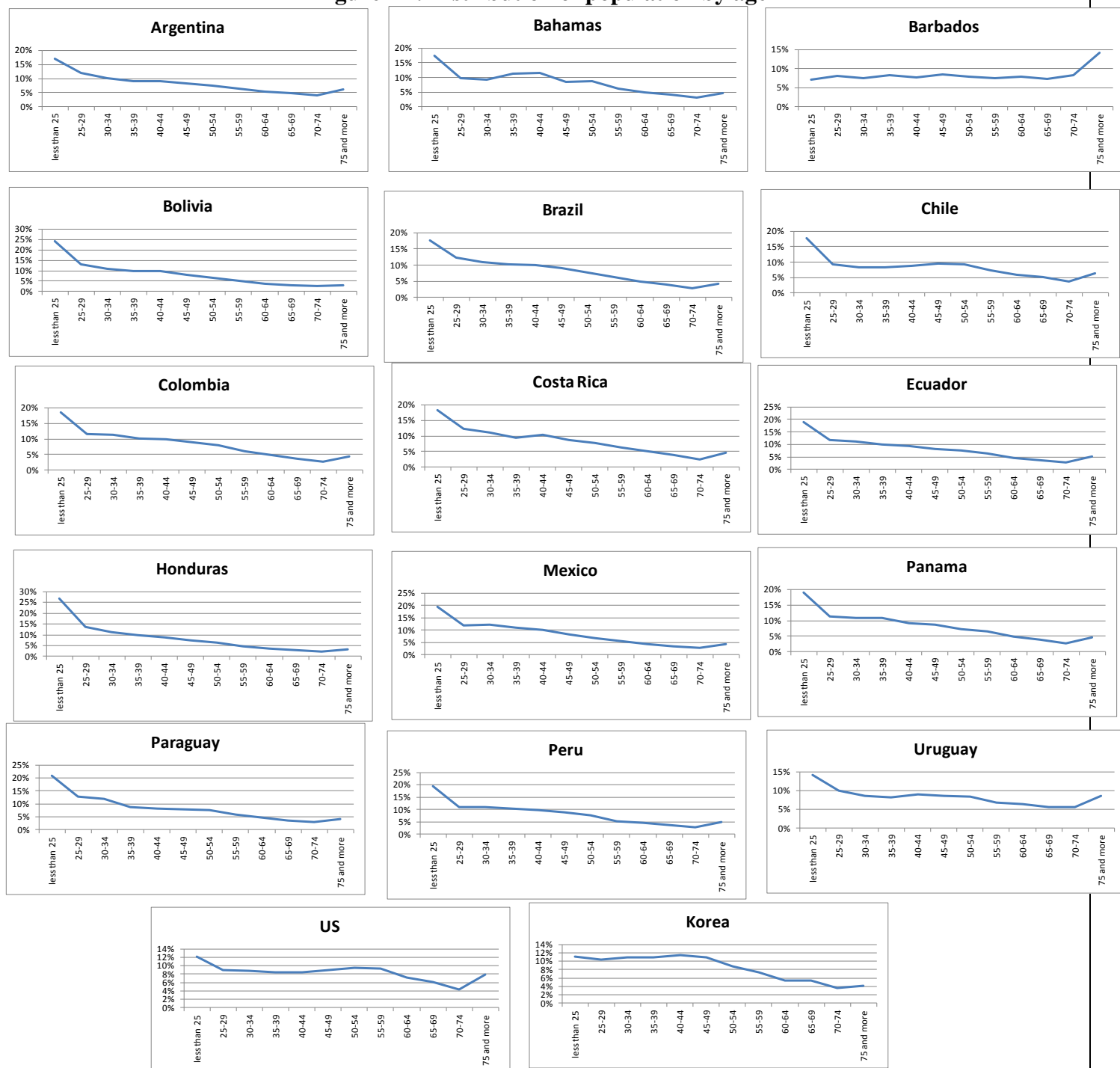
Source: own elaboration based on income and consumption household surveys.

Figure A1. Personal savings rates by age



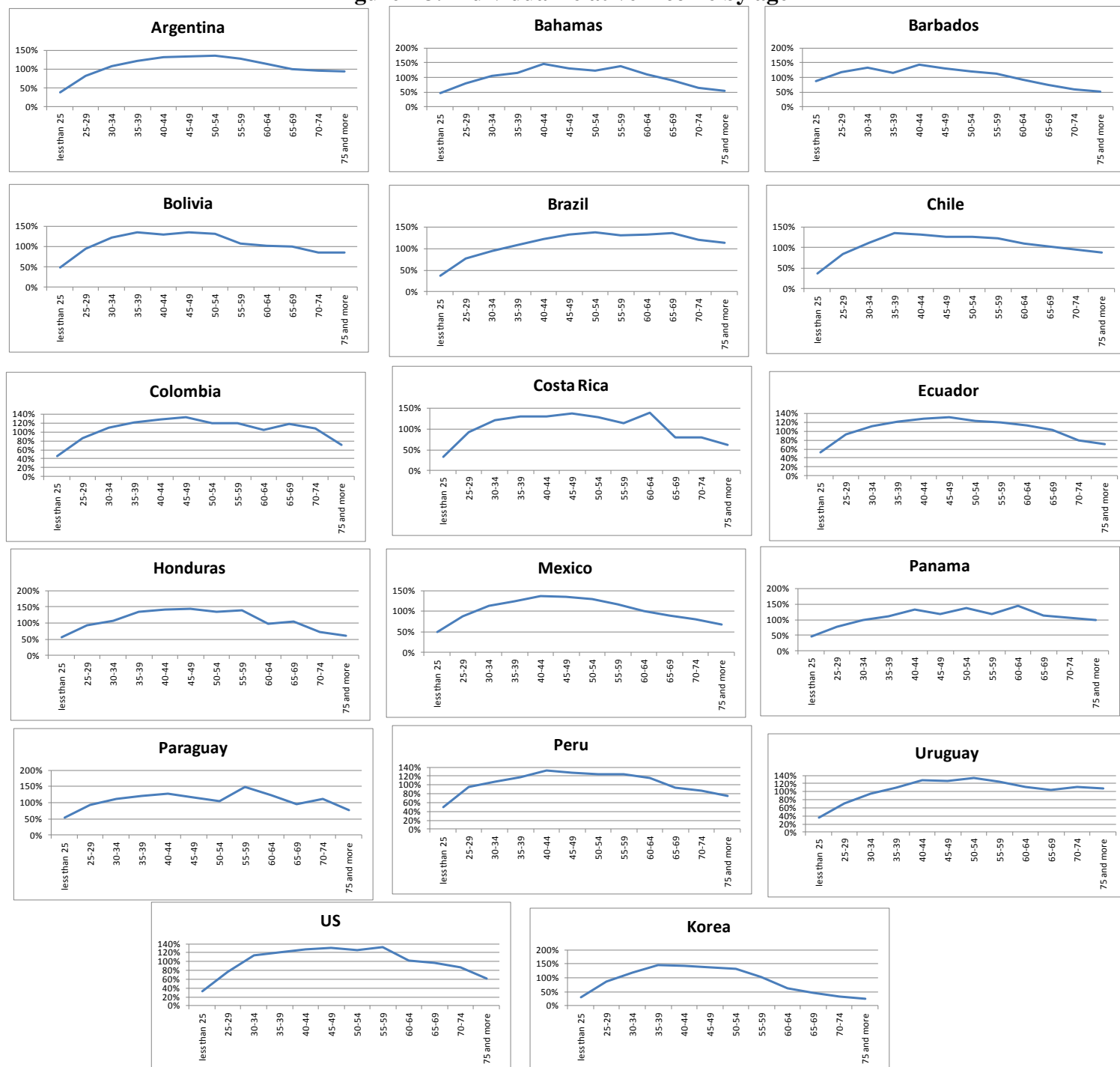
Source: own elaboration based on income and consumption household surveys.

Figure A2. Distribution of population by age



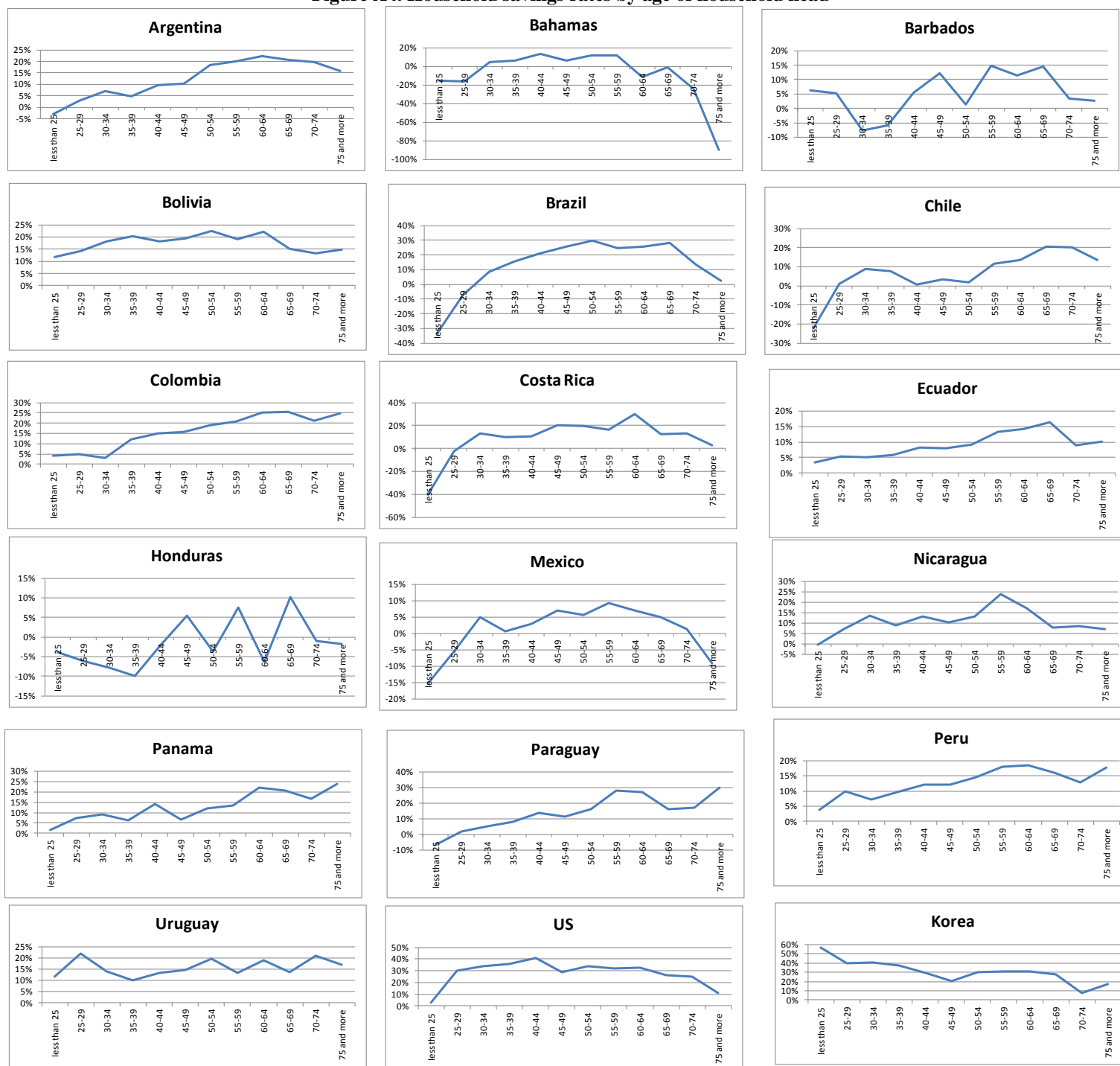
Source: own elaboration based on income and consumption household surveys.

Figure A3. Individual relative income by age



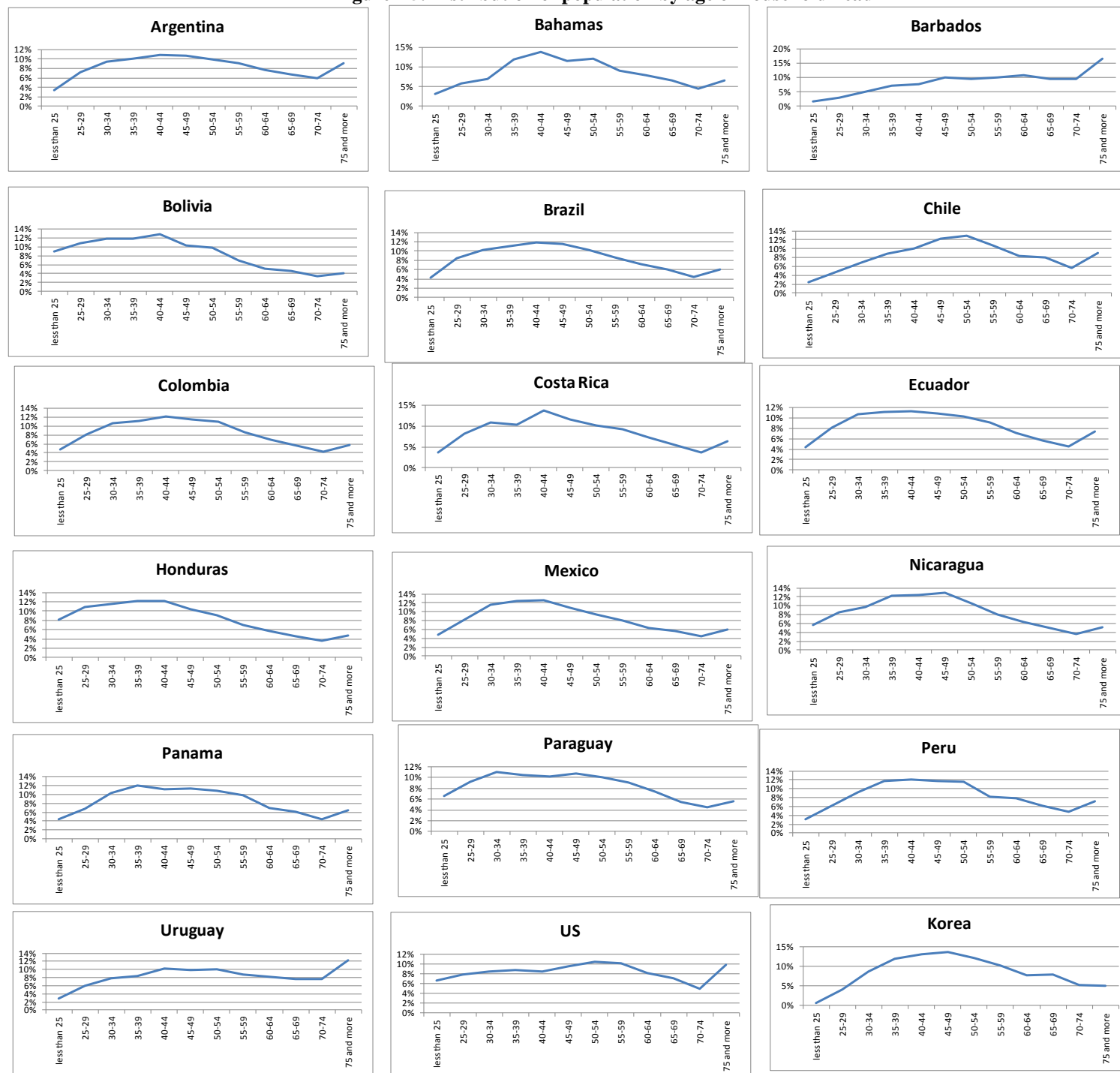
Source: own elaboration based on income and consumption household surveys.

Figure A4. Household savings rates by age of household head



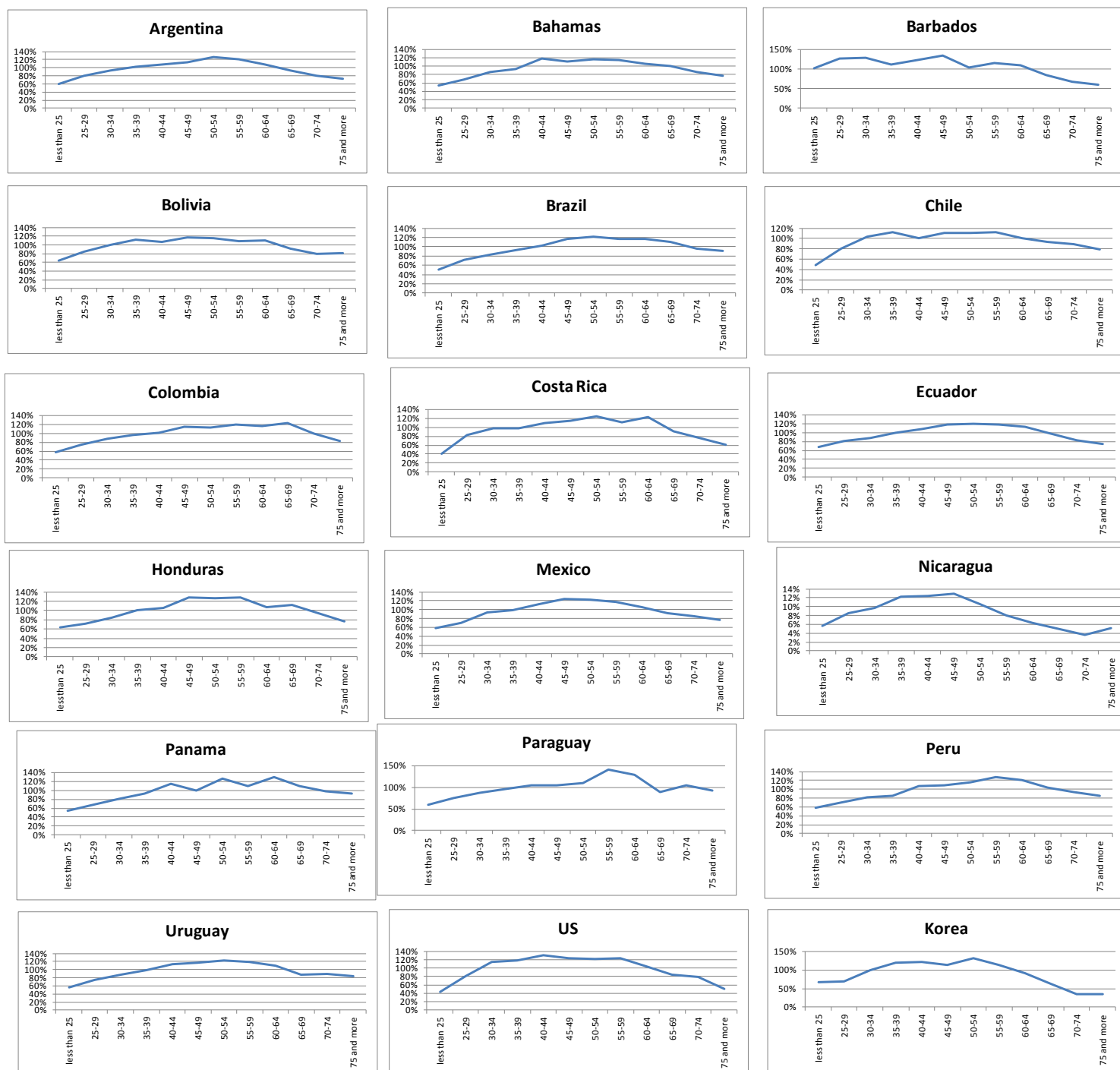
Source: own elaboration based on income and consumption household surveys.

Figure A5. Distribution of population by age of household head



Source: own elaboration based on income and consumption household surveys

Figure A6 Household relative income by age of household head



Source: own elaboration based on income and consumption household surveys

Table A1. Data						
	Years	Observations (total)	Observations (adults)	Observations (households)	Survey	Source
Argentina	2004-2005	104.858	68.290	29.138	Encuesta Nacional de Gastos de los Hogares	Instituto Nacional de Estadística y Censos
Bahamas	2013	5.078	3.320	1.544	Bahamas Household Expenditure Survey	Department of Statistics, Ministry of Finance
Barbados	2010	6.937	1.577	1.141	Country Assessment of Living Conditions	Sir Arthur Lewis Institute of Social and Economic Studies, University of the West Indies
Bolivia	2003-2004	38.500	21.257	9.149	Encuesta Continua de los Hogares	Instituto Nacional de Estadística
Brazil	2008-2009	132.323	117.509	55.702	Pesquisa de Orçamentos Familiares	Instituto Brasileiro de Geografia e Estatística
Chile	2011-2012	35.651	26.033	10.518	VII Encuesta de Presupuestos Familiares	Instituto Nacional de Estadísticas
Colombia	2011	92.188	58.934	25.364	Encuesta Nacional de Calidad de Vida	Departamento Administrativo Nacional de Estadística
Costa Rica	2013	19.301	13.059	5.705	Encuescuesta Nacional de Ingresos y Gastos de los Hogares	Instituto Nacional de Estadística y Censos
Ecuador	2004	153.444	94.534	39.617	Encuesta Nacional de Ingresos y Gastos de los Hogares Urbanos	Instituto Nacional de Estadística y Censos
Honduras	2004	39.126	19.879	8.175	Encuesta Nacional de Condiciones de Vida	Instituto Nacional de Estadística
Korea	2005	11.435	10.410	4.763	Korea Labor and Income Panel Study	Korea Labor Institute
Mexico	2005	83.444	49.942	20.875	Encuesta Nacional de Ingresos y Gastos de los Hogares	Instituto Nacional de Estadística y Geografía
Nicaragua	2006-2007			6.912	Encuesta Ingresos y Gastos de los Hogares	Banco Central de Nicaragua
Panama	2007-2008	32.614	21.528	8.895	Encuesta de Ingresos y Gastos de los Hogares	Instituto Nacional de Estadística y Censo
Paraguay	2011-2012	21.130	13.114	5.417	Encuesta de Ingresos y Gastos y de Condiciones de Vida	Dirección General de Estadísticas, Encuestas y Censos
Peru	2008-2009	143.885	92.888	35.161	Encuesta Nacional de Presupuestos Familiares	Instituto Nacional de Estadística e Informática
Uruguay	2005-2006	20.772	14.916	7.043	Encuesta Nacional de Gastos e Ingresos de los Hogares	Instituto Nacional de Estadística
USA	2012	16.845	12.593	6.751	Consumer Expenditure Survey	Bureau of Labor Statistics

Note: The Bolivian survey is part of the continuous household surveys that introduced a module in 2003-2004 to capture detailed data on income and expenses. The surveys of Nicaragua and Taiwan report income and consumption information only at the household level. Source: own elaboration based on income and consumption household surveys.

Table A2. Counterfactual saving rates using age brackets															
Exercises based on microdata at the individual level															
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Uruguay
<i>Savings rate</i>	13%	-1%	6%	18%	17%	8%	16%	14%	9%	-2%	3%	13%	15%	14%	16%
Characteristics imposed:	Counterfactual saving rates														
US-saving behaviour	28%	29%	28%	25%	28%	29%	27%	29%	26%	23%	27%	27%	25%	26%	29%
US-population distribution	17%	-5%	8%	23%	23%	11%	19%	17%	12%	1%	4%	17%	20%	16%	17%
US-income distribtuion	13%	-1%	5%	19%	16%	8%	17%	13%	10%	-1%	4%	13%	15%	14%	15%
Korean-savings behaviour	18%	21%	16%	17%	19%	19%	19%	23%	17%	14%	19%	17%	15%	17%	14%
Korean-population distribution	17%	1%	10%	25%	22%	11%	20%	18%	12%	2%	6%	16%	19%	17%	17%
Korean-income distribtuion	11%	5%	7%	19%	14%	7%	16%	13%	10%	0%	5%	12%	14%	15%	13%
Variation of counterfactual saving rates with respect to each country savings rate															
US-saving behaviour	15%	29%	22%	7%	11%	21%	11%	15%	17%	24%	24%	14%	10%	13%	13%
US-population distribution	4%	-4%	2%	5%	6%	3%	2%	3%	3%	2%	1%	4%	5%	2%	1%
US-income distribtuion	0%	0%	-1%	0%	-1%	0%	1%	-1%	1%	1%	1%	0%	0%	1%	-1%
Korean-savings behaviour	5%	22%	9%	-2%	2%	11%	3%	9%	8%	16%	16%	4%	0%	4%	-2%
Korean-population distribution	4%	2%	4%	6%	5%	3%	3%	4%	3%	4%	3%	3%	4%	3%	1%
Korean-income distribtuion	-2%	5%	0%	1%	-3%	-1%	0%	-1%	1%	2%	2%	-1%	-1%	1%	-3%

Source: own elaboration based on income and consumption household surveys.

Table A3. Counterfactual saving rates using age brackets
Exercises based on microdata at the household level

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
<i>Savings rate</i>	13%	-1%	6%	18%	17%	8%	16%	14%	9%	-2%	3%	12%	13%	15%	13%	16%
<i>Characteristics imposed:</i>	<i>Counterfactual saving rates</i>															
US-saving behaviour	31%	32%	30%	31%	31%	31%	31%	32%	31%	31%	31%	31%	31%	30%	31%	30%
US-population distribution	13%	-5%	6%	18%	18%	7%	17%	13%	9%	-1%	3%	12%	13%	17%	13%	15%
US-income distribtuion	13%	2%	6%	19%	17%	8%	16%	14%	9%	-3%	3%	13%	12%	14%	14%	16%
Korean-savings behaviour	30%	29%	28%	32%	30%	29%	30%	30%	30%	31%	30%	30%	30%	31%	29%	28%
Korean-population distribution	14%	1%	6%	20%	19%	8%	18%	16%	10%	-1%	4%	14%	14%	17%	14%	16%
Korean-income distribtuion	12%	3%	5%	18%	15%	6%	15%	13%	8%	-3%	3%	12%	11%	13%	12%	14%
<i>Variation of counterfactual saving rates with respect to each country savings rate</i>																
US-saving behaviour	18%	32%	23%	13%	14%	23%	15%	18%	22%	33%	28%	19%	18%	15%	18%	14%
US-population distribution	0%	-4%	-1%	0%	1%	-1%	1%	-1%	0%	1%	0%	0%	1%	2%	0%	0%
US-income distribtuion	0%	2%	0%	1%	0%	0%	0%	1%	0%	-1%	0%	1%	0%	-1%	0%	0%
Korean-savings behaviour	17%	30%	22%	14%	12%	21%	14%	17%	21%	33%	27%	18%	17%	16%	16%	12%
Korean-population distribution	1%	2%	-1%	2%	2%	0%	2%	2%	1%	1%	1%	1%	1%	2%	1%	0%
Korean-income distribtuion	-2%	4%	-1%	0%	-2%	-2%	-2%	-1%	-1%	-1%	0%	0%	-2%	-2%	-1%	-2%

Source: own elaboration based on income and consumption household surveys.

Table A4. Counterfactual saving rates using educational levels

Exercises based on microdata at the individual level

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Uruguay
<i>Savings rate</i>	14%	0%	7%	18%	17%	8%	16%	14%	9%	-2%	3%	13%	16%	14%	16%
<i>Characteristics imposed:</i>	<i>Counterfactual saving rates</i>														
US-saving behaviour	24%	27%	25%	20%	20%	28%	22%	25%	23%	19%	22%	27%	22%	25%	20%
US-population distribution	19%	4%	14%	28%	59%	14%	38%	48%	24%	77%	23%	23%	41%	24%	31%
US-income distribuion	10%	0%	5%	11%	9%	6%	10%	6%	6%	-5%	1%	9%	10%	10%	10%
Korean-savings behaviour	26%	30%	26%	6%	8%	30%	12%	24%	18%	5%	17%	28%	15%	20%	15%
Korean-population distribution	15%	-1%	9%	23%	29%	7%	21%	20%	12%	35%	8%	13%	26%	15%	22%
Korean-income distribuion	12%	1%	7%	12%	9%	7%	11%	8%	7%	-2%	2%	12%	13%	13%	11%
<i>Variation of counterfactual saving rates with respect to each country savings rate</i>															
US-saving behaviour	10%	26%	18%	1%	2%	20%	6%	11%	14%	21%	19%	14%	6%	11%	4%
US-population distribution	5%	3%	7%	10%	42%	6%	22%	34%	15%	79%	20%	11%	25%	10%	15%
US-income distribuion	-4%	-1%	-2%	-7%	-9%	-2%	-6%	-8%	-3%	-3%	-2%	-4%	-5%	-3%	-6%
Korean-savings behaviour	12%	29%	19%	-12%	-9%	22%	-4%	10%	9%	7%	14%	15%	-1%	6%	-1%
Korean-population distribution	1%	-1%	2%	5%	12%	-1%	5%	7%	3%	37%	5%	0%	10%	1%	6%
Korean-income distribuion	-2%	1%	0%	-6%	-8%	-1%	-5%	-6%	-2%	-1%	-1%	-1%	-3%	-1%	-5%

Source: own elaboration based on income and consumption household surveys.

Table A5. Counterfactual saving rates using educational levels

Exercises based on microdata at the household level

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
<i>Savings rate</i>	13%	1%	8%	18%	17%	8%	16%	14%	9%	-2%	3%	13%	13%	15%	13%	16%
<i>Characteristics imposed:</i>	<i>Counterfactual saving rates</i>															
US-saving behaviour	27%	27%	27%	24%	24%	29%	25%	28%	26%	23%	26%	29%	29%	25%	26%	26%
US-population distribution	17%	0%	10%	24%	56%	11%	32%	43%	20%	48%	15%	25%	21%	37%	20%	28%
US-income distribtuion	10%	1%	6%	12%	9%	6%	10%	7%	6%	-4%	1%	9%	10%	10%	10%	11%
Korean-savings behaviour	28%	29%	28%	26%	26%	31%	27%	29%	27%	25%	27%	31%	30%	27%	28%	27%
Korean-population distribution	15%	1%	9%	20%	36%	8%	18%	22%	12%	20%	6%	13%	13%	23%	14%	22%
Korean-income distribtuion	11%	2%	8%	12%	10%	8%	10%	9%	7%	-2%	2%	12%	12%	12%	11%	12%
<i>Variation of counterfactual saving rates with respect to each country savings rate</i>																
US-saving behaviour	14%	26%	19%	6%	7%	21%	9%	14%	17%	25%	23%	17%	16%	10%	13%	10%
US-population distribution	4%	-1%	2%	5%	39%	3%	16%	29%	11%	50%	12%	12%	8%	22%	7%	12%
US-income distribtuion	-4%	-1%	-2%	-6%	-8%	-2%	-6%	-6%	-3%	-2%	-2%	-3%	-3%	-5%	-4%	-5%
Korean-savings behaviour	15%	27%	20%	8%	9%	23%	11%	15%	18%	27%	24%	18%	17%	11%	15%	11%
Korean-population distribution	1%	0%	0%	2%	19%	0%	2%	8%	3%	22%	3%	0%	0%	7%	0%	6%
Korean-income distribtuion	-2%	0%	-1%	-6%	-7%	0%	-6%	-4%	-2%	0%	-1%	-1%	-1%	-4%	-2%	-4%

Source: own elaboration based on income and consumption household surveys.

Table A6. Counterfactual saving rates using income brackets (quintiles)

Exercises based on microdata at the individual level

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Uruguay
<i>Savings rate</i>	13%	-1%	6%	18%	17%	8%	16%	14%	9%	-2%	3%	13%	15%	13%	16%
<i>Characteristics imposed:</i>	<i>Counterfactual saving rates</i>														
USA-saving behaviour	-7%	1%	15%	-7%	7%	-17%	5%	-2%	-30%	15%	-14%	-18%	-2%	-21%	-9%
USA-population distribution	12%	-4%	-2%	17%	16%	8%	14%	13%	8%	-4%	3%	12%	12%	12%	15%
USA-income distribuion	16%	7%	19%	22%	18%	9%	19%	14%	11%	-2%	4%	15%	19%	16%	18%
Korean-savings behaviour	34%	34%	36%	33%	36%	34%	36%	36%	32%	37%	34%	33%	35%	32%	34%
Korean-population distribution	11%	-4%	-3%	16%	14%	7%	13%	11%	7%	-6%	2%	11%	10%	12%	14%
Korean-income distribuion	12%	-3%	2%	19%	13%	6%	12%	8%	9%	-15%	3%	13%	10%	14%	16%
<i>Variation of counterfactual saving rates with respect to each country savings rate</i>															
USA-saving behaviour	-20%	2%	9%	-26%	-11%	-25%	-11%	-16%	-39%	17%	-17%	-31%	-17%	-34%	-25%
USA-population distribution	-1%	-3%	-9%	-1%	-1%	0%	-2%	-1%	-1%	-2%	-1%	-1%	-3%	-1%	-1%
USA-income distribuion	3%	7%	13%	3%	1%	1%	3%	0%	2%	0%	1%	2%	4%	3%	2%
Korean-savings behaviour	21%	34%	29%	15%	19%	26%	20%	22%	23%	39%	31%	21%	20%	19%	18%
Korean-population distribution	-3%	-4%	-9%	-2%	-3%	-1%	-3%	-2%	-2%	-4%	-1%	-2%	-5%	-2%	-2%
Korean-income distribuion	-1%	-2%	-5%	1%	-4%	-2%	-4%	-6%	0%	-13%	0%	0%	-5%	1%	0%

Source: own elaboration based on income and consumption household surveys.

Table A7. Counterfactual saving rates using income brackets (quintiles)

Exercises based on microdata at the household level

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
<i>Savings rate</i>	13%	-1%	6%	18%	17%	8%	16%	14%	9%	-2%	3%	12%	13%	15%	13%	16%
<i>Characteristics imposed:</i>	<i>Counterfactual saving rates</i>															
US-saving behaviour	-37%	-7%	14%	-2%	-12%	-37%	-6%	-18%	-56%	8%	-38%	-43%	-47%	4%	-31%	-42%
US-population distribution	13%	-1%	7%	18%	17%	8%	16%	14%	9%	-2%	3%	12%	13%	15%	13%	16%
US-income distribtuion	16%	7%	10%	19%	18%	10%	19%	14%	11%	-3%	4%	13%	14%	14%	15%	17%
Korean-savings behaviour	29%	31%	35%	34%	33%	30%	34%	33%	27%	36%	30%	30%	29%	35%	30%	29%
Korean-population distribution	13%	-1%	5%	18%	17%	8%	15%	13%	9%	-2%	3%	12%	12%	14%	13%	15%
Korean-income distribtuion	13%	-1%	-5%	17%	14%	7%	14%	9%	9%	-13%	3%	11%	13%	6%	14%	16%
<i>Variation of counterfactual saving rates with respect to each country savings rate</i>																
US-saving behaviour	-51%	-6%	8%	-20%	-29%	-45%	-22%	-32%	-65%	10%	-41%	-55%	-60%	-11%	-44%	-58%
US-population distribution	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
US-income distribtuion	3%	8%	4%	1%	1%	2%	3%	0%	2%	-1%	1%	1%	1%	-1%	2%	1%
Korean-savings behaviour	16%	31%	29%	16%	16%	22%	18%	19%	18%	37%	27%	18%	16%	20%	16%	13%
Korean-population distribution	-1%	-1%	-1%	-1%	-1%	0%	-1%	-1%	0%	-1%	0%	0%	0%	-1%	0%	0%
Korean-income distribtuion	0%	0%	-11%	-2%	-3%	-1%	-2%	-5%	0%	-11%	0%	-1%	0%	-9%	0%	0%

Source: own elaboration based on income and consumption household surveys.

Table A8. Counterfactual saving rates using area of residence										
	Argentina	Bolivia	Brazil	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Paraguay	Peru
<i>Savings rate</i>	13%	34%	17%	16%	14%	9%	-2%	3%	15%	13%
<i>Characteristics imposed:</i>	<i>Counterfactual saving rates</i>									
Saving rates	31%	31%	31%	31%	32%	31%	31%	31%	31%	31%
Population distribution	13%	41%	18%	16%	-1%	11%	4%	4%	20%	15%
Income distribtuion	13%	32%	16%	16%	9%	8%	-4%	2%	13%	13%
	<i>Variation of counterfactual saving rates with respect to each country savings rate</i>									
Saving rates	18%	-3%	14%	15%	18%	22%	33%	28%	16%	18%
Population distribution	0%	7%	1%	0%	-15%	2%	6%	1%	5%	1%
Income distribtuion	0%	-2%	-1%	0%	-5%	-1%	-3%	-1%	-2%	0%

Source: own elaboration based on income and consumption household surveys.

Table A9. Age-decomposition of the change in the national saving rate due to differences in saving behaviour

Exercises based on microdata at the individual level

Change in savings rate due to imposing US saving behaviour:

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Uruguay
	15%	29%	22%	7%	11%	21%	11%	15%	17%	24%	24%	14%	10%	13%	13%

Decomposition by age bracket:

less than 35 years old	6%	5%	0%	1%	5%	7%	2%	6%	3%	6%	5%	3%	2%	1%	4%
35 to 49 years old	7%	9%	9%	4%	6%	9%	5%	6%	8%	11%	11%	8%	6%	7%	6%
50 to 64 years old	2%	7%	8%	1%	1%	4%	3%	1%	4%	6%	4%	3%	2%	3%	3%
65 years old and more	0%	9%	6%	1%	-1%	1%	0%	2%	1%	3%	3%	0%	1%	2%	0%

Change in savings rate due to imposing Korean saving behaviour:

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Uruguay
	5%	22%	9%	-2%	2%	11%	3%	9%	8%	16%	16%	4%	0%	4%	-2%

Decomposition by age bracket:

less than 35 years old	4%	2%	-2%	-2%	3%	5%	0%	5%	0%	0%	2%	0%	-2%	-2%	3%
35 to 49 years old	7%	8%	8%	3%	6%	8%	5%	6%	8%	10%	11%	8%	6%	6%	6%
50 to 64 years old	1%	7%	7%	1%	1%	4%	3%	1%	4%	6%	4%	3%	1%	3%	2%
65 years old and more	-8%	4%	-4%	-4%	-8%	-6%	-5%	-2%	-4%	-1%	-1%	-6%	-5%	-4%	-13%

Source: own elaboration based on income and consumption household surveys.

Table A10. Age-decomposition of the change in the national saving rate due to differences in saving behaviour

Exercises based on microdata at the household level

<i>Change in savings rate due to imposing US saving behaviour:</i>																
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
	18%	32%	23%	13%	14%	23%	15%	18%	22%	33%	28%	19%	18%	15%	18%	14%
<i>Decomposition by age bracket:</i>																
less than 35 years old	4%	4%	4%	3%	4%	3%	4%	5%	4%	7%	6%	3%	3%	5%	3%	2%
35 to 49 years old	9%	11%	9%	6%	7%	10%	7%	8%	10%	14%	13%	9%	9%	8%	8%	7%
50 to 64 years old	4%	9%	8%	3%	4%	9%	4%	4%	7%	9%	7%	5%	6%	3%	5%	5%
65 years old and more	0%	9%	3%	1%	-1%	1%	0%	1%	1%	2%	3%	2%	0%	0%	1%	1%
<i>Change in savings rate due to imposing Korean saving behaviour:</i>																
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
	17%	30%	22%	14%	12%	21%	14%	17%	21%	33%	27%	18%	17%	16%	16%	12%
<i>Decomposition by age bracket:</i>																
less than 35 years old	6%	5%	5%	7%	6%	5%	7%	7%	7%	11%	8%	6%	5%	8%	5%	3%
35 to 49 years old	7%	8%	7%	4%	5%	8%	5%	6%	8%	12%	10%	7%	7%	6%	6%	5%
50 to 64 years old	3%	8%	7%	2%	3%	8%	3%	3%	6%	8%	6%	4%	5%	2%	5%	4%
65 years old and more	0%	9%	3%	0%	-1%	0%	-1%	1%	1%	2%	3%	1%	0%	-1%	0%	0%

Source: own elaboration based on income and consumption household surveys.

Table A11. Education-decomposition of the change in the national saving rate due to differences in saving behaviour

Exercises based on microdata at the individual level

	<i>Change in savings rate due to imposing USA saving behaviour:</i>														
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Uruguay
	10%	26%	18%	1%	2%	20%	6%	11%	14%	21%	19%	14%	6%	11%	4%
	<i>Decomposition by education level:</i>														
Incomplete primary	0%	1%	0%	-2%	-1%	0%	-2%	2%	1%	8%	3%	0%	1%	1%	0%
Incomplete secondary	0%	5%	4%	-2%	2%	2%	1%	6%	3%	9%	6%	3%	3%	1%	-1%
Complete secondary	3%	10%	8%	2%	1%	6%	3%	3%	5%	3%	4%	4%	1%	4%	2%
University	7%	11%	6%	5%	0%	12%	4%	0%	5%	1%	6%	7%	1%	6%	4%
	<i>Change in savings rate due to imposing Korean saving behaviour:</i>														
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Uruguay
	12%	29%	19%	-12%	-9%	22%	12%	24%	9%	7%	14%	15%	-1%	6%	-1%
	<i>Decomposition by education level:</i>														
Incomplete primary	0%	1%	-1%	-17%	-13%	-2%	2%	12%	-5%	-6%	-4%	-1%	-7%	-8%	-6%
Incomplete secondary	-2%	4%	3%	-4%	0%	1%	16%	18%	2%	8%	4%	1%	1%	0%	-3%
Complete secondary	3%	11%	10%	2%	1%	7%	20%	17%	5%	3%	5%	5%	1%	5%	2%
University	10%	13%	8%	7%	3%	16%	23%	17%	8%	2%	9%	10%	4%	9%	6%

Source: own elaboration based on income and consumption household surveys.

Table A12. Education-decomposition of the change in the national saving rate due to differences in saving behaviour

Exercises based on microdata at the household level

<i>Change in savings rate due to imposing US saving behaviour:</i>																
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
	14%	26%	19%	6%	7%	21%	9%	14%	17%	25%	23%	17%	16%	10%	13%	10%
<i>Decomposition by education level:</i>																
Incomplete primary	0%	1%	0%	-3%	1%	0%	-3%	2%	1%	9%	3%	0%	0%	1%	0%	0%
Incomplete secondary	4%	6%	4%	1%	4%	3%	3%	8%	7%	10%	9%	5%	4%	5%	2%	5%
Complete secondary	3%	8%	10%	2%	0%	5%	4%	2%	3%	3%	3%	5%	3%	2%	3%	2%
University	7%	11%	6%	6%	2%	13%	5%	2%	6%	3%	8%	6%	8%	2%	7%	4%
<i>Change in savings rate due to imposing Korean saving behaviour:</i>																
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
	15%	27%	20%	8%	9%	23%	27%	29%	18%	27%	24%	18%	17%	11%	15%	11%
<i>Decomposition by education level:</i>																
Incomplete primary	0%	1%	0%	-2%	2%	0%	14%	16%	2%	10%	3%	0%	0%	2%	1%	0%
Incomplete secondary	4%	6%	3%	1%	4%	3%	19%	21%	6%	9%	9%	5%	4%	5%	2%	4%
Complete secondary	3%	8%	11%	2%	0%	6%	20%	16%	4%	3%	3%	6%	4%	2%	4%	2%
University	8%	12%	6%	6%	3%	14%	22%	17%	7%	4%	9%	7%	9%	2%	8%	5%

Source: own elaboration based on income and consumption household surveys.

Table A13. Income-decomposition of the change in the national saving rate due to differences in saving behaviour															
Exercises based on microdata at the individual level															
<i>Change in savings rate due to imposing USA saving behaviour:</i>															
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Uruguay
	-20%	2%	9%	-26%	-11%	-25%	-11%	-16%	-39%	17%	-17%	-31%	-17%	-34%	-25%
<i>Decomposition by income bracket:</i>															
1st quintile	-45%	-31%	-16%	-45%	-33%	-54%	-32%	-40%	-67%	-23%	-52%	-57%	-38%	-57%	-47%
2nd quintile	1%	4%	3%	-1%	0%	0%	0%	1%	0%	4%	0%	-1%	2%	-1%	-1%
3th quintile	3%	5%	3%	2%	3%	3%	2%	4%	4%	7%	4%	3%	5%	3%	2%
4th quintile	6%	8%	6%	4%	5%	6%	5%	7%	7%	10%	7%	5%	7%	6%	6%
5th quintile	14%	16%	13%	14%	14%	19%	14%	13%	18%	19%	24%	18%	7%	16%	16%
<i>Change in savings rate due to imposing Korean saving behaviour:</i>															
	21%	34%	29%	15%	19%	26%	20%	22%	23%	39%	31%	21%	20%	19%	18%
<i>Decomposition by income bracket:</i>															
1st quintile	-1%	4%	8%	-1%	0%	-1%	2%	0%	-2%	4%	-1%	-2%	2%	-2%	-2%
2nd quintile	2%	5%	4%	0%	1%	1%	1%	2%	1%	5%	1%	0%	3%	1%	0%
3th quintile	3%	5%	3%	1%	2%	3%	2%	4%	3%	6%	3%	2%	4%	2%	2%
4th quintile	5%	6%	4%	3%	4%	5%	4%	6%	6%	9%	6%	4%	6%	5%	4%
5th quintile	12%	14%	10%	12%	11%	17%	11%	9%	15%	16%	22%	15%	5%	13%	13%

Source: own elaboration based on income and consumption household surveys.

Table A14. Income-decomposition of the change in the national saving rate due to differences in saving behaviour

Exercises based on microdata at the individual level and counterfactuals using age brackets

	<i>Change in savings rate due to imposing US saving behaviour:</i>															
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
	-51%	-6%	8%	-20%	-29%	-45%	-22%	-32%	-65%	10%	-41%	-55%	-60%	-11%	-44%	-58%
	<i>Decomposition by income bracket:</i>															
1st quintile	-73%	-38%	-158%	-41%	-51%	-73%	-42%	-56%	-91%	-29%	-74%	-59%	-84%	-35%	-67%	-79%
2nd quintile	1%	5%	-137%	0%	1%	1%	0%	2%	0%	5%	1%	22%	0%	3%	0%	-1%
3th quintile	4%	7%	-135%	3%	3%	4%	3%	5%	5%	8%	5%	26%	3%	6%	3%	3%
4th quintile	7%	8%	-136%	5%	5%	7%	5%	7%	7%	10%	8%	28%	6%	7%	6%	6%
5th quintile	11%	13%	-127%	14%	12%	17%	13%	11%	15%	17%	21%	36%	16%	8%	14%	14%
	<i>Change in savings rate due to imposing Korean saving behaviour:</i>															
	16%	31%	29%	16%	16%	22%	18%	19%	18%	37%	27%	18%	16%	20%	16%	13%
	<i>Decomposition by income bracket:</i>															
1st quintile	-2%	4%	8%	-1%	-1%	-2%	2%	0%	-4%	4%	-3%	-3%	-4%	2%	-2%	-4%
2nd quintile	1%	5%	4%	1%	1%	2%	1%	2%	1%	5%	1%	1%	0%	3%	1%	0%
3th quintile	3%	5%	4%	2%	2%	3%	2%	4%	3%	7%	3%	3%	2%	5%	2%	2%
4th quintile	5%	6%	3%	3%	4%	5%	3%	5%	6%	8%	6%	5%	4%	6%	5%	4%
5th quintile	8%	10%	10%	11%	9%	14%	9%	7%	12%	13%	18%	11%	13%	5%	11%	11%

Source: own elaboration based on income and consumption household surveys.