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Micro Evidence from Seventeen Latin American and
Caribbean Countries

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Abstract¹

Using micro data on expenditure and income for 17 Latin American and Caribbean (LAC) countries, this paper presents stylized facts on saving behavior by age, education, income and place of residence. Counterfactual saving rates are computed by imposing the saving behavior, the population distribution or the income distribution of two benchmark economies (the United States and Korea). The 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 lesser extent, 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.

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

Keywords: Saving rates, Latin America

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1. Introduction

According to the World Development Indicators, gross national savings in Latin America as a percentage of GDP was 20 percent in 2012. This figure is well below East Asia and Pacific (40 percent) and South Asia (30 percent), but at about the same level as other regions like Europe and Central Asia (17 percent) and Sub-Saharan Africa (17 percent) and above the United States (12 percent). The comparison between these regions suggests that there is not an obvious relationship among national savings, growth and development. This might be due to significant heterogeneity within regions. In particular, Latin America and the Caribbean (LAC) is not a homogeneous entity in many dimensions, including savings rates. In 2012, they were as large as 26 percent in Bolivia and as low as 9 percent in neighboring 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 differs by age. Alternatively, the permanent income hypothesis of Friedman (1957) suggests that consumption (and therefore savings) will differ among individuals whose determinants of permanent income are different. Empirically, Carroll, Rhee and Rhee (1994) test for cultural effects on saving behavior in the United States. As will become clear in the methodology section, differences in saving rates among countries can be disaggregated into the following categories:

1. 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).
2. Differences in the distribution in the population of the relevant groups (e.g., differences in the proportion of individuals yet to join the workforce, difference in education levels).

3. Differences in the income share of groups (e.g., countries with income concentrated in individuals with low saving rates).

The goal of this paper is to address the importance of these differences, with particular interest in the first cause (differences in behavior among groups of the population). In particular, we are interested in addressing how similar or different savings patterns are 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 17 LAC countries and two benchmark economies (the United States and Korea) and compute individual saving rates for the adult population and household savings rates.

It has been repeatedly argued that saving rates in Latin America are low (e.g., Edwards, 1996; Gutiérrez 2007, Reinhardt, 2008; and Pérez-Monteiro, 2012) and this constitutes a constraint on sustained growth. Most studies are based on saving rates constructed from macroeconomic variables. There are two streams in this literature. One is based on individual country studies using time-series estimations (e.g., Bulir and Swiston, 2006, and Gollás, 1999, for Mexico; López Mejia and Ortega, 1998, for Colombia; Paiva and Jahan, 2003, for Brazil; and Casillas, 1993, for Argentina and Mexico). The other stream evaluates Latin American saving rates within a broader sample of countries. Papers in this latter group used a variety of panel data techniques. Edwards (1996) is probably the first in this line of research, followed methodologically by Reinhardt (2008), Pérez-Monteiro, Radusweski and Cavalcanti (2012), and Lane and Tornell (1998). Other Latin American researchers have an even wider country focus. The World Bank research project “Saving across the World” (see Loayza, Schmidt-Hebbel and Servén, 2000a, for a review of this project) produced a wide-reaching dataset that permitted testing other issues like the relationship between income inequality and aggregate savings (Schmidt-Hebbel and Servén 2000) and other policy and non-policy factors and savings (Loayza, Schmidt-Hebbel and Servén, 2000b). Gutiérrez (2007) reviews the empirical literature. According to him, there is a positive association of savings with income level and income growth, macroeconomics stability, foreign credit constraints and demographics. The relations of savings with other

variables like real interest rate, types of pension systems and financial development is mixed.

In the literature there are several papers who aim to set the main stylized facts of savings rates in particular countries (e.g., Butelmann and Gallego, 2001, for Chile; Alegre and Pou, 2008, for Spain; Castañeda, 2001, for Colombia; Demery and Duck, 2006, for the United Kingdom; and Alan, Atalay and Crossley, 2006, for Canada, among others). Poterba (1994), in whose book several case studies appeared, is probably the classic citation for this type of research. Deaton (1992), Browning and Lussardi (1996) and Attanasio (1999) present comprehensive surveys on consumption and saving that stress the importance of looking at micro-behavior to understand national saving differentials.

This article was the end product of research conducted under the Inter-American Development Bank's Latin American and Caribbean Research Network project "Domestic Savings in Latin America and the Caribbean." This project explored the low level of domestic savings in Latin America and the Caribbean, the poor financial intermediation of that savings, and its inefficient allocation. This paper presents the results of one of the eight research projects that comprised this study.²

Our paper contributes to the literature on at least two grounds. First, micro 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 from the United Kingdom, the United States 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 and theoretical reasons. Among others, Butelmann and Gallego (2001) and Dynan, Skinner and Zeldes (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.³ Butelmann and Gallego (2001) also report disparities in savings rates by education level. Those with higher education were the only group with a positive median saving rate in Chile. Differences in savings rates by age are predicted by life-cycle

² <http://www.iadb.org/en/research-and-data/project-details,3187.html?id=2113>

³ See Gandelman (2015) for an application to LAC countries.

model theories and have been reported in several empirical exercises (e.g., Demery and Duck, 2006, for the United Kingdom and Alegre and Pou, 2008, for Spain).

Second, are Latin American saving rates low or high? There is not a natural benchmark for comparing their relative sizes. We perform a series of counterfactual exercises comparing the structure of savings in LAC with that of the United States and Korea and find that, compared to these countries, LAC saving rates are indeed low. The counterfactual exercises allow us to identify 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 on saving and on borrowing are likely to be lower than in Latin America. We also wanted 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 Anglo-Saxon background of the United States and Korea's Asian culture. Finally, according to WDI, Korean gross savings as percentage of GDP are larger than LAC gross savings, which are in turn larger than U.S. gross savings.

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 and the counterfactual exercises in Section 5. Section 6 concludes.

2. Methodology

2.1 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 and C stand for total private income and consumption, respectively, while y_i and c_i represent, respectively, group income and group consumption. 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 and third term can be seen as how much this group savings rate is weighted 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 of these three terms can explain differences in national saving rates.

2.2 Counterfactual Saving Rates

We compute counterfactual saving rates considering various dimensions (age, education income and place of residence). For ease of exposition we explain them in terms of age brackets, but the same procedure is applied to other disaggregations 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 United States or Korea.

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

1. To what extent are differences in national private saving rates between LAC and United States/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 United States/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 extent are differences in national private saving rates between LAC and United States/Korea 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 extent are differences in saving rates between LAC and United States/Korea due to differences in income distribution? We assume that the income distribution by age bracket in LAC is the same as in United States/Korea but that the saving behavior by groups and the age distribution remains the same as that of each LAC country. The counterfactual national saving rate for each LAC country is:

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

2.3 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 among household

members using some more or less ad hoc rule. Second, economic theory in general, and life cycle theory in particular, is constructed assuming individual and not household decision makers. Third, there are differences among household members in some of the variables of interest like age and education. Computing household saving rates forces us to classify households' savings by the characteristics 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 at both the household and individual level.

In computing 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 into three groups:

1. Dependent children: individuals younger than 18;
2. Principal adults: the head of the household and his partner (if any); and
3. Dependent adults: other adults.

The consumption level of a newborn baby is assumed to be 30 percent of that of an adult, and this proportion is assumed to increase linearly until age 18, when the person 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 of 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, each ending up with 1.15 units of consumption. The total consumption of 100 is divided between 34.8 ($100 * 1.15 / 3.3$) for each principal adult and 30.3 ($100 * 1 / 3.3$) for 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

We work with micro data for 17 LAC countries (Argentina, Bahamas, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago and Uruguay), the United States and Korea. The databases for Nicaragua present data only at the household level.

Countries perform income and expenditure surveys every decade or so as an input in the construction of the Consumer Price Index. Since the objective of the surveys is the construction of an average consumption basket, data on consumption expenditure are very disaggregated. It includes all forms of consumption like food, beverages, transportation, leisure, education and health expenditures. Table 1 presents the data sources, most of which are countries' national statistical institutes.

The dates, also reported in Table 1, range from 2003 to 2012. Ideally, we would like to have information from different countries at the same moment in time and in the same phase of the business cycle. This is not possible, however, when working with a sample of countries as wide as in this paper. Therefore, one of the contributions of this paper is in itself a limitation that we acknowledge.

There are some differences in the way data are gathered and reported in the surveys. To the best of our ability we tried to homogenize the definition of savings rates. Labor income is the main source of income for most individuals. It is reported after tax in all cases except Brazil ("rendimento bruto" in Portuguese) and Nicaragua, where data are gathered gross of taxes and social security. According to Nicaraguan documentation, taxes and contributions to social security are gathered in a separate question but, unfortunately, this information is not reported in the microdata.

All forms of monetary and non-monetary income are computed. Financial capital gains (e.g., increases in asset values due to price changes in capital markets) are not commonly reported in the surveys, so we do not include them in current income. On the

other hand, earned interest and dividends are regularly reported and are included in our working definition of current income.

The surveys request expenditures over various time frames (yearly, quarterly, monthly, weekly and daily). The national statistical institutes of all countries but Mexico and the United States convert these totals into monthly figures; those two countries convert expenditures into quarterly data. Consumption of durable goods is also reported, and a portion of it is imputed according to the current period (month or quarter).

Within the literature, education and health spending are sometimes considered forms of investment and deducted from current consumption to construct wider savings definitions. We do not follow this approach, however, and treat all forms of education and health spending as consumption.

We make two further imputations to consumption and income. Quantitatively, the most important is the rent value of houses for homeowners, which appears as consumption and income in all cases but Argentina, Barbados, Korea and the United States, where this information is not available. Home production for consumption is treated in the same way. The inclusion in both consumption and income of imputed rent and home production does not alter savings in absolute terms, but it does affect the savings rate.

Survey coverage includes representative samples from both urban and rural settings in most countries. In Bahamas, Barbados, Chile, Nicaragua, Panama, Uruguay and Korea the sample is only urban. Table 1 reports the number of individuals, adults and households included in each survey.

Table 1. 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	Encuesta 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
Trinidad & Tobago	2005	12,854	9,288	3,611	Survey of Living Conditions	Central Statistical Office
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 survey of Nicaragua reports income and consumption information only at the household level. *Source:* Authors' compilation based on income and consumption household surveys.

4. Differences in Savings among Countries

The third column of Table 2 presents our estimates of national household saving rates from the income and consumption surveys. For purposes of comparison 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, and for those countries we report the two-year average of the WDI measure.

As expected, our estimates (except for Bolivia, Nicaragua and the United States) are below the national gross domestic savings figures since they only capture the savings undertaken by families within a country. The difference between our savings rates and the WDI can be seen as a reflection of firm and government saving rates. The household saving rates of Bolivia, Nicaragua and the United States are higher than the national saving rate, which implies that firms and governments in these countries are saving at a lower rate than households. Working with the same database as we do, Dynan, Skinner and Zeldes (2004) present results similar to ours for the United States. They report that the average savings rates for ages 30 to 59 is 30 percent, and for the whole sample 25 percent. 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 0.38. When the United States is not included the correlation increases to 0.51, and without the three countries (Bolivia, Nicaragua and the United States) for which we find a household saving rate above the gross domestic saving rate the correlation increases to 0.61. Figure 1 presents the relevant scatter plots. We conclude that for the LAC countries our estimates are reasonably consistent with published national data.

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).

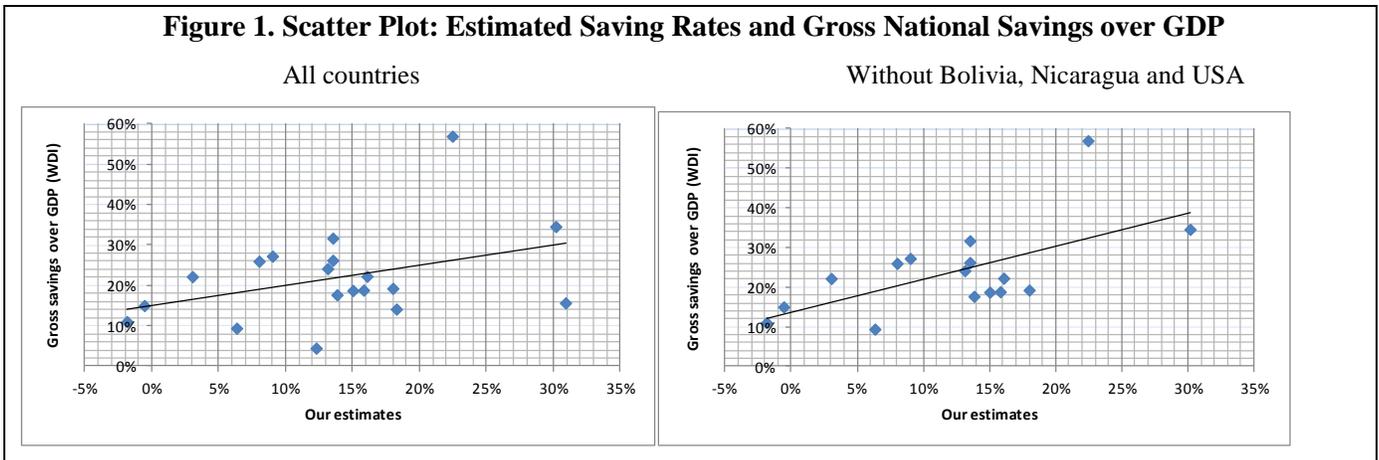
Table 2. National Savings Rate

	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	18%	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%
Trinidad y Tobago	20005	22%	57%
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.

Figure 1. Scatter Plot: Estimated Saving Rates and Gross National Savings over GDP



Source: Authors' compilation based on income and consumption household surveys and WDI.

4.1 Saving Rates by Age

Table 3 and Table 4 report the saving rates by age brackets. Table 3 is based on individuals saving rates and Table 4 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. Moreover, older individuals (i.e., 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 and Trinidad and Tobago) 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 nineteen countries here considered classified by household head age. The inverse U shape is less evident in most countries than in Brazil, Mexico and the United States. There are two differences between data in Table 3 (Figure A1) and Table 4 (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 3 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 3. 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	Trinidad & Tobago	Uruguay	US	Korea
less than 25	-27%	-33%	-32%	-22%	-28%	21%	-63%	-43%	-91%
25-29	-6%	1%	6%	11%	18%	30%	3%	21%	30%
30-34	-3%	7%	12%	14%	15%	29%	13%	34%	38%
35-39	4%	6%	13%	16%	16%	28%	8%	36%	38%
40-44	8%	7%	20%	21%	21%	21%	19%	40%	34%
45-49	14%	16%	11%	20%	22%	26%	24%	38%	41%
50-54	8%	18%	27%	16%	22%	24%	31%	41%	47%
55-59	16%	18%	22%	41%	23%	27%	27%	39%	41%
60-64	-12%	3%	28%	31%	20%	8%	22%	29%	15%
65-69	7%	-4%	21%	17%	12%	0%	20%	30%	6%
70-74	-34%	-9%	21%	20%	4%	11%	26%	28%	-33%
75 and more	-38%	-35%	16%	14%	0%	15%	22%	12%	-72%

Source: Authors' compilation based on income and consumption household surveys.

Table 4. 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	Trinidad & Tobago	Uruguay	USA	Korea
less than 25	-4%	-15%	-1%	1%	-7%	4%	30%	12%	3%	57%
25-29	-6%	-5%	7%	7%	2%	10%	28%	22%	30%	39%
30-34	-8%	5%	13%	9%	5%	7%	24%	14%	34%	40%
35-39	-10%	1%	9%	6%	8%	10%	35%	10%	36%	37%
40-44	-2%	3%	13%	14%	14%	12%	18%	13%	41%	30%
45-49	5%	7%	10%	6%	12%	12%	24%	15%	29%	21%
50-54	-4%	6%	13%	12%	16%	15%	26%	20%	34%	30%
55-59	7%	9%	24%	14%	28%	18%	23%	13%	32%	31%
60-64	-6%	7%	17%	22%	27%	18%	18%	19%	32%	31%
65-69	10%	5%	8%	21%	16%	16%	12%	14%	27%	28%
70-74	-1%	1%	9%	17%	17%	13%	11%	21%	25%	7%
75 and more	-2%	-9%	7%	24%	30%	18%	23%	17%	11%	18%

Source: Authors' compilation based on income and consumption household surveys.

4.2 Saving Rates by Education

We expect a positive correlation between saving rates and educational levels for at least two reasons. First, the decision to engage in advanced educational studies implies the postponement of entry into labor markets and therefore the postponement of the highest 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 the 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),⁴ more educated people should also save more.

Figure 2 (Table 5) and Figure 3 (Table 6) present saving rates by educational level. The degree of information on education between countries is dissimilar. The common ground for all countries is a division among the following: 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 report the same saving rates but differently classified.

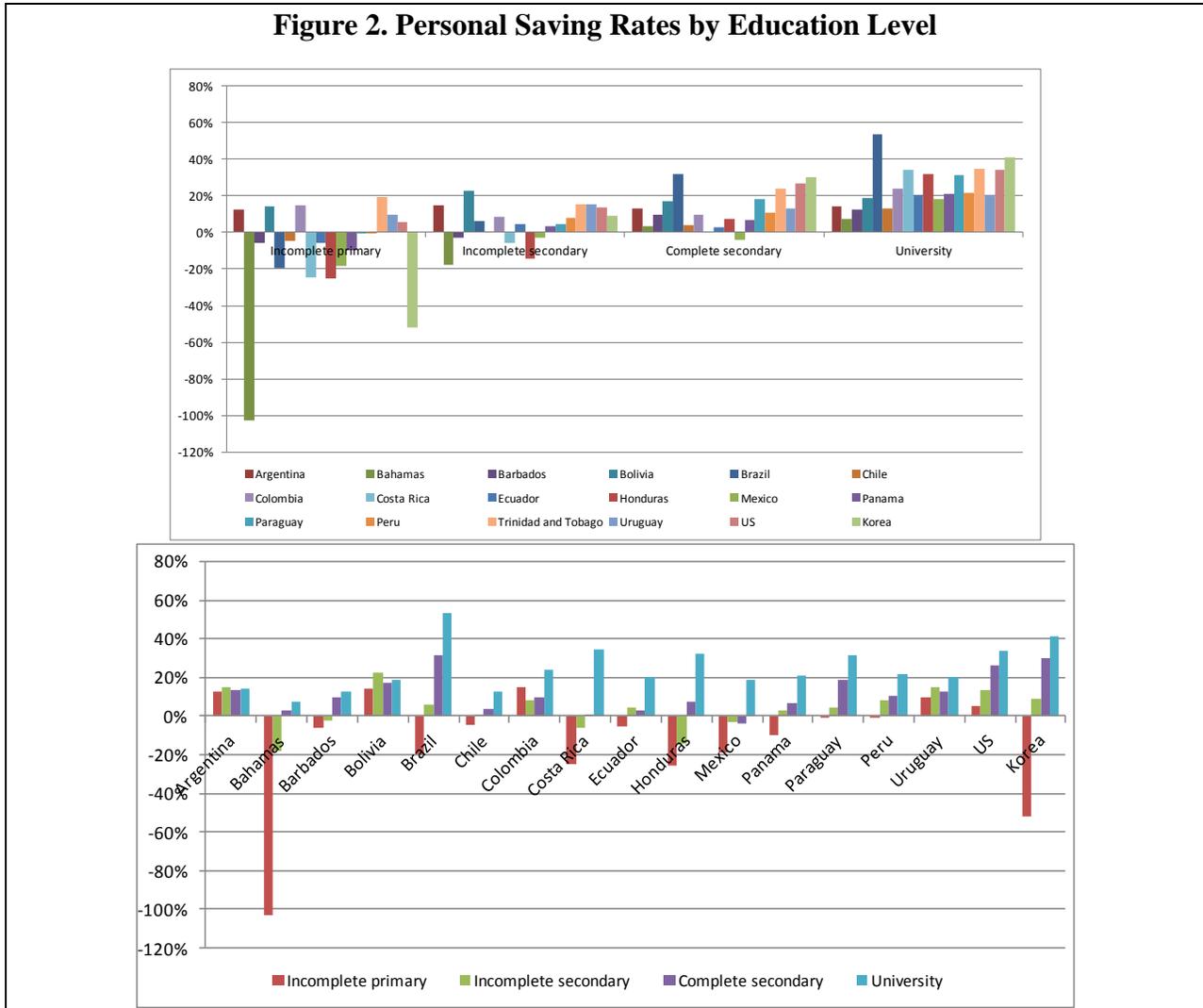
Personal saving rates have a very clear and monotonic relation with education for most countries (but Argentina, Bolivia, Brazil and Uruguay). More educated individuals save more than less educated individuals. Saving rates are negative in nine countries out of 18 for the less educated.

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 households with more educated household heads. As explained in the methodology section, a drawback in personal saving rates is that in computing them we have to make some assumptions on how to distribute consumption and household income. On the other hand, the drawback of the household head saving rate 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

⁴ See next section and Dynan, Skinner and Zeldes (2004).

others of similar educational level⁵) we were expecting to find a much similar picture of personal and household level saving rates classified by educational level.

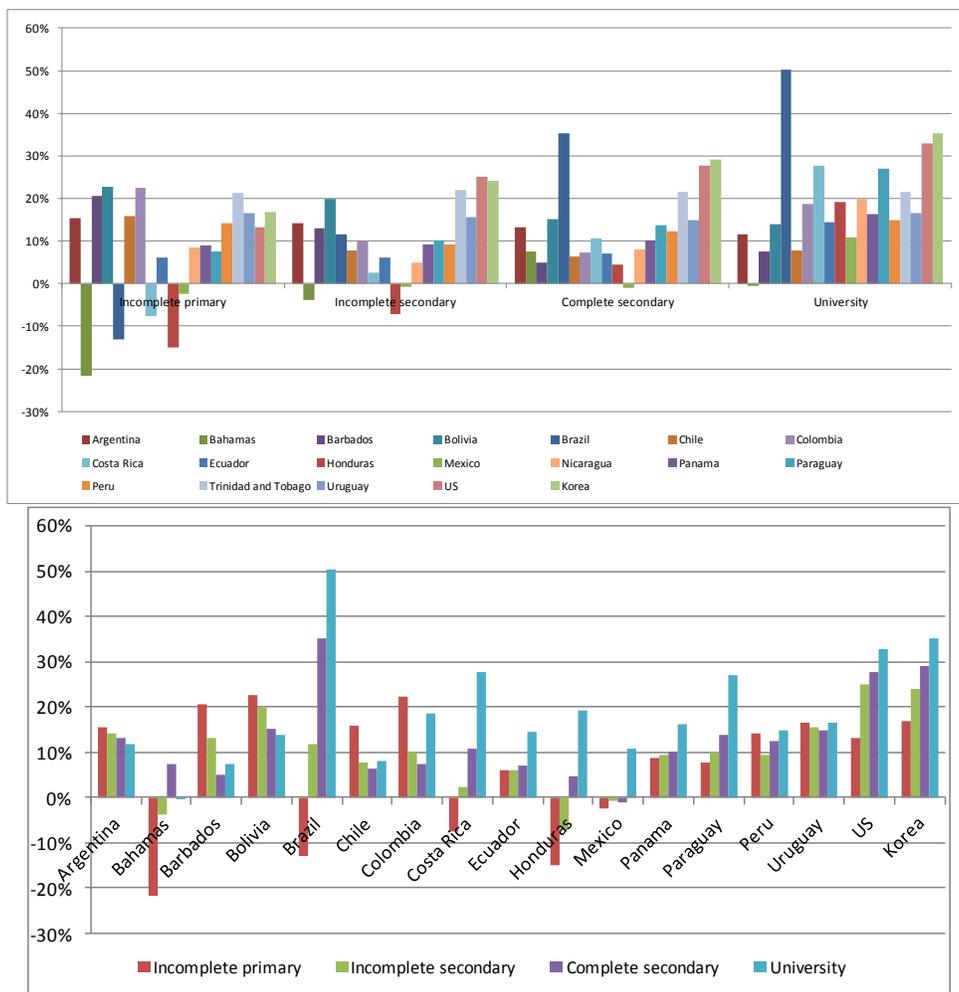
Figure 2. Personal Saving Rates by Education Level



Source: Authors' compilation based on income and consumption household surveys.

⁵ See, for instance, Greenwood et al. (2014).

Figure 3. Household Saving Rates by Education Level of Household Head



Source: Authors' compilation based on income and consumption household surveys.

Table 5. 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%
						Trinidad &			
	Honduras	Mexico	Panama	Paraguay	Peru	Tobago	Uruguay	USA	Korea
Incomplete primary	-25%	-19%	-10%	0%	-1%	20%	10%	5%	-50%
Incomplete secondary	-14%	-3%	3%	5%	8%	16%	15%	14%	9%
Complete secondary	7%	-4%	7%	19%	11%	24%	13%	27%	30%
University	32%	18%	21%	31%	21%	35%	20%	34%	41%

Source: Authors' compilation based on income and consumption household surveys.

Table 6. 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%	
						Trinidad &				
	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Tobago	Uruguay	USA	Korea
Incomplete primary	-15%	-2%	8%	9%	8%	14%	21%	17%	13%	17%
Incomplete secondary	-7%	-1%	5%	9%	10%	9%	22%	16%	25%	24%
Complete secondary	5%	-1%	8%	10%	14%	12%	21%	15%	28%	29%
University	19%	11%	20%	16%	27%	15%	21%	16%	33%	35%

Source: Authors' compilation based on income and consumption household surveys.

4.3 Saving Rates by Income Level

The relation between saving rates and income levels is less clear than it might seem at first glance. Conventional wisdom may suggest that rich individuals save more because they can afford to do so. Alternatively, in line with Benjamin Franklin's adage "a penny saved is a penny earned," saving can be seen as leading to wealth. Either way there is a sense that saving rates and income/wealth go hand in hand.

From an economist's 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 are larger than the savings of poorer people, rich individuals will be able to have larger negative saving than poorer individuals in old age. Therefore, the relation between current income and savings might also depend 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 moves someone down the income distribution and at the same time produces a smaller (even negative) saving rate than what is expected. On the other hand, a positive temporary income shock moves someone up the income distribution and at the same time produces a larger than normal saving rate. Therefore, temporary shocks induce a false positive relation. Measurement error in income produces the same artificial effect as temporary shocks, inducing a spurious positive correlation between current income and savings.

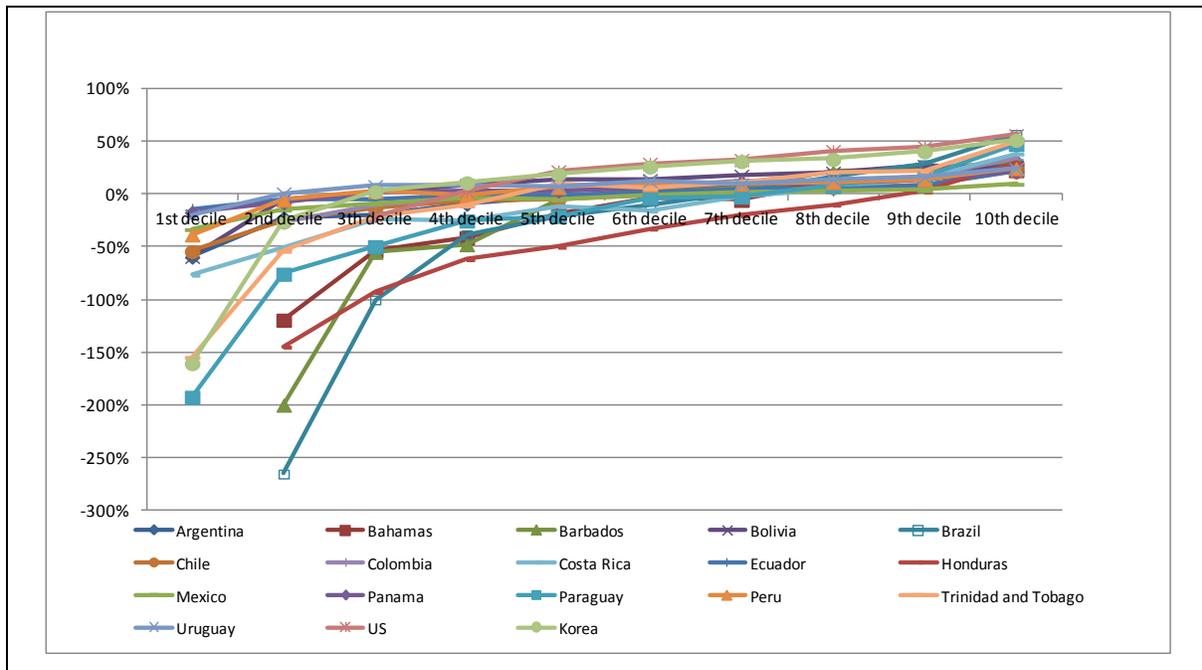
The data presented in Figures 4 (Table 7) and Figure 5 (Table 8) do not address the more interesting question of the relation between saving rates and permanent income.⁶ Rather, they refer to current income with all the difficulties previously mentioned in their interpretation.

⁶ Gandelman (2015) finds that in most LAC countries the rich save more using lifetime income and wealth proxies.

The saving 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 percent (Bahamas, Barbados, Colombia, Honduras and the United States).

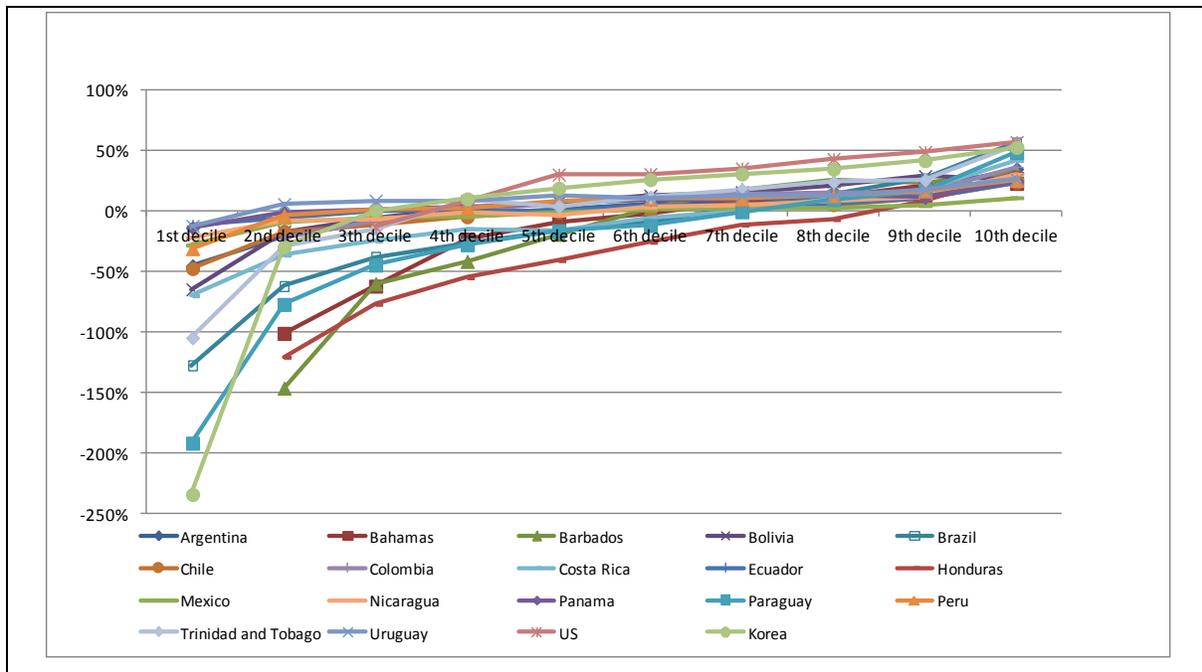
According to the personal saving rates, the first income bracket with positive savings is the 9th decile for Honduras, the 8th decile for Bahamas, Costa Rica and Paraguay, the 7th decile for Chile and Mexico, the 6th decile for Argentina and Barbados and Brazil, the 5th for Colombia, Trinidad and Tobago and Ecuador, the 4th for the United States, 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, Trinidad and Tobago and the United States, 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, 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 other hand, Uruguay is the LAC country where positive savings rates are most widespread among income brackets.

Figure 4. Personal Saving Rates by Income Level



Source: Authors' compilation based on income and consumption household surveys.

Figure 5. Household Saving Rates by Household Income Level



Source: Authors' compilation based on income and consumption household surveys.

4.4 Saving Rates by Region of Residence

There are several reasons to think that there might be differences between urban and rural regions. The following explanations, while not an exhaustive list, represent a few possibilities. First, financial services are more concentrated in urban than rural areas. Second, 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. Third, consumption patterns in rural and urban areas are different due to availability of shopping centers and due to cultural traits. Finally, there are differences in average education levels. As some of these reasons are likely to increase savings and some likely to decrease them, we do not have a clear predictions on saving differences between urban and rural areas. Table 9 reports that saving rates in rural areas are 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 they are of similar magnitude in Bolivia, Ecuador, Peru and the United States.

Table 7. 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%
						Trinidad & Tobago	Uruguay	USA	Korea
	Honduras	Mexico	Panama	Paraguay	Peru				
1st decile	-361%	-33%	-17%	-192%	-38%	-154%	-20%	-2945%	-160%
2nd decile	-145%	-15%	-8%	-76%	-5%	-54%	1%	-503%	-26%
3th decile	-93%	-9%	1%	-49%	3%	-21%	8%	-21%	3%
4th decile	-62%	-3%	3%	-25%	-1%	-11%	8%	3%	11%
5th decile	-50%	-5%	3%	-21%	7%	10%	8%	22%	19%
6th decile	-33%	-1%	6%	-3%	9%	6%	13%	29%	26%
7th decile	-20%	1%	10%	-2%	10%	12%	10%	33%	31%
8th decile	-10%	3%	10%	8%	12%	21%	14%	41%	33%
9th decile	2%	4%	14%	17%	14%	22%	16%	45%	41%
10th decile	30%	10%	21%	48%	25%	50%	24%	56%	52%

Source: Authors' compilation based on income and consumption household surveys.

Table 8. 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%		
							Trinidad & Tobago				
	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru		Uruguay	USA	Korea	
1st decile	-324%	-28%	-22%	-14%	-191%	-31%	-104%	-12%	-2945%	-234%	
2nd decile	-120%	-9%	-8%	-1%	-77%	-4%	-29%	6%	-466%	-29%	
3th decile	-77%	-6%	-6%	2%	-44%	1%	-14%	9%	-13%	1%	
4th decile	-55%	-4%	-1%	4%	-28%	2%	10%	8%	9%	10%	
5th decile	-41%	-1%	-3%	7%	-16%	8%	4%	13%	30%	19%	
6th decile	-26%	1%	3%	10%	-12%	10%	12%	11%	31%	26%	
7th decile	-11%	3%	5%	10%	0%	10%	18%	13%	35%	31%	
8th decile	-7%	2%	8%	13%	10%	13%	24%	13%	43%	35%	
9th decile	9%	5%	11%	12%	17%	17%	26%	18%	49%	42%	
10th decile	31%	11%	31%	25%	48%	25%	55%	26%	57%	53%	

Source: Authors' compilation based on income and consumption household surveys.

Table 9. 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: Authors' compilation 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, even 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, for example, the distribution of income in one country is more concentrated among older, already retired individuals and in the other country the income distribution is more concentrated among adults who are still on the job market. In this case the national saving rates of the second country would be larger than that of the first.

Summing up we compute our counterfactual exercises by allowing national saving rates to differ by i) differences in saving behavior, ii) differences in population distribution and iii) 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 meaningful breakdown of the population, and 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 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, while in both figures the United States presents the 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, while intermediate brackets are in five-year increments and the last one that accumulates all individuals above 75 years old. For the graph based on individuals we observe, as expected, a decreasing line with the exception of the last bracket. Figure A5 shows an inverse U shapes for all countries but Barbados. This shape is due to two factors. First, it is a reflection of the effect of mortality through time (which produces the negative slopes in Figure A2). Second, it reflects the lower probability of young individuals' being household heads compared to older individuals.

Figures A3 and A6 report a picture of relative income by age. Those above (below) the 100 percent 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 richest 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 percent, 53 percent and 51 percent of national income, respectively. On the other hand, the LAC countries with the lowest relative income for the youngest bracket are Chile, Argentina and Uruguay, with average income of 36 percent, 38 percent and 36 percent of national income, respectively. In the United States and Korea the youngest group's average income is 33 percent and 32 percent, respectively, of national income.

Table 10 presents summary results of the counterfactual exercises that are presented in detail in Tables A1 through A7 in the Appendix. Panel A presents the average counterfactual saving rate. Panel B 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 United States saving behavior will more than double saving rates, with increases of 15 to 19 percentage points (individual and household-based exercises, respectively). The counterfactual based on Korea also suggests that saving behavior is the main driver of differences, but the exercise based on individual saving rates implies an increase of 6 percentage points, while the exercise based on household implies an increase of 18 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 as 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 behavior is quantitatively more important than education distribution, while for others (Brazil, Costa Rica, Honduras, Paraguay, Trinidad and Tobago, Uruguay) the opposite is true. There are also some other countries where the effect of these two dimensions is about the same size.

The exercises based on breaking down the saving rate by income groups show that the most relevant dimension to explain differences in saving rates with the benchmark economies is differences in saving behavior, which run in opposite direction for the United States and Korea. Imposing U.S. saving behavior (by income quintiles) will decrease LAC average saving rates at least 16 percentage points, making them negative. On the other hand, imposing 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 the United States are the main driver of differences in national saving rates. We do not compute counterfactuals by residence with Korea since the Korean survey gathers only urban data.

Table 10. Summary of Counterfactual Exercises (simple country averages)

		<i>Average LAC savings rate</i>		11%			
		<i>Benchmark economy:</i>		US	Korea		
		<i>Micro data based on:</i>		Individuals	Individuals		
				US	Korea		
				Households	Households		
PANEL A		<i>Characteristic imposed:</i>	Counterfactual saving rates				
	Exercise based on age brackets ¹	Saving behavior	27%	17%	31%	30%	
		Population distribution	14%	15%	11%	13%	
		Income distribution	12%	12%	12%	11%	
	Exercise based on education ²	Saving behavior	23%	18%	26%	28%	
		Population distribution	35%	20%	29%	18%	
		Income distribution	7%	9%	8%	9%	
	Exercise based on income quintiles ³	Saving behavior	-5%	34%	-23%	31%	
		Population distribution	10%	9%	11%	11%	
		Income distribution	14%	7%	13%	9%	
	Exercise based on place of residence ⁴	Saving behavior	31%		31%		
		Population distribution	14%		14%		
		Income distribution	12%		12%		
	PANEL B		<i>Characteristic imposed:</i>	Counterfactual change in saving rates			
		Exercise based on age brackets ¹	Saving behavior	15%	6%	19%	18%
			Population distribution	2%	3%	0%	1%
Income distribution			0%	0%	0%	-1%	
Exercise based on education ²		Saving behavior	11%	7%	15%	16%	
		Population distribution	24%	8%	17%	6%	
		Income distribution	-5%	-3%	-4%	-3%	
Exercise based on income quintiles ³		Saving behavior	-16%	23%	-34%	20%	
		Population distribution	-1%	-3%	0%	-1%	
		Income distribution	3%	-4%	2%	-3%	
Exercise based on place of residence ⁴		Saving behavior	18%		18%		
		Population distribution	1%		1%		
		Income distribution	-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.

Source: Authors' compilation 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 factors including cultural and institutional differences. In order to develop some intuition on what explains these differences we decompose the change in the counterfactual saving rates into 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 part of the distribution components in which we are interested. For instance, we only impose the saving behavior of younger individuals of the benchmark economies, keeping the saving behavior of older individuals (and the population and income distribution) at the LAC level.

Summary results of this decomposition are presented in Table 11, while the details are in the Appendix in Tables A8 to A13. We divide the counterfactual based on age bracket into four groups: 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 suggests the increase in the counterfactual LAC saving rates is due to differences in saving behavior of those who are more educated (complete secondary and at least some tertiary education). The decomposition for differences by income quintiles for the United States shows that the lowest U.S. quintile saving rates are well below LAC's lowest quintile, i.e., imposing U.S. saving decreases national saving rates. This is likely due to credit consumption (e.g. credit cards) being more available in the U.S. for the poor. On the other hand, the top income quintiles in the United States and Korea save more than in LAC; thus, the imposition of their saving behavior increases 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 suggest 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. A word of caution, however, is in place here. This increase will most likely be translated into regressive policies from the point of view of income distribution in a region already characterized by very large income disparities.

**Table 11. Summary of Counterfactual Exercises (simple country averages):
Whose Saving Behavior?**

	<i>Benchmark economy: Micro data based on:</i>	US Individuals	Korea Individuals	US Households	Korea Households
		Counterfactual saving rates			
Exercise based on age brackets ^{/1}	less than 35 years old	3%	0%	4%	6%
	35 to 49 years old	7%	7%	9%	6%
	50 to 64 years old	3%	3%	5%	5%
	65 years old and more	2%	-5%	1%	1%
	Total	15%	6%	19%	18%
Exercise based on education ^{/2}	Incomplete primary	1%	-6%	1%	1%
	Incomplete secondary	3%	1%	5%	5%
	Complete secondary	4%	4%	4%	4%
	University	4%	7%	4%	6%
	Total	11%	7%	15%	16%
Exercise based on income quintiles ^{/3}	1st quintile	-41%	1%	-66%	0%
	2nd quintile	1%	2%	-6%	2%
	3th quintile	4%	3%	-3%	3%
	4th quintile	6%	5%	-1%	5%
	5th quintile	14%	12%	6%	10%
Total	-16%	23%	-34%	20%	

^{/1} Detailed results in Tables A8 and A9. ^{/2} Detailed results in tables A10 and A11. ^{/3} Detailed results in Tables A12 and A13.

Source: Authors' compilation based on income and consumption household surveys.

6. Summary, Discussion and Conclusions

In this paper we use micro data on income and consumption from seventeen LAC countries, the United States and Korea. We present descriptive statistics showing an inverse U shape of 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, Skinner and Zeldes, 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 education translates 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 but 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 saving rates also affect the classification of individuals in income scales, favoring the finding of a positive correlation. Constructing proxies for lifetime income and wealth, Gandelman (2015) 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 (United States 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 saving rates between the United States or Korea and LAC countries are differences in 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 is the main driver of differences in national savings with the United States and Korea does not illuminate the causes of those differences. There are many potential explanations, ranging from institutional differences like the degree of development of the financial sector, the social security system and 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 particular 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 for assessing 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 jobs, income level, tax system).

In the decomposition by educational level and income level we find that lower LAC saving rates are to be explained by lower saving behavior of 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 are likely to increase income and social disparities in a region where large inequalities are already in place.

Finally, the poorest in the United States have negative saving rates much larger in absolute terms than in LAC. This may be due to difference in access to credit conditions and other forms to finance consumption. The reduction of credit constraints for the poor, while increasing their well-being, is likely to reduce national saving rates in LAC.

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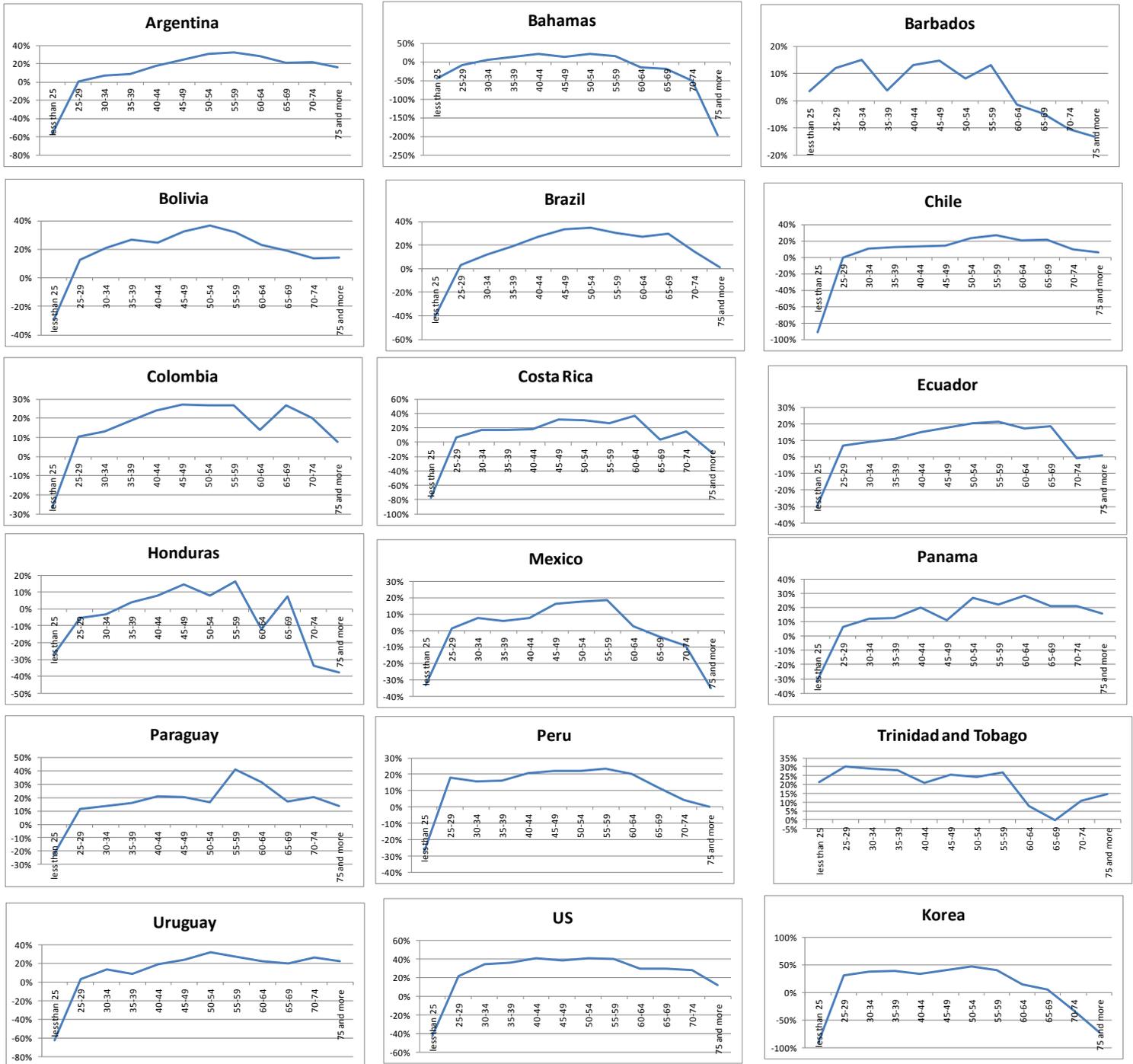
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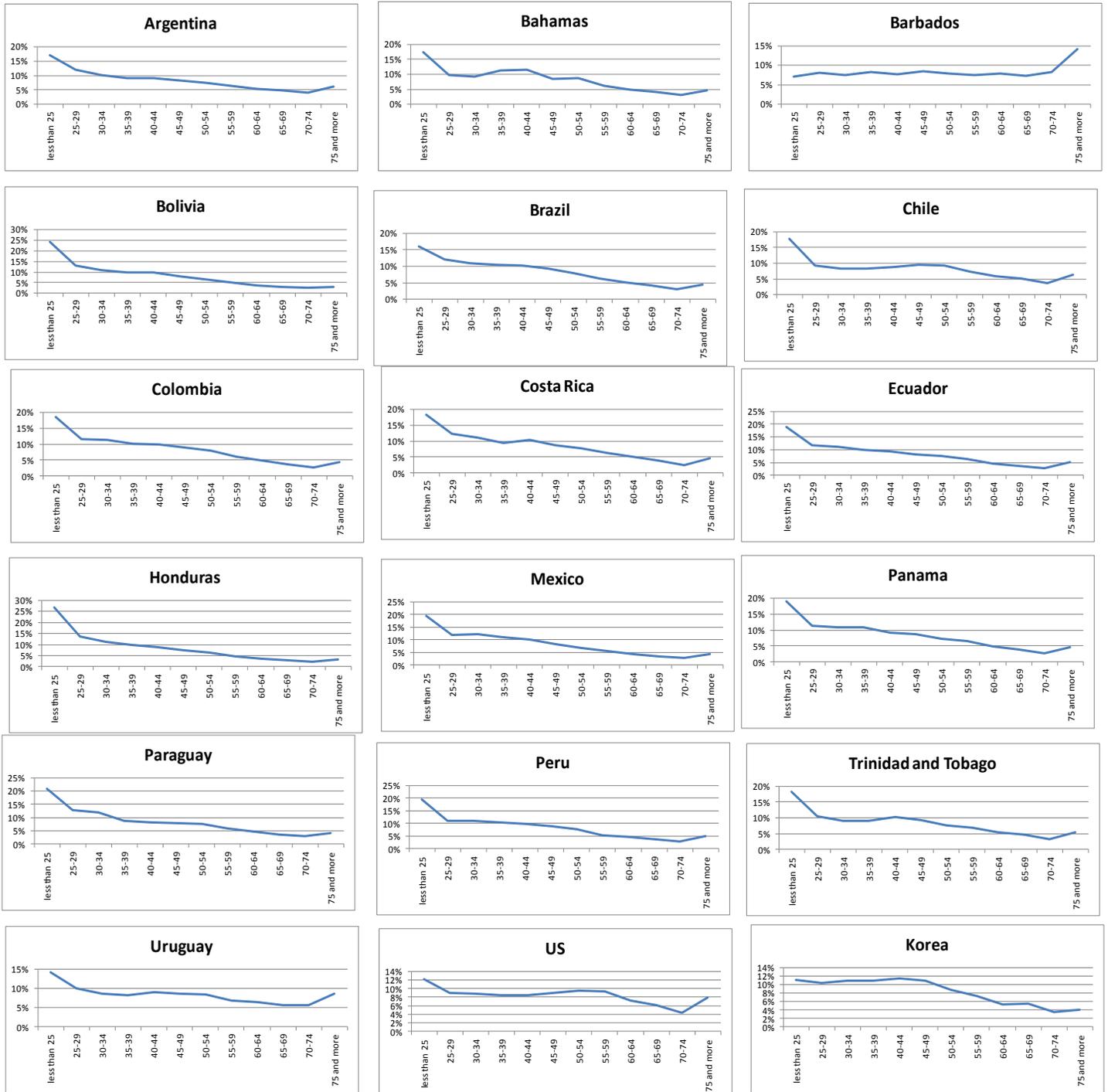
Appendix

Figure A1. Personal Savings Rates by Age



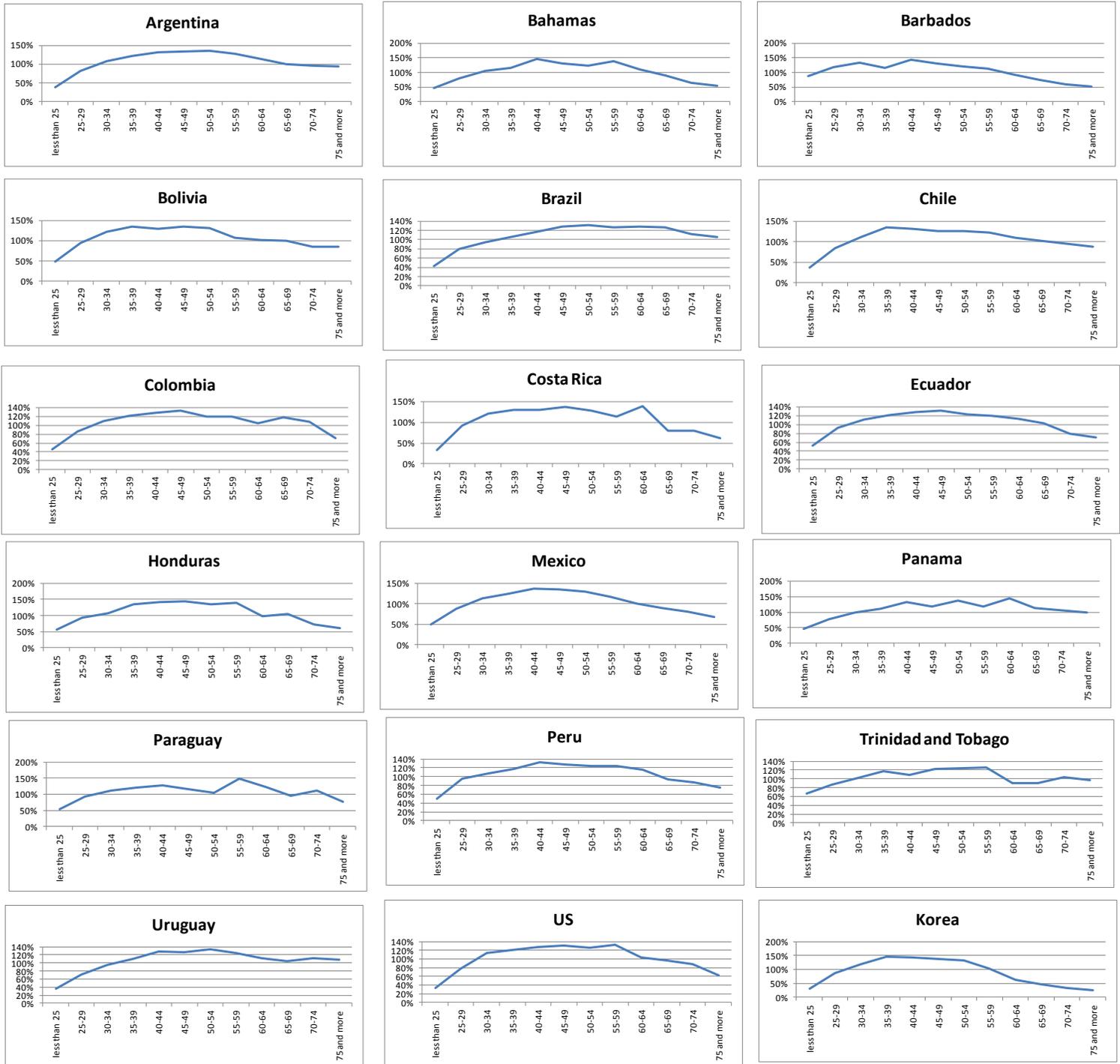
Source: Authors' compilation based on income and consumption household surveys.

Figure A2. Distribution of Population by Age



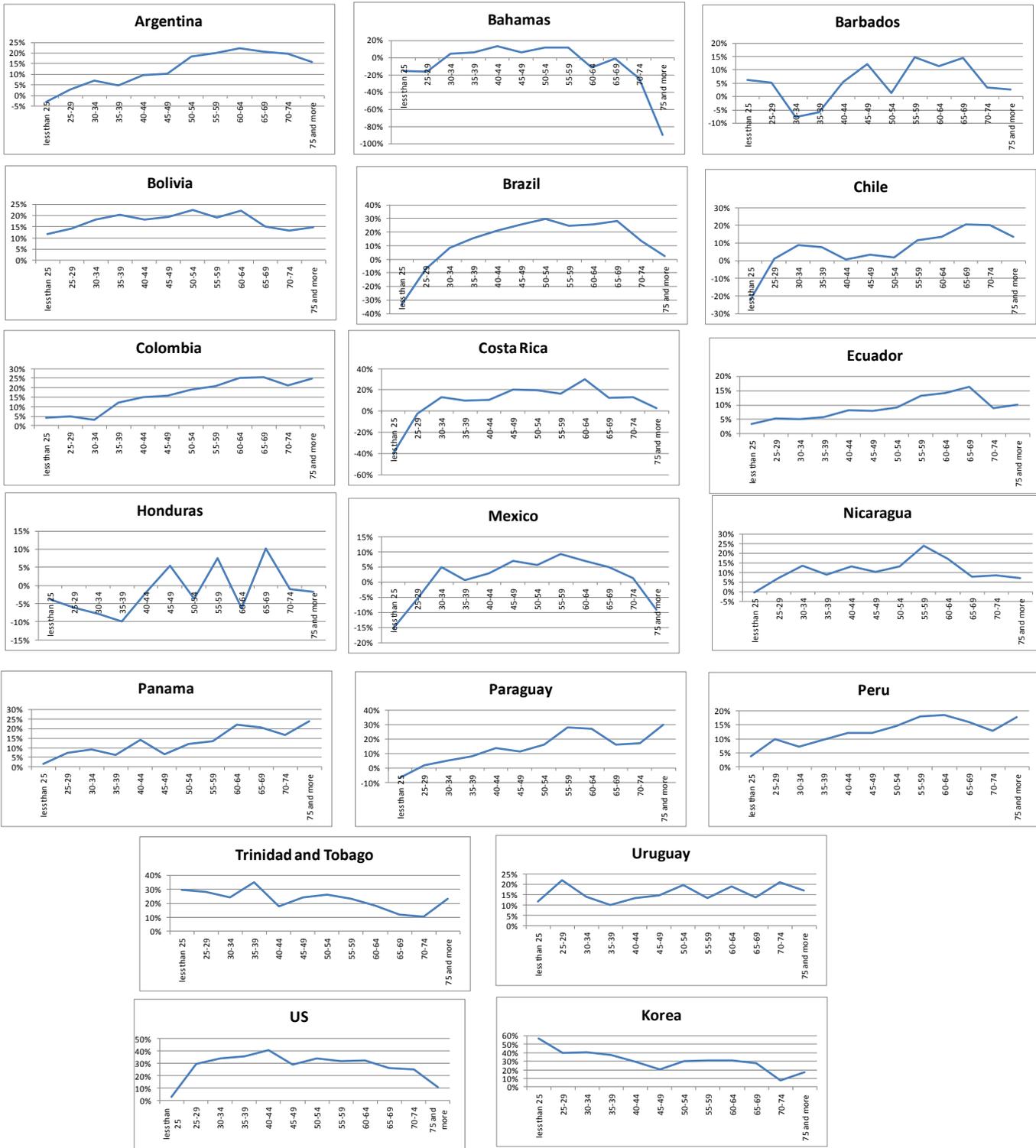
Source: Authors' compilation based on income and consumption household surveys.

Figure A3. Individual Relative Income by Age



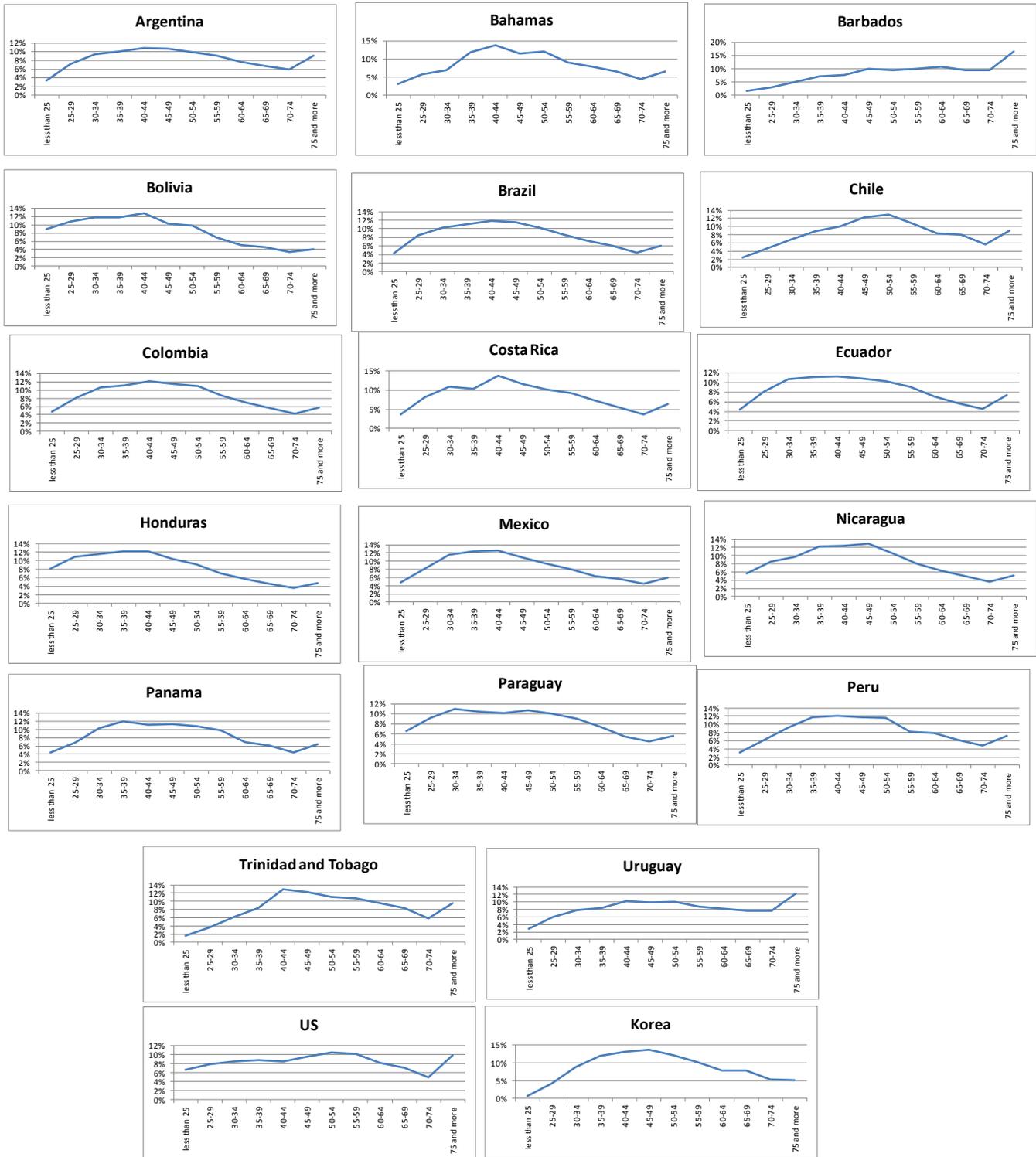
Source: Authors' compilation based on income and consumption household surveys.

Figure A4. Household Savings Rates by Age of Household Head



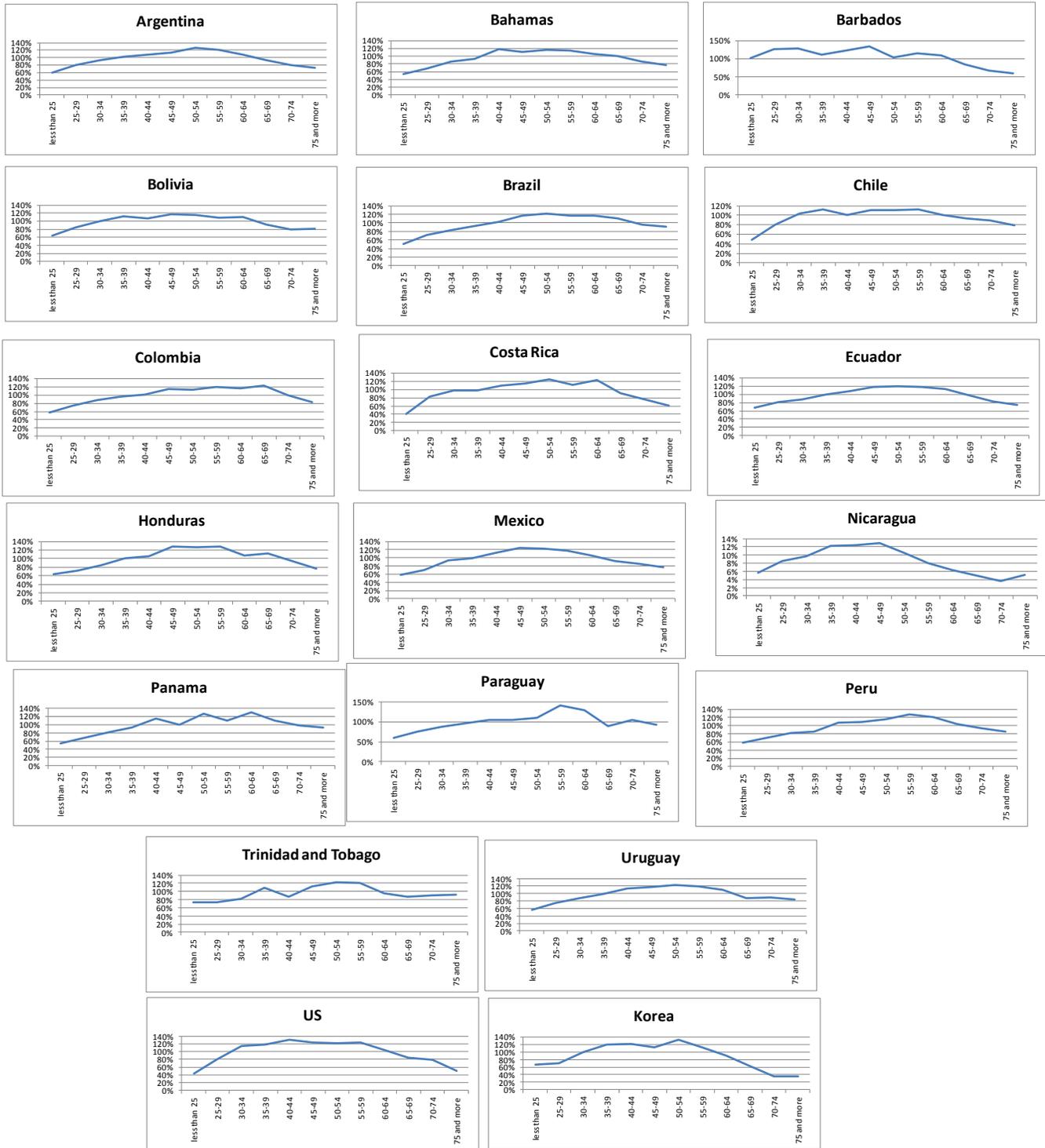
Source: Authors' compilation based on income and consumption household surveys.

Figure A5. Distribution of Population by Age of Household Head



Source: Authors' compilation based on income and consumption household surveys.

Figure A6. Household Relative Income by Age of Household Head



Source: Authors' compilation based on income and consumption household surveys.

Table A1. Counterfactual Saving Rates Using Age Brackets
(Exercises based on micro data at the individual level)

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Trinidad & Tobago	Uruguay		
<i>Savings rate</i>	13%	-1%	6%	18%	18%	8%	16%	14%	9%	-2%	3%	13%	15%	14%	22%	16%		
<i>Characteristics imposed</i>																		
								<i>Counterfactual saving rates</i>										
US saving behavior	28%	29%	28%	25%	28%	29%	27%	29%	26%	23%	27%	27%	25%	26%	24%	29%		
US population distribution	17%	-5%	8%	23%	21%	11%	19%	17%	12%	1%	4%	17%	20%	16%	22%	17%		
US income distribution	13%	-1%	5%	19%	19%	8%	17%	13%	10%	-1%	4%	13%	15%	14%	22%	15%		
Korean savings behavior	18%	21%	15%	16%	19%	18%	19%	23%	17%	14%	19%	16%	15%	17%	12%	14%		
Korean population distribution	17%	1%	10%	25%	21%	11%	20%	18%	12%	2%	6%	16%	19%	17%	24%	17%		
Korean income distribution	11%	5%	7%	19%	18%	7%	16%	13%	10%	0%	5%	12%	14%	15%	22%	13%		
								<i>Variation of counterfactual saving rates with respect to each country's savings rate</i>										
US saving behavior	15%	29%	22%	7%	10%	21%	11%	15%	17%	24%	24%	14%	10%	13%	2%	13%		
US population distribution	4%	-4%	2%	5%	3%	3%	2%	3%	3%	2%	1%	4%	5%	2%	0%	1%		
US income distribution	0%	0%	-1%	0%	1%	0%	1%	-1%	1%	1%	1%	0%	0%	1%	-1%	-1%		
Korean savings behavior	5%	22%	9%	-2%	1%	10%	3%	9%	8%	15%	15%	4%	0%	4%	-11%	-2%		
Korean population distribution	4%	2%	4%	6%	3%	3%	3%	4%	3%	4%	3%	3%	4%	3%	1%	1%		
Korean income distribution	-2%	5%	0%	1%	0%	-1%	0%	-1%	1%	2%	2%	-1%	-1%	1%	0%	-3%		

Table A2. Counterfactual Saving Rates Using Age Brackets
Exercises based on micro data at the household level

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Trinidad & Tobago	Uruguay
<i>Savings rate</i>	13%	-1%	6%	18%	18%	8%	16%	14%	9%	-2%	3%	12%	13%	15%	13%	22%	16%
<i>Characteristics imposed:</i>	<i>Counterfactual saving rates</i>																
US saving behavior	31%	32%	30%	31%	31%	31%	31%	32%	31%	31%	31%	31%	31%	30%	31%	30%	30%
US population distribution	13%	-5%	6%	18%	17%	7%	17%	13%	9%	-1%	3%	12%	13%	17%	13%	23%	15%
US income distribution	13%	2%	6%	19%	19%	8%	16%	14%	9%	-3%	3%	13%	12%	14%	14%	24%	16%
Korean savings behavior	30%	29%	28%	32%	30%	29%	30%	30%	30%	31%	30%	30%	30%	31%	29%	28%	28%
Korean population distribution	14%	1%	6%	20%	22%	8%	18%	16%	10%	-1%	4%	14%	14%	17%	14%	23%	16%
Korean income distribution	12%	3%	5%	18%	17%	6%	15%	13%	8%	-3%	3%	12%	11%	13%	12%	22%	14%
	<i>Variation of counterfactual saving rates with respect to each country's savings rate</i>																
US saving behavior	18%	32%	23%	13%	13%	23%	15%	18%	22%	33%	28%	19%	18%	15%	18%	8%	14%
US population distribution	0%	-4%	-1%	0%	-1%	-1%	1%	-1%	0%	1%	0%	0%	1%	2%	0%	0%	0%
US income distribution	0%	2%	0%	1%	1%	0%	0%	1%	0%	-1%	0%	1%	0%	-1%	0%	1%	0%
Korean savings behavior	17%	30%	22%	14%	12%	21%	14%	17%	21%	33%	27%	18%	17%	16%	16%	6%	12%
Korean population distribution	1%	2%	-1%	2%	4%	0%	2%	2%	1%	1%	1%	1%	1%	2%	1%	1%	0%
Korean income distribution	-2%	4%	-1%	0%	-1%	-2%	-2%	-1%	-1%	-1%	0%	0%	-2%	-2%	-1%	-1%	-2%

Table A3. Counterfactual Saving Rates Using Educational Levels
Exercises based on micro data at the individual level

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Trinidad & Tobago	Uruguay
<i>Savings rate</i>	14%	0%	7%	18%	18%	8%	16%	14%	9%	-2%	3%	13%	16%	14%	22%	16%
<i>Characteristics imposed:</i>	<i>Counterfactual saving rates</i>															
US saving behavior	24%	27%	25%	20%	19%	28%	22%	25%	23%	19%	22%	27%	22%	25%	21%	20%
US population distribution	19%	4%	14%	28%	100%	14%	38%	48%	24%	77%	23%	23%	41%	24%	58%	31%
US income distribution	10%	0%	5%	11%	7%	6%	10%	6%	6%	-5%	1%	9%	10%	10%	14%	10%
Korean savings behavior	26%	30%	26%	5%	7%	30%	12%	23%	18%	5%	16%	28%	15%	20%	18%	15%
Korean population distribution	15%	-1%	9%	23%	58%	7%	21%	20%	12%	35%	8%	13%	26%	15%	37%	22%
Korean income distribution	12%	1%	7%	12%	11%	7%	11%	8%	7%	-2%	2%	12%	13%	13%	18%	11%
	<i>Variation of counterfactual saving rates with respect to each country's savings rate</i>															
US saving behavior	10%	26%	18%	1%	1%	20%	6%	11%	14%	21%	19%	14%	6%	11%	-1%	4%
US population distribution	5%	3%	7%	10%	81%	6%	22%	34%	15%	79%	20%	11%	25%	10%	36%	15%
US income distribution	-4%	-1%	-2%	-7%	-11%	-2%	-6%	-8%	-3%	-3%	-2%	-4%	-5%	-3%	-8%	-6%
Korean savings behavior	12%	29%	19%	-13%	-11%	22%	-4%	10%	9%	6%	13%	15%	-1%	6%	-4%	-1%
Korean population distribution	1%	-1%	2%	5%	40%	-1%	5%	7%	3%	37%	5%	0%	10%	1%	15%	6%
Korean income distribution	-2%	1%	0%	-6%	-7%	-1%	-5%	-6%	-2%	-1%	-1%	-1%	-3%	-1%	-4%	-5%

Source: Authors' compilation based on income and consumption household surveys.

Table A5. Counterfactual Saving Rates Using Income Brackets (quintiles)
Exercises based on micro data at the individual level

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Trinidad & Tobago	Uruguay
<i>Savings rate</i>	13%	-1%	6%	18%	18%	8%	16%	14%	9%	-2%	3%	13%	15%	13%	22%	16%
<i>Characteristics imposed:</i>	<i>Counterfactual saving rates</i>															
US saving behavior	-7%	1%	15%	-7%	20%	-17%	5%	-2%	-30%	15%	-14%	-18%	-2%	-21%	-5%	-9%
US population distribution	12%	-4%	-2%	17%	23%	8%	14%	13%	8%	-4%	3%	12%	12%	12%	21%	15%
US income distribution	16%	7%	19%	22%	15%	9%	19%	14%	11%	-2%	4%	15%	19%	16%	27%	18%
Korean savings behavior	34%	34%	36%	33%	37%	34%	36%	36%	32%	37%	34%	33%	35%	32%	34%	34%
Korean population distribution	11%	-4%	-3%	16%	20%	7%	13%	11%	7%	-6%	2%	11%	10%	12%	19%	14%
Korean income distribution	12%	-3%	2%	19%	-10%	6%	12%	8%	9%	-15%	3%	13%	10%	14%	21%	16%
	<i>Variation of counterfactual saving rates with respect to each country's savings rate</i>															
US saving behavior	-20%	2%	9%	-26%	2%	-25%	-11%	-16%	-39%	17%	-17%	-31%	-17%	-34%	-28%	-25%
US population distribution	-1%	-3%	-9%	-1%	5%	0%	-2%	-1%	-1%	-2%	-1%	-1%	-3%	-1%	-2%	-1%
US income distribution	3%	7%	13%	3%	-3%	1%	3%	0%	2%	0%	1%	2%	4%	3%	5%	2%
Korean savings behavior	21%	34%	29%	15%	19%	26%	20%	22%	23%	39%	31%	21%	20%	19%	12%	18%
Korean population distribution	-3%	-4%	-9%	-2%	2%	-1%	-3%	-2%	-2%	-4%	-1%	-2%	-5%	-2%	-3%	-2%
Korean income distribution	-1%	-2%	-5%	1%	-28%	-2%	-4%	-6%	0%	-13%	0%	0%	-5%	1%	-2%	0%

Source: Authors' compilation based on income and consumption household surveys.

Table A6. Counterfactual saving rates using income brackets (quintiles)
Exercises based on micro data at the household level

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Trinidad & Tobago	Uruguay
<i>Savings rate</i>	13%	-1%	6%	18%	18%	8%	16%	14%	9%	-2%	3%	12%	13%	15%	13%	22%	16%
<i>Characteristics imposed:</i>																	
	<i>Counterfactual saving rates</i>																
US saving behavior	-37%	-7%	14%	-2%	-16%	-37%	-6%	-18%	-56%	8%	-38%	-43%	-47%	4%	-31%	-35%	-42%
US population distribution	13%	-1%	7%	18%	18%	8%	16%	14%	9%	-2%	3%	12%	13%	15%	13%	22%	16%
US income distribution	16%	7%	10%	19%	19%	10%	19%	14%	11%	-3%	4%	13%	14%	14%	15%	28%	17%
Korean savings behavior	29%	31%	35%	34%	33%	30%	34%	33%	27%	36%	30%	30%	29%	35%	30%	30%	29%
Korean population distribution	13%	-1%	5%	18%	17%	8%	15%	13%	9%	-2%	3%	12%	12%	14%	13%	22%	15%
Korean income distribution	13%	-1%	-5%	17%	12%	7%	14%	9%	9%	-13%	3%	11%	13%	6%	14%	23%	16%
	<i>Variation of counterfactual saving rates with respect to each country's savings rate</i>																
US saving behavior	-51%	-6%	8%	-20%	-34%	-45%	-22%	-32%	-65%	10%	-41%	-55%	-60%	-11%	-44%	-57%	-58%
US population distribution	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
US income distribution	3%	8%	4%	1%	1%	2%	3%	0%	2%	-1%	1%	1%	1%	-1%	2%	5%	1%
Korean savings behavior	16%	31%	29%	16%	15%	22%	18%	19%	18%	37%	27%	18%	16%	20%	16%	7%	13%
Korean population distribution	-1%	-1%	-1%	-1%	-1%	0%	-1%	-1%	0%	-1%	0%	0%	0%	-1%	0%	-1%	0%
Korean income distribution	0%	0%	-11%	-2%	-6%	-1%	-2%	-5%	0%	-11%	0%	-1%	0%	-9%	0%	1%	0%

Source: Authors' compilation based on income and consumption household surveys.

Table A7. 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 distribution	13%	32%	16%	16%	9%	8%	-4%	2%	13%	13%
	<i>Variation of counterfactual saving rates with respect to each country's 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 distribution	0%	-2%	-1%	0%	-5%	-1%	-3%	-1%	-2%	0%

Source: Authors' compilation based on income and consumption household surveys.

Table A8. Age Decomposition of the Change in the National Saving Rate Due to Differences in Saving Behavior
Exercises based on micro data at the individual level

<i>Change in savings rate due to imposing US saving behavior</i>																
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Trinidad & Tobago	Uruguay
	15%	29%	22%	7%	10%	21%	11%	15%	17%	24%	24%	14%	10%	13%	2%	13%
<i>Decomposition by age bracket</i>																
less than 35 years old	6%	5%	0%	1%	4%	7%	2%	6%	3%	6%	5%	3%	2%	1%	-8%	4%
35 to 49 years old	7%	9%	9%	4%	4%	9%	5%	6%	8%	11%	11%	8%	6%	7%	4%	6%
50 to 64 years old	2%	7%	8%	1%	2%	4%	3%	1%	4%	6%	4%	3%	2%	3%	4%	3%
65 years old and more	0%	9%	6%	1%	1%	1%	0%	2%	1%	3%	3%	0%	1%	2%	2%	0%
<i>Change in savings rate due to imposing Korean saving behavior</i>																
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Trinidad & Tobago	Uruguay
	5%	22%	9%	-2%	1%	10%	3%	9%	8%	15%	15%	4%	0%	4%	-11%	-2%
<i>Decomposition by age bracket</i>																
less than 35 years old	4%	2%	-2%	-3%	2%	5%	-1%	5%	0%	0%	2%	0%	-2%	-2%	-13%	3%
35 to 49 years old	7%	8%	8%	4%	4%	9%	5%	6%	8%	11%	11%	8%	6%	7%	4%	6%
50 to 64 years old	1%	7%	7%	1%	1%	4%	3%	1%	4%	6%	4%	3%	1%	3%	4%	2%
65 years old and more	-8%	4%	-5%	-4%	-6%	-7%	-5%	-3%	-4%	-1%	-1%	-6%	-5%	-4%	-6%	-13%

Source: Authors' compilation based on income and consumption household surveys.

Table A9. Age-decomposition of the change in the national saving rate due to differences in saving behavior
Exercises based on micro data at the household level

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

Source: Authors' compilation based on income and consumption household surveys.

Table A10. Education Decomposition of the Change in the National Saving Rate Due to Differences in Saving Behavior
Exercises based on micro data at the individual level

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

Source: Authors' compilation based on income and consumption household surveys.

Table A11. Education-decomposition of the change in the national saving rate due to differences in saving behavior
Exercises based on micro data at the household level

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

Source: Authors' compilation based on income and consumption household surveys.

Table A12. Income Decomposition of the Change in the National Saving Rate Due to Differences in Saving Behavior
Exercises based on micro data at the individual level

	<i>Change in savings rate due to imposing US saving behavior</i>																
	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Panama	Paraguay	Peru	Trinidad & Tobago	Uruguay	
	-20%	2%	9%	-26%	2%	-25%	-11%	-16%	-39%	17%	-17%	-31%	-17%	-34%	-28%	-25%	
	<i>Decomposition by income bracket</i>																
1st quintile	-45%	-31%	-16%	-45%	-14%	-54%	-32%	-40%	-67%	-23%	-52%	-57%	-38%	-57%	-41%	-47%	
2nd quintile	1%	4%	3%	-1%	4%	0%	0%	1%	0%	4%	0%	-1%	2%	-1%	1%	-1%	
3th quintile	3%	5%	3%	2%	5%	3%	2%	4%	4%	7%	4%	3%	5%	3%	2%	2%	
4th quintile	6%	8%	6%	4%	5%	6%	5%	7%	7%	10%	7%	5%	7%	6%	4%	6%	
5th quintile	14%	16%	13%	14%	2%	19%	14%	13%	18%	19%	24%	18%	7%	16%	6%	16%	
	<i>Change in savings rate due to imposing Korean saving behavior</i>																
	21%	34%	29%	15%	19%	26%	20%	22%	23%	39%	31%	21%	20%	19%	12%	18%	
	<i>Decomposition by income bracket</i>																
1st quintile	-1%	4%	8%	-1%	6%	-1%	2%	0%	-2%	4%	-1%	-2%	2%	-2%	1%	-2%	
2nd quintile	2%	5%	4%	0%	5%	1%	1%	2%	1%	5%	1%	0%	3%	1%	2%	0%	
3th quintile	3%	5%	3%	1%	5%	3%	2%	4%	3%	6%	3%	2%	4%	2%	2%	2%	
4th quintile	5%	6%	4%	3%	4%	5%	4%	6%	6%	9%	6%	4%	6%	5%	3%	4%	
5th quintile	12%	14%	10%	12%	-1%	17%	11%	9%	15%	16%	22%	15%	5%	13%	3%	13%	

Source: Authors' compilation based on income and consumption household surveys.

Table A13. Income Decomposition of the Change in the National Saving Rate Due to Differences in Saving Behavior
Exercises based on micro data at the household level

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Trinidad & Tobago	Uruguay	
<i>Change in savings rate due to imposing US saving behavior</i>																		
	-51%	-6%	8%	-20%	-34%	-45%	-22%	-32%	-65%	10%	-41%	-55%	-60%	-11%	-44%	-57%	-58%	
<i>Decomposition by income bracket</i>																		
1st quintile	-73%	-38%	-158%	-41%	-53%	-73%	-42%	-56%	-91%	-29%	-74%	-59%	-84%	-35%	-67%	-69%	-79%	
2nd quintile	1%	5%	-137%	0%	3%	1%	0%	2%	0%	5%	1%	22%	0%	3%	0%	0%	-1%	
3th quintile	4%	7%	-135%	3%	6%	4%	3%	5%	5%	8%	5%	26%	3%	6%	3%	3%	3%	
4th quintile	7%	8%	-136%	5%	6%	7%	5%	7%	7%	10%	8%	28%	6%	7%	6%	4%	6%	
5th quintile	11%	13%	-127%	14%	3%	17%	13%	11%	15%	17%	21%	36%	16%	8%	14%	4%	14%	
<i>Change in savings rate due to imposing Korean saving behavior</i>																		
	16%	31%	29%	16%	15%	22%	18%	19%	18%	37%	27%	18%	16%	20%	16%	7%	13%	
<i>Decomposition by income bracket</i>																		
1st quintile	-2%	4%	8%	-1%	2%	-2%	2%	0%	-4%	4%	-3%	-3%	-4%	2%	-2%	0%	-4%	
2nd quintile	1%	5%	4%	1%	4%	2%	1%	2%	1%	5%	1%	1%	0%	3%	1%	1%	0%	
3th quintile	3%	5%	4%	2%	5%	3%	2%	4%	3%	7%	3%	3%	2%	5%	2%	2%	2%	
4th quintile	5%	6%	3%	3%	5%	5%	3%	5%	6%	8%	6%	5%	4%	6%	5%	2%	4%	
5th quintile	8%	10%	10%	11%	0%	14%	9%	7%	12%	13%	18%	11%	13%	5%	11%	1%	11%	

Source: Authors' compilation based on income and consumption household surveys.