IDB WORKING PAPER SERIES Nº IDB-WP-01483

# Wealth Inequality in Latin America

Rafael Carranza
Mauricio De Rosa
Ignacio Flores

Inter-American Development Bank

June, 2023


# Wealth Inequality in Latin America

Rafael Carranza
Mauricio De Rosa
Ignacio Flores

Inter-American Development Bank

June, 2023

Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library
Rafael Carranza
Wealth inequality in Latin America / Rafael Carranza, Mauricio De Rosa, Ignacio Flores.
p. cm. — (IDB Working Paper; 1483)
Includes bibliographical references.
1. Wealth-Latin America. 2. Distribution (Economic theory)-Latin America. 3. National income-Accounting-Latin America. I. De Rosa, Mauricio. II. Flores, Ignacio.
III. Inter-American Development Bank. Vice Presidency for Sectors and Knowledge.
IV. Title. V. Series.
IDB-WP-1483
JEL: D31 – Personal Income, Wealth; E01 – Measurement and Data on;
E22 – Investment – Capital.

http://www.iadb.org



# Wealth Inequality in Latin America*

Rafael Carranza† Mauricio De Rosa‡ Ignacio Flores§

**Abstract**

How much wealth has accumulated in the region and how is it distributed across households? Despite being widely recognized for its extreme income inequality, reliable data on wealth is scarce, partial and oftentimes contradictory, making it difficult to answer these basic questions. In this study, we estimate aggregates based on macroeconomic data, and inequality based on recently available surveys. We contrast our results with the literature, with a handful of state-of-the-art estimates from administrative sources, and with more available but extrapolated estimates from Credit Suisse and wid.world. Considering all the evidence, we distinguish reliable facts from what can only be conjectured or speculated. We find that aggregate wealth increased over two decades in four countries, now ranging close to 3.5 the national income for market value estimates and 5-6 times at book values. We also find that wealth inequality is amongst the highest in the world were it can be measured. Given data limitations, one can only speculate about aggregates in opaque countries and about inequality trends in any country in the region. Although recent research in the developed world has focused in combining data sources to better understand wealth, the region lags behind and urgently requires more and better public information.

**Key words:** wealth distribution, wealth-to-income ratios, household surveys, national accounts, Latin America.

**JEL classification:** D31, E01, E22

*We gratefully acknowledge helpful comments from Facundo Alvaredo, Luis Bauluz, Francisco H. G. Ferreira, Sergio Firpo, Salvatore Morelli, and Marc Morgan. We thank Oswaldo Mena, Joaquin Sanchez, and Matheus Proença for their outstanding research assistance. We also appreciate insightful comments and remarks from attendees of both LACIR conferences.

†INET Oxford & DSPI, University of Oxford

‡IECON-UdelaR & Paris School of Economics

§City University of New York & Paris School of Economics

# 1 Introduction

Latin America is still struggling to exit pre-history regarding wealth data. Official sources are few and scattered, and they often report contradictory estimates. The situation is perhaps worse than the one faced by researchers attempting to address income inequality in the 1980s, when ECLAC started comparing and combining data sources to study the income distribution (Altimir, 1987). Yet, somehow we are used to research organisations and think tanks producing detailed estimates on wealth aggregates, on their composition, and on their distribution for every year and every country in the region. Even if they explicitly warn about strong assumptions and extrapolations, which are urged by the same lack of data, these estimates can give the illusion of basic facts being well understood; but they are not.

In this paper, we use available sources and estimates to determine which facts we can reasonably consider as solid ground, which ones we have good reasons to conjecture, and which ones are only a matter of speculation. We group our findings in terms of our confidence in them, with boundaries between these groups clearly set by data quality and availability.

In the first set of facts, using data from National Accounts, we argue that aggregate wealth has been increasing since the early 2000s. Based on available data from national accounts and a wide array of supplementary sources, we show that wealth-to-income ratios have increased in countries such as Brazil, Chile, Mexico and Uruguay. The private wealth-to-income ratio increased from about 200% to 350% in the late 2010s in three countries when measured at market value. It reaches 500-600% at book value, i.e. including the residual value of corporations, in the two countries where such definition is available. Regression-based estimates based on available data and imputations for the rest of the region provided by wid.world indicate the same upward trend. Moreover, we show that the government sector's net worth is positive for Mexico and Uruguay and especially high in the former (100-200% of net national income), hence national wealth is significantly higher than private wealth, although public wealth has been declining in recent years. Based on International Monetary Fund data, we find that this also seems to be the case for many other Latin American countries.

We also confidently classify all countries with available distributional data as extremely unequal in terms of net wealth distributions. Evidence from several sources converges towards this conclusion. Estimates based on administrative data from Colombia, Chile and Uruguay report a top 1% ranging between 37% and 40.6%. Although there are comparability issues which we discuss, these estimates are the most reliable since they were built following state-of-the-art methods and the best data sources available in each case. The level is much higher, for instance than in western Europe and Scandinavia, with

estimates ranging 20%-30% (Blanchet and Martínez-Toledano, 2022a). It is in fact close to the United States (42%), which is a widely studied extreme case (Saez and Zucman, 2016). They also fall below South Africa (54.7%), one of the very few developing countries with sound data (Chatterjee et al., 2021). Since administrative data usually fail to describe the lower end of the distribution, particularly in cases with low tax coverage and low state capacity. To compute estimates for the bottom 50%, we use recently available household surveys for Mexico, Chile, Colombia and Uruguay, which report shares of net wealth well below 10% and close to zero in some cases, further backing the claim of extreme inequality.

In our second set, we classify conjectures that are based on indirect evidence. Concretely, we look into the distribution of capital income –for which there is region-wide evidence– to draw some conclusions on the distribution of wealth. Taking the region as a whole, extreme inequality is likely to be the rule. Based on data from De Rosa et al. (2022), we find extremely high and stable levels of total and capital income inequality. Capital income is strongly concentrated, with almost the entire population reporting having no capital income. Including imputed rents from homeownership reduces that share to around half. More generally speaking, these dynamics coupled with the absence of strong governments and stable financial institutions seem to be consistent with high wealth concentration.

In the third set, we classify topics about which one can only speculate because data is too scarce to make categorical statements. That is the case for wealth inequality trends in all countries in the region. Even if total income inequality may have fallen up to 2015, capital income inequality and top income shares did not and this points to the fact that wealth inequality might have remained stable throughout the period. Current survey-based estimates of the Gini coefficient for net wealth and estimates for wealth inequality in the postcolonial period have surprisingly similar values, suggesting a fairly stable trend in wealth inequality. While the increasing number and average wealth of Latin America's billionaires in *Forbes* could be consistent with this remark. Similarly, unofficial estimates and regression-based approaches show a consistent pattern. Overall, our findings suggest high and stable levels of wealth inequality, but based on the availability and quality of data this is only an educated guess at this point.

The absence of adequate data is by far the main reason why it is difficult to establish more clear-cut conclusions for a larger number of countries. The lack of reliable data on wealth accumulation in the region does not result from the subject being trivial or unimportant. On the contrary, wealth is intrinsically relevant as it involves economic resources and control over them. Wealth generates both effective and accrued incomes for holders, shaping the income distribution and allowing consumption smoothing when income declines, typically in the face of economic downturns or retirement (Davies and Shorrocks, 2000). As Atkinson pointed out, "wealth is important because it gives not only income (interests, dividends and rent) but also security, freedom of manoeuvre, and

economic and political power" (Atkinson, 1973, p.239). The reason why these key questions have not been properly addressed so far is rather related to the staggering absence of reliable data. Recent literature has provided ample evidence on the accumulation of wealth and its distribution across households, mostly in developed countries. The new literature comes with high standards, often providing sets of estimates for a given country, based on a variety of methods and sources that are confronted with one another (Saez and Zucman, 2016, 2022; Acciari et al., 2017; Alvaredo et al., 2018; Garbinti et al., 2021). The main improvements include a careful analysis of what happens at the very top of the distribution, as well as inequality estimates designed to be consistent with aggregate national wealth records (Piketty and Zucman, 2014; Blanco et al., 2021; Blanchet and Martínez-Toledano, 2022b), hence providing a full account of wealth dynamics, both micro and macro-economically. Such estimates are generally conditioned to the existence of rich records from administrative sources and detailed national accounts.

However, the absence of adequate estimates and data sources does not imply that none exist. There is in fact scattered information on wealth aggregates and their accumulation in the region, at least for a few countries. Mexico reports a rather comprehensive stock of wealth in their national accounting, while Brazil, Colombia and Chile report partial information, mainly covering financial assets and liabilities, which can be complemented with administrative information on real assets to estimate the aggregate volume of private wealth. In this study, we are able to build such estimates for Brazil, Chile and Mexico, which we complement with estimates from De Rosa (2022) for Uruguay. In addition, some household financial surveys have been recently implemented in Chile (2007-2017), Colombia (2010-2018), Mexico (2019) and Uruguay (2013). We harmonise them to build a comprehensive set of survey-based descriptive statistics with a focus on the middle and bottom parts of the distribution. We also identify three recent studies using administrative data in the region, providing a sound benchmark of wealth concentration to compare with other –more commonly available– data sources for Chile (Hacienda, Ministerio de, 2022) Colombia (Londoño-Vélez and Ávila-Mahecha, 2021) and Uruguay (De Rosa, 2022). Moreover, capital income distribution estimates based on corrected household surveys for the whole region are used to probe on the evolution of wealth inequality for a large number of countries. The last data type we use in this study are global estimates, which include wid.world, Credit Suisse's annual wealth reports, historical estimates for the Latin American postcolonial period, and the *Forbes* magazine, which regularly inform on the top wealth shares, Gini coefficients and the number of billionaires, including an increasing number of Latin American countries.

This paper is organised as follows. Section 2 discusses wealth aggregates in the region. Section 3 briefly describes and classifies available methods and data sets to estimate the wealth distribution. Section 4 uses such classification to assess our knowledge on

estimates based on household wealth surveys and administrative data. Section 5 discusses to what extent can we say anything about wealth inequality trends based on capital incomes distribution, the *Forbes* billionaires list and historical data. Finally, Section 6 summarises our findings and discusses ideas for future research and the way forward to improve precision and accuracy in wealth estimates.

# 2 Wealth aggregates

Before studying the distribution of wealth, we first need to assess how much there is to distribute. Ideally we should aim for sources considering a country's economy as a whole, avoiding partial estimates. To our knowledge, this is the first attempt to build such estimates at a regional scale. The section starts by setting basic definitions, before addressing the main practical issues of our estimates and presenting results.

## 2.1 Background and definitions

Following definitions from national accounts, net wealth is the difference between total assets, i.e., both financial and non-financial, and liabilities. Financial assets comprise categories such as savings, insurance and pensions funds, or equity and bonds, accounting for the value of corporations. The main categories of non-financial assets are real estate, business assets and other non-financial assets such as luxury goods or the assets of unincorporated businesses.

For a given point in time $t$, national net wealth $W_{nt}$ is defined as the sum of net wealth held by the private sector $W_{pt}$, including both households and non-profits, and the net wealth of the public sector $W_{gt}$ (Piketty and Zucman, 2015; WIL, 2021). It is also equivalent to the sum of domestic capital $K_t$ and net foreign assets $NFA_t$, as depicted in equation 1.

$$W_{nt} = W_{pt} + W_{gt} = K_t + NFA_t \tag{1}$$

It is interesting to note that, since all national financial assets and liabilities must cancel out by definition (including the property of corporations), national wealth $W_{nt}$ is equivalent to the sum of national non-financial assets $K_t$, which are held by the household, corporate and government sectors, plus the net foreign asset position. If we were reasoning in a closed economy –or at the world level– total wealth would simply be equal to the sum of non-financial assets, since total financial assets and liabilities would cancel each other out.

A crucial point in the definition of wealth is valuation, which has two approaches: market and book values. The market value of corporations is their market price. In practice, such prices can be directly observed in some markets that are very liquid, thanks to stock

valuation, or they can be indirectly estimated for less frequently traded equity. The book value is in turn the difference between corporate assets at their cost of replacement and non-equity liabilities. The difference between market and book values is what is called the "residual value of corporations", and the ratio of market to book value is Tobins' Q, which is often –but not always– lower than one (WIL, 2021). It is called residual value because corporations are ultimately held by other sectors, i.e., the government, the rest of the world or households, so the net value could be expected to be zero. If it is not, that is a sign of a difference between valuation in the markets and the firms' books ($Q \neq 1$). Measurement issues can certainly be responsible for this gap, but also economic factors such as the liquidity of assets, productivity levels and expectations. When Q is below unity, the price of the firms' stock is lower than their replacement cost. Ideally, both book and market valuations should be portrayed.

Aggregate estimates of wealth should ideally be provided by public institutions such as central banks or national statistical offices, along with the rest of the national accounts, but it is only recently that they have become available mostly for developed countries. After being neglected for decades, interest on wealth aggregates came back to the spotlight based on these newly available data sources, mainly national accounts' balance sheets. Significant progress has been made in recent years, starting with Piketty and Zucman (2014), who estimate the wealth to income ratio for a set of rich countries, including the United States, the United Kingdom, France, Australia, Canada, Italy, Germany and Japan, which were later updated by Bauluz (2019). They document an increase in the wealth to income ratios at market values since the 1970s, from 200-300% to 400-600% in the 2010s. Along this line, Waldenström (2017) studies the Swedish case, Blanco et al. (2021) estimate the wealth to income ratio for Spain since 1900, Baselgia and Martínez (2021) estimate the private wealth to income ratio in Switzerland, and Novokmet et al. (2018) study the case of Russia since the fall of the Soviet Union. Piketty et al. (2019) estimate an increase in the wealth-to-income ratio for China going from 350% in 1978 to 700% in 2015, while Chatterjee et al. (2020) present estimates for South Africa, with wealth-to-income ratios of 250-300%. Kumar (2019) estimate the wealth-to-income ratio in India from 1860 to 2012, reaching a level of 600% in the last decade.

Overall, we see a pattern of large wealth-to-income ratios across the world, as well as an increase in these ratios among countries with data on trends.

## 2.2 Data and estimation methods

In theory, our estimates of aggregate wealth follow the same definitions described in the above sub-section. In practice, we distinguish three different approaches in their construction. The first and most simple is Mexico. The country's national balance sheets are produced on a yearly basis by the National Institute of Statistics and Geography

(INEGI for its Spanish acronym). They include information on the aggregate value of private liabilities and both aggregate financial and non-financial assets over close to two decades (2003-2021).[1] We simply add them without any need for adjustments to compute national wealth aggregates for the whole period.

The second case is a bit more challenging, it comprises Brazil and Chile. Each country's Central Bank produces reliable financial balance sheets, including detailed information on both financial assets and liabilities, which is a solid source. However, non-financial assets are never reported. In both cases, we use a combination of external sources to cover the lack of official data. In Chile, the adjustment involves the estimation of three sub-components of non-financial wealth: the market value of housing assets, agricultural assets and unincorporated business assets. Housing assets are extended from Flores et al. (2018), which provides estimates of total market valuation based on the method of hedonic prices for 2012-2017, the underlying datasets are exhaustive cadastral records on national housing stock and the national registry of yearly transactions on the housing market, which is recorder for taxing purposes. The series was extended to 2020 by Flores and Gutierrez (2021) using a combination of administrative construction permits from the ministry of planning and urbanism and the Central Bank's housing price index (IPV for its Spanish acronym). The value of agricultural properties is obtained by multiplying the fiscal valuation by Chilean tax authorities, which is reported in their website, adjusted by the same ratio of fiscal-to-market prices in the housing sector. Unincorporated business assets are obtained from the Chilean financial survey, yet they only marginally contribute to aggregate wealth (for more details see Flores and Gutierrez, 2021).

In Brazil, we take another approach to solve the same problem, distinguishing two sub-components of non-financial assets: housing and other non-financial assets. We start with an anchor-estimate on housing stock valuation for 1999, from Reiff et al. (2005), which we then extend to the future. This study also uses the hedonic prices method, but based on Census data instead of cadastral data to cover the national housing stock and its characteristics. Market values are derived from the National Household Surveys (PNADs for its acronym in portuguese), assuming a stable relation between the value of rents and the price of housing. To extend estimates until 2019 we apply an annual growth rate to the benchmark, it is defined as follows:

$$W_t^h = \frac{Q_t}{Q_{t-1}} * \frac{P_t}{P_{t-1}} \tag{2}$$

Where $W_t^h$ is the value of housing wealth in year t, $Q_t$ is the quantity of dwellings in year t, $Q_{t-1}$ is the quantity of dwellings in year t-1, $P_t$ is the nominal house price index in

[1] In this paper, we only cover the period up to 2019.

year t, and $P_{t-1}$, is the nominal house price index in year t-1. The quantity of dwellings comes from the number of permanent dwellings reported in PNAD survey from 1999 to 2015 and the PNAD Continua from 2016-2018, For years when the survey was not run (2000, 2010). Data for the house price index is sourced from the Bank of International Settlements (BIS), detailed nominal residential property price indices for 2001-2018. We extend this series backwards using growth rates of the FIPE-ZAP index.

The last and most difficult case is Uruguay, given the absence of balance sheets (except for the government sector), the wealth to income ratio was estimated in an another study, by combining a variety of sources, namely cadastral administrative data, firm's tax records, household wealth survey and the International Investment Position from the Balance of Payments (for a full description, see De Rosa, 2022). These sources are used to estimate aggregate domestic capital $K_t$, i.e. the sum of all non-financial assets of the economy, which results mainly from aggregating cadaster value of urban and rural properties (adjusted to market prices) of the private sector, the book value of corporations computed based on firms tax records, and adding the government's non financial assets and the $NFA_t$, following equation 1. An array of supplementary sources are then used to provide a relatively detailed decomposition of this aggregate.

These data allow us to compute estimates of wealth at market values for Brazil, Chile and Mexico; and at book values for Mexico and Uruguay. In all cases, we stress that they should be considered as preliminary and would greatly benefit from further scrutiny and debate.

## 2.3 Aggregate wealth

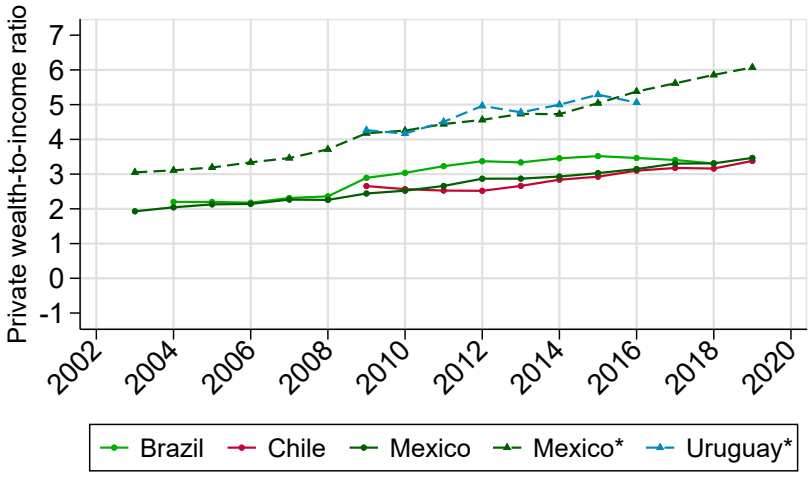
The key reference to study the wealth distribution across households is aggregate private wealth. Figure 1 presents our main estimates at market values for Brazil, Chile and Mexico; and at book values for Mexico and Uruguay. Regardless of the valuation method, we find an upward trend in all cases, reflecting an increase in aggregate wealth with respect to income. Being a ratio, this trend could be explained by a reduction in the denominator, i.e. the national income, which slowed down and even fell for some countries after the commodity boom of 2003-2013. However, this is only the case for Brazil after 2014, as can be seen in figure A.1, which shows rather steady upward trends in real average wealth too.[2]

Regarding levels, wealth to income ratios at market values increased from 200% of net

[2]The distribution of national wealth, which is the sum of private and public wealth $W_{gt}$, requires strong assumptions on how to allocate public wealth and liabilities, which is a considerably less consensual topic. Since public wealth is generally relatively close to zero in developed countries, this distinction has not played an important role in distributional or aggregate estimates' discussion in the literature (see e.g. (Piketty and Zucman, 2014)).

national income to over 300% in Brazil and Mexico between 2003 and 2019. In Chile estimates begin later –in 2009– close to 250% gaining close to 100% in ten years. Our estimates follow the same definitions than those from Bauluz (2019), which locates most developed countries in the 500-700% zone. Despite their steep increase in the last decades, Latin American countries seem to be the lower end of the spectrum.

**Figure 1:** Private net wealth over net national income




***Notes.*** Solid lines correspond to estimates at market value, while dashed lines, marked with (*) in the legend, indicate a book values.

Financial net wealth is most important in Chile, reaching 100-150% of net national income over the period (see figure A.2). That is close to half of the country's total private wealth. Mexico and Brazil estimates are lower, reaching close to 100% only in the most recent years, starting with even lower values at the beginning of the period. In the case of Brazil, the increase of financial wealth occurs in parallel with a decrease in total net wealth, implying that the overall trend has to be driven by non-financial assets. In the same figure we find Colombia, a country that does not report information on non-financial assets, but has the longest time series on financial assets and liabilities. Net financial assets are extremely low between 1996-2015, only matching the levels of Mexico and Brazil in the late 2010s. Unless Colombia's non-financial assets are much higher than the rest of the countries, it is likely that Colombian total private wealth is lower than in Brazil, Chile and Mexico.

When the book value definition is considered, estimates are much higher, as depicted in Figure 1. Mexico, which is the only country with both book and market value estimates, reports a massive difference close to 250%. In Uruguay, for which only book values are available, private wealth-to-income ratio increase from over 400% to about 500% in the

2009-2016 period. The Mexican increase, from 300% to 600% in fifteen years, is also rather spectacular.[3] Unfortunately, no other country than Mexico allows comparisons of book and market values, casting doubts on whether the Mexican large gaps should be considered as representative of the region or as an extreme case. However, it is a very informative case given Mexico's relevant size and role in the region, but also due to the fact that is the only country with full official estimates, which we consider to be more reliable. The implied Tobin's Q is quite low, in the 0.6-0.7 range, close to the developed countries' estimates around the 1970s, which are in turn now close to one or even higher (except for Germany, where it remained low) (Piketty and Zucman, 2014). Mexico's low Tobin's Q, and the similarly high Uruguay's book value private wealth-to-income ratio, suggest particularly wide gaps between valuation methods, which deserves further investigation. From this article's more limited viewpoint, it is enough to stress that both definitions are relevant and probably imply very different levels from one another.

As a comparison, Figure A.3 depicts wid.world estimates for the entire region at market prices, which are based on official estimates when these are available. To fill in the blanks, which is the case of almost all items in all countries in the region, they use machine learning algorithms that are trained with information on countries with complete balance sheets, and some information on income flows too (Bauluz et al., 2021). While these estimates are not meant to provide exact estimates for every individual country but rather to approximate estimates of global wealth, they do provide an interesting reference point. They also report an upward trend, although in some cases with surprisingly low values, such as the cases of Colombia, El Salvador or Dominican Republic, for which it is difficult to make assertive statements. Naturally, these estimates show close to identical series for Brazil and Mexico since they were built using the same methods.

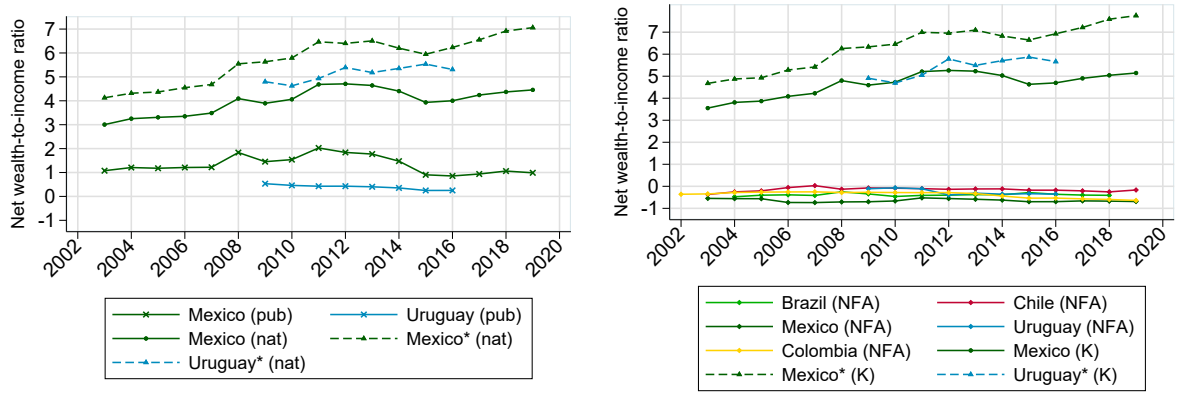
As shown in equation 1, the sum of private and public wealth results in national wealth, which is also a relevant aggregate. In Figure 2 we show the remaining components of the equation. Both national and public wealth are depicted in panel 2a for Uruguay and Mexico, which are the only countries that allow such comparison. Again, Mexico allows for the comparison of both book and market values.

Although public wealth falls in both countries during the second half of the period, it remains positive overall. It stays at particularly high levels in the case of Mexico, were it reaches 100-200%. This contrasts with rich countries, where public wealth decreases dramatically since the 1970s, with values close to zero or even negative in recent years (Piketty and Zucman, 2014). In both cases, national wealth is higher than private wealth, regardless of the valuation method. The fact that national wealth increases, despite a fall in public wealth, shows that the overall trend is mainly driven by the dynamics of private

[3] While wealth to income ratios are similar between the two countries in the period they overlap, wealth per capita is a bit less than double in Uruguay (see Figure A.1)

wealth, although the downturn in public wealth had an visible effect in Mexico during the 2011-2016 period.

**Figure 2:** National wealth's components




**(a)** Public and National Wealth **(b)** Dom. Cap. and Net Foreign Asset Position

***Notes.*** Series with (*) indicate book value net wealth.

Panel 2b presents the decomposition of national wealth into its Domestic Capital and Net Foreign Asset Position components when available. $NFA$ is close to zero or negative in all cases, reaching values under 50% of national income in countries such as Colombia or Mexico, meaning that residents of foreign countries own more assets in a given country than what its residents hold abroad. This is not surprising considering the dependent and peripheral nature of Latin American economies. Domestic capital, i.e. aggregate non-financial assets of the economy, are therefore higher than national wealth, which is clear for both Mexico and Uruguay, and should be the case for other countries too. This raises questions about the pertinence of concepts such as national wealth and national income, that are benchmark in developed countries with positive net foreign asset positions, in the context of developing economies, which might draw more insightful conclusions by studying domestic wealth and domestic income.

The International Monetary Fund reports data on both public wealth and the net foreign asset position of some countries. In the case of the general government's wealth, time series are also available for Brazil, Colombia, El Salvador and Peru since 2006, as a percentage of the GDP. The general government falls in all cases, especially since the beginning of the 2010s decade. In Colombia, it falls from 100 to 50% of the GDP, in Peru from a peak of 250% to 150%, and in Brazil from a maximum of 19% (which it reached in 2011 from a -50% in 2006) to -62% in 2017. El Salvador does not present this downward trend, but does have a constant negative share under -35%. As for the countries net position, except for cases such as Argentina and Venezuela, all the remaining countries in the region present negative values.

# 3 Distributional estimates: methods and challenges

Building estimates on wealth inequality is a challenging process. Direct measurements are hardly available, thus estimates are rather constructed using a combination of data sources and assumptions. Sources range from household surveys to rich lists, including administrative records on land ownership, estate taxes, data on investment income, portfolio composition, among others. Most of them differ in key aspects that difficult comparisons. This section, explores both theoretical and practical challenges of measuring wealth inequality.

## 3.1 Theoretical considerations

We begin by exploring the main methodological aspects behind a wealth inequality estimate. Following Cowell and Van Kerm (2015), these include the nature of wealth, measurement issues and the empirical implementation of the metric.[4] Together, these three aspects describe the complete process for the construction of the estimate, from the data all the way to the estimate itself, asking in the process what (or whether there is) a 'correct' measure of wealth and what are the appropriate methods to analyse its distribution. While in our case the answers to these questions are more likely to be empirically driven – i.e., determined by data availability – it is nonetheless important to have them in mind when describing and interpreting our results.

The first point is the nature of wealth, which includes questions such as the 'right' measure of wealth, asking for instance whether we should look at gross or net wealth. The distinction of national and domestic wealth is also important, i.e., where the words 'domestic' and 'national' have the same meaning than in Gross Domestic Product (GDP) and Net National Income (NNI). The former being more adapted to cases where residents own a considerable volume of assets abroad, while the latter is more adapted to countries where a big share of domestic wealth is owned by foreigners. Another question is whether we should focus on households as opposed to individuals. Households account for economies of scale and dependency, but ignore within-households inequality, while individual-based analyses do the opposite. The types of assets to be included and their valuation matter too. For instance, Roine and Waldenström (2015) indicate that wealth may or may not include durable goods and more importantly, pensions (i.e. *augmented* wealth), which can make a big difference. In this aspect, the distributional literature has converged to count assets that can potentially be liquidated by individuals at will, which does not include mandatory

[4]This is not the only way to characterise a wealth inequality estimate. For example, Jenkins (1990) looks at the definition of wealth, the wealth-holding unit, the time period and the measure of inequality. Moreover, Alvaredo et al. (2018) highlight the role of the valuation method (book or market value), as well as the geographical scope of the estimate. However, we believe this to be a sufficiently encompassing framework for the purpose of our analysis.

pensions. Another critical distinction, for example, is whether we treat wealth as future consumption or as a proxy of socioeconomic status or political power.

Overall, surveys will be the most flexible input when studying wealth, typically allowing for multiple definitions and units of observation at the cost of partial observability. Household surveys suffer from higher rates of non-response at the top, downward biasing inequality estimates (i.e., what Lustig (2019) calls the 'missing rich problem' when studying income). This is particularly true for the case of wealth, as surveys will not capture highly detailed information on financial assets which represent a higher share of total wealth at the top (Vermeulen, 2018; Kennickell, 2019). Administrative data, whether tax records or other sources, suffer from the opposite problem as they tend to do a good job at capturing the top of the distribution but only for a very specific and rigid outcome such as taxable income or estate valuation among tax units. Overall, an ideal measure of wealth should include a combination of both, such as household surveys that have been adjusted using tax records (see, e.g., Bajard et al. (2021)).

Second, we need to look into the measurement issues that arise when estimating wealth inequality. A few well-known issues restrict us from studying wealth inequality as we would income or consumption inequality, namely the presence of negative net worth and the sparseness due to very extreme values at the right tail of the distribution. These features restrict the use of some relative measures of inequality and influence the statistical inference for those measures that can be used –although some corrections have been proposed, e.g. Raffinetti et al. (2015). An example of the latter is the problem of sparseness when measuring income shares among the very top of the distribution, say the top 0.1% or 0.01%. Measuring those shares using survey data would inevitably result in highly volatile estimates, as this will be a very small group (Taleb and Douady, 2015). Similarly, the choice of unit will ultimately depend on data availability, with surveys including household-level information while administrative records will vary depending on the legislative context. Despite these issues, there is still a large number of measures available, both for ranking distributions such as the quantile function or Lorenz curve as well as for summarising distributions such as the Gini or the coefficient of variation.

The third and last point considers the empirical implementation of a wealth inequality measure. Distributions can be assessed directly by looking at observations from household surveys or other sources, or indirectly by using a parametric model so that we can 'fit' our data through a functional form. This third point is of lesser interest to us, as it will be mostly dictated by the available data and the adjustment methods allowed by it. As we discuss below, depending on the data and measure of inequality, methods could go from a simple descriptive statistic —say, the top 1% share of wealth using administrative records-– to complex methods that rely on regression or machine leaning-based predictions when there is no data available for that specific country-year, as is the case for both Credit

Suisse and the World Inequality Lab's estimates.

## 3.2 Main sources and methods

The Latin American region is highly heterogeneous in terms of data sources on wealth distributions. Most countries do not have any type of data, while other countries have multiple sources which can be then assessed and compared. In turn, the type of available data shapes what methods can be used and ultimately what can we say about wealth inequality for any given country at any given point in time. Table 1 describes the main data sources currently available for Latin America.

**Table 1:** Wealth data availability, based on source and wealth concept

| Country | HH survey | Wealth tax | Census | Rich lists | Estate tax | Income |
|---|---|---|---|---|---|---|
| Antigua and B. | | | | | | |
| Argentina | | | | X | | |
| Bahamas | | | | X | | |
| Barbados | | | | X | | |
| Belize | | | | | | |
| Bolivia | | | | | | |
| Brazil | | | | X | X | X |
| Chile | X | X(*) | | X | X | X |
| Colombia | X | X | | X | | X |
| Costa Rica | | | | | | X |
| Cuba | | | | | | |
| Dominica | | | | | | |
| Dominican Rep. | | | | X | | X |
| Ecuador | | | | X | | X |
| El Salvador | | | | | | X |
| Grenada | | | | | | |
| Guatemala | | | | X | | |
| Guyana | | | | | | |
| Haiti | | | | | | |
| Honduras | | | | | | |
| Jamaica | | | | | | |
| Mexico | X | | | X | X | X |
| Nicaragua | | | | | | |
| Panama | | | | | | |
| Paraguay | | | | | | |
| Peru | | | | X | | X |
| Saint Kitts & N. | | | | | | |
| Saint Lucia | | | | | | |
| St. Vincent & G. | | | | | | |
| Suriname | | | | | | |
| Trinidad and T. | | | | | | |
| Uruguay | X | X | | | X(*) | X |
| Venezuela | | | | | | |

***Note***: Rich lists by *Forbes* up to 2017. Income data refers to countries for which, on top of household surveys, tax data of capital incomes is available. (*) Indicates the tax does not exist in the country but a data-set with analogous information is available.

Wealth household surveys represent a direct way to observe wealth owned by sampling households or individuals, but present the usual difficulties in adequately capturing top wealth holders (Vermeulen, 2018; Kennickell, 2019). As shown in Table 1, only four countries in the region have carried out household wealth surveys at some point in time. These are the same four wealth surveys used in a recently published study by Gandelman

and Lluberas (2023), which includes Chile, Colombia, Mexico and Uruguay. The Chilean *Encuesta Financiera de Hogares* (EFH) is carried out by the Central Bank of Chile and uses multiple imputation for the main variables. It is representative of all urban households in the country. Colombia carries out the *Encuesta de Carga Financiera y Educación Financiera de los Hogares* (IEFIC) which also includes information on financial education and is jointly carried out by the Central Bank of Colombia and their National Statistics Institute (DANE). It does not include multiple imputation and it is representative of asset holders in Bogotá, and from 2017 onwards it also includes Cali and Medellín. Mexico has the *Encuesta Nacional sobre las Finanzas de los Hogares* (ENFIH), carried out by their National Statistics Institute (INEGI), the only nationally representative survey of the four. Lastly, Uruguay has the *Encuesta Financiera de los Hogares Uruguayos* (EFHU), comissioned by their Central Bank and other government agencies in association with the *Universidad de la República*. It is representative of cities with over 20.000 inhabitants in Uruguay and uses multiple imputation for the main variables. Out of the four countries, only two have data for more than one year, Chile and Colombia.[5]

Wealth tax data, typically put together by tax authorities, is a good source of information on the very rich, but it is not exempt of problems, as it is subject to the usual evasion and avoidance caveats, as well as non-coverage of certain assets, which can vary across countries. In the case of Colombia, we use an estimate from Londoño-Vélez and Ávila-Mahecha (2021). They mainly use rich Colombian administrative records to study the feasibility of wealth taxation in developing countries. Among their findings, they produce the top 1% share for the year 2014, reaching over 40%. Although the article includes alternative estimates that adjust for assets held offshore, we preferred to use those without such a correction to increase comparability across countries. In the case of Chile, a country without a wealth tax but where analogous data has recently become available, we combine the work of Hacienda, Ministerio de (2022), with estimates from Flores and Gutierrez (2021). The former is a study mandated by the Ministry of Economics (*Ministerio de Hacienda* in Spanish) in the context of a study for a potential wealth tax. It is based on the direct observation of asset ownership valued at market prices through a series of administrative data sources. From it, we take the distribution of wealth at the very top, serving to compute the numerator of our benchmark top share. While the latter study serves as a denominator, produced in the context of a first comprehensive assessment of Chilean wealth aggregates, with the same methods described in section 2.

Similarly, data on capital income can be combined with the rate of return of different assets to construct the distribution of wealth using the 'capitalisation method'. It has gained notoriety lately after the wealth distribution study for the United States by Saez

[5]Technically, the Uruguayan survey has three survey waves, 2012, 2013 and 2017. But only the 2013 wave includes detailed information on household assets and liabilities.

**Table 2:** Summary of empirical methods and data sources

| Type of estimate | Sources/Methods | Advantages | Caveats |
|---|---|---|---|
| Direct sources | Wealth tax statistics | Accurate when describing the right tail | Only covers taxable population, only exists in countries having a wealth tax, difficult to access |
| | Wealth survey statistics | Samples the whole population | Inaccurate in picturing both tails, only available in a few countries |
| | Census data | Full population coverage | Mostly available for historical estimates, subject to some territorial biases and sometimes limited asset coverage |
| | Rich lists | Good time and country coverage | Only covers a handful of households, units of observation may vary, liabilities are badly captured |
| Indirect methods | Capitalization | Good accuracy in describing the whole population | Requires access to detailed classified information. Sensitive to assumptions on the distribution of rates of return |
| | Estate multiplier | Long time coverage good overall accuracy | Migh be sensitive to assumptions on mortality rates. Sensitive to extreme cases. |
| Regression based-estimates | Regression-based or machine learning | Full country coverage and good time coverage | Hard to draw conclusions at the country level |

***Note:*** Own elaboration.

and Zucman (2016), although the method was originally proposed by Robert Giffen in 1913 and famously applied for instance for the United Kingdom by Atkinson and Harrison (1978). Since then, a number of studies for European countries emerged (e.g. Garbinti et al. (2021); Martínez-Toledano (2017)). The method relies on sufficiently detailed capital income distribution (usually based on tax returns) and estimates the underlying wealth distribution by multiplying them by their capitalization factors, i.e. the inverse of assets macro rates of return (WIL, 2021). This analysis relies on estimates of the country's balance sheets. One of the main caveats is that it assumes identical rates of return for all individuals, which is shown not to be true and to bias concentration estimates upwards, as is the case in new estimates for the United States (Smith et al., 2021). Wealth inequality studies that rely on the capitalization method are subject to stronger assumptions than the remaining sources but allow for the estimation of wealth aggregates and their distribution when these sources are not available.

For Uruguay, our benchmark estimates come from De Rosa (2022), which estimates wealth inequality based on a variety of sources and methods, including administrative sources. Our preferred series result from applying the capitalization method to detailed capital incomes microdata, mainly drawn from matched individual-firms' tax records, yielding a top 1% of 38-40% and a top 10% of 77-79% for the 2009-2016 period.

## 3.3 Supplementary data sources

Rich lists, such as those compiled by *Forbes* or *Sunday Times* in the United States and the United Kingdom, respectively, rely on journalistic monitoring of the owners of great fortunes (Dolan, 2012). However, they capture –at best– top wealth tails and do not

provide information on the rest of the distribution. Moreover, the unit of analysis is not well defined, as they could report individuals or families, as well as assets within national borders or not. These data sources provide useful information when complemented with other sources, for example by adjusting surveys to account for higher non-response rates at the top of the distribution (see, e.g., Lustig (2019) for corrections to survey income). Both WID and Credit Suisse use a combination of data sources in their estimates of global wealth inequality (WIL, 2021; Shorrocks et al., 2021), including surveys, tax records, rich lists, among others. Similarly, rich lists have been used, for example, to estimate top shares of total wealth (Kopczuk and Saez, 2004) or to make adjustments to the estimates from the surveys of wealth (Vermeulen, 2018).

Another family of methods can be grouped under the term 'regression-based estimates'. These are methods that either intra- or extrapolated data from different sources (be it different outcomes, countries or years) to predict wealth inequality series for countries with scarce or no data. This family of methods relies on multiple information sources such as National Accounts, household surveys, administrative records or readily available estimates such as the ones provided by WID. Davies et al. (2011) use National Accounts, wealth surveys and secondary sources of a sample of (mostly) developed countries to fit a model that allows them to estimate the level of wealth inequality in the remaining countries. These estimates are updated and improved in Credit Suisse's reports from 2010 to 2021 (see last available Shorrocks et al. (2021), more on this below). More recently, similar estimates have become available from the World Inequality Database (Bauluz et al., 2021; Bajard et al., 2021), which mainly differ from Davies et al. (2011) in that they use data on income distributions as an input for their estimates. By construction, regression-based methods are the most flexible approach as they accommodate to whatever data is available. For that exact reason, it is also the most heterogeneous approach. As such, making inferences based on these estimates of wealth inequality require a detailed review of the steps taken on a case-by-case basis, as well as robustness checks to assess the role of these steps.

The final category is information from estate taxes, which exists in many countries over long periods of time, but is extremely difficult to access at present. The estate multiplier method has been perhaps the most commonly used method for studying wealth distribution, especially in a historical perspective (Piketty et al., 2006; Alvaredo et al., 2017; Kopczuk, 2015). It is based on estate tax data, which is a way to observe the wealth of individuals at the moment of death and is therefore considered a non-random sample of the entire population. For that reason it is weighted by the inverse of individual's mortality rate, hence providing a personal wealth distribution of the living population (Piketty and Zucman, 2015). Its basic inputs are estate tax records, individual mortality rates, as well as population and wealth control totals, to account for the wealth of individuals below the

estate tax threshold. It has been recently suggested that average mortality rates may be applied without biasing estimates, hence unlocking the use of inheritance tabulations with little information on decedents' characteristics (Berman and Morelli, 2021). As an example of the use of these sources and methodologies in a Latin American country, De Rosa (2022) presents estimates based on the wealth household survey for the totality of assets, and also real estate wealth distribution based on the estate multiplier method and the wealth tax, which are compared with the main capitalization method's results. While the wealth tax depicts similar top 0.1% real estate estimates than the capitalization method, both the wealth survey and the estate multiplier method result in lower top 0.1% share, but higher top 10 and top 1% shares. This is an indication that, at least in Uruguay's context, the capitalization method's real estate inequality estimates are likely to be a lower bound, except for the very top of the distribution.

# 4 Making sense of inequality estimates

This section explores wealth inequality estimates in Latin America. We group our results in estimates for the top of the distribution, followed by evidence from the middle and bottom, and finally by regression-based estimates.

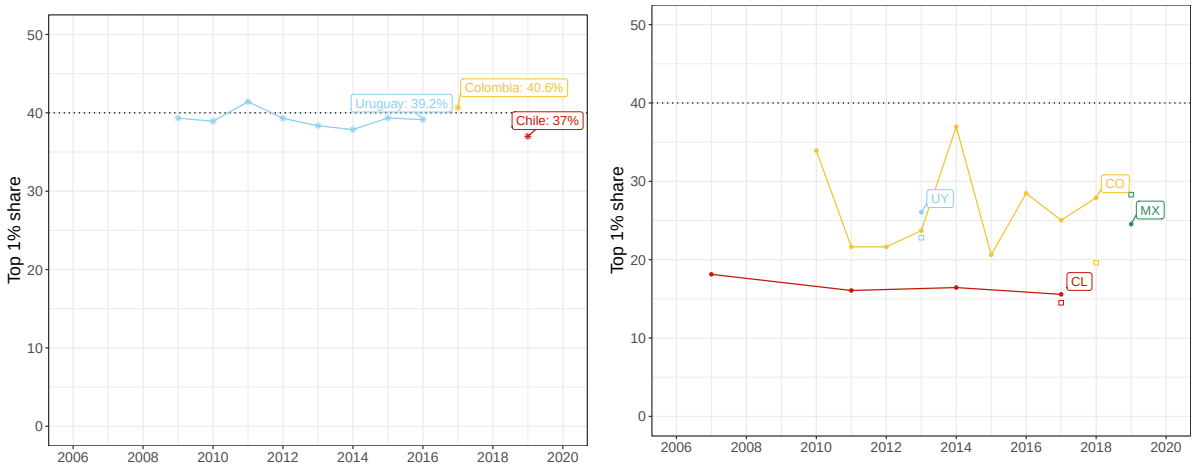
## 4.1 Evidence from the top of the distribution

Panel (a) in Figure 3 summarises the top 1% shares from many different sources in the three countries with the most comprehensive wealth estimates in the region, Chile, Colombia and Uruguay. Panel (b) complements these estimates with survey-based estimates for the four countries for which there are wealth surveys, Chile, Colombia, Mexico and Uruguay. Finally, panel (c) reports regression-based estimates by WID and Credit Suisse.

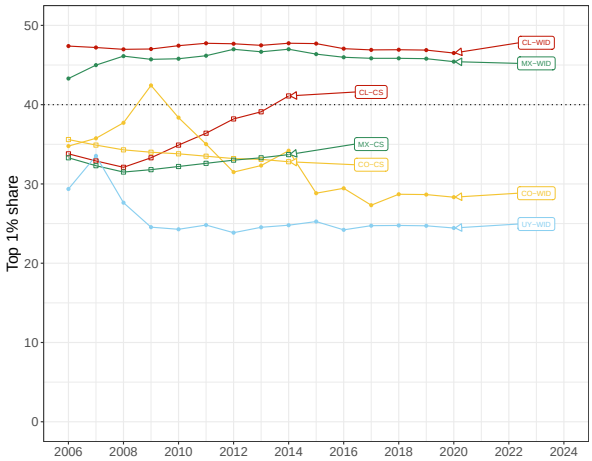
We opted for the top 1% share to allow for comparability, as some of the studies only provide estimates for that particular group. Our benchmark estimates are based on administrative data, drawn from studies that very recently gained access to confidential data directly reporting asset holdings at the individual level, or data that reports a comprehensive decomposition of incomes, allowing for the use of the capitalisation method described in section 3. Individual estimates for these countries are surprisingly close, ranging between 37% for Chile and just above 40% for Colombia.

It is important to stress that, while all three are based on administrative data and thus represent, in our view, the most reliable estimates for the top wealth shares, they are not strictly comparable. While estimates for Colombia and Chile are based on the direct observation of ownership through administrative data sets, Uruguay's are based on capital income tax data, capitalised to recover the underlying wealth. Nonetheless, one

**Figure 3:** Top 1% Wealth shares in different sources




**(a)** Benchmark (administrative data) **(b)** Survey data




**(c)** Global estimates

***Notes.*** Own elaboration based on selected articles, survey data, wid.world and Credit Suisse. Panel a) estimates at market values for Colombia and Chile, and book values for Uruguay. Panel b) filled markers are own estimates and hollow markers are from Gandelman and Lluberas (2023). Both our survey-based estimates and those in Gandelman and Lluberas (2023) show the top 1% for household wealth, as opposed to individual wealth in panels (a) and (c).

should expect them to coincide provided (i) the same evasion and avoidance behaviour in income and wealth taxes, and (ii) a small overestimation of wealth concentration in the capitalization method as a result of wealth-correlated rates of return.

Estimates for Chile might be undervalued as the denominator includes assets held by the non-profit sector that are not accounted for in the numerator, which is also the case for part of the pension funds. It is however difficult to know the true extent of the underestimation or whether the total value of unincorporated businesses is being underestimated, given

that the Central Bank does not provide relevant information. Uruguayan estimates are the only ones to value firms at book value, as opposed to market values. If Uruguayan Tobin´s Q was below 1 –which we consider likely, but we cannot measure– top shares would be lower in market prices.

Moreover, total wealth in Chile and Uruguay, i.e., the denominator of top shares, is the aggregate private wealth presented in section 2, which mainly based on macroeconomic data. While in Colombia, the estimate is directly taken from Londoño-Vélez and Ávila-Mahecha (2021), who add wealth recorded in tax records for tax-filers to part of the wealth declared in household survey data, which likely underestimates aggregate wealth.

From panel (b) in Figure 3 we see that survey-based estimates underestimate the level of wealth concentration at the top when compared with their administrative counterparts. Probably due to the low coverage of financial assets (figure A.5), estimates of the top 1% share are between 15% and 30%, substantially below the 40% share shown when using administrative records. When compared to estimates using administrative records we see that Chile underestimates wealth concentration at the top more than any other country, with estimates around 15%. Colombia shows a large degree of variability, with most years well below the 40% obtained by Londoño-Vélez and Ávila-Mahecha (2021), while Uruguay shows a top 1% of 25%, above that of Chile but still below the 39.2% estimated by De Rosa (2022).

## 4.2 Evidence from the middle and bottom of the distribution

Household wealth surveys capture information on assets and liabilities across the population of a given country. They are used to study average wealth and its concentration, as well as the levels and distribution of specific assets such as mortgage debt or ownership of savings accounts. Through the interaction between assets, liabilities and income, it is also possible to study topics such as financial vulnerability. In contrast with administrative data, and to the extent that the sampling allows it, surveys are also flexible enough to study wealth dynamics by socio-demographic groups or across regions. These surveys provide a useful tool in the study of the causes and consequences of wealth concentration.

Despite their usefulness, or perhaps due to it, conducting wealth surveys is a challenging endeavour. In addition to the issues present in income surveys, there are three measurement issues specific to wealth surveys (OECD, 2013). First, wealth surveys are more likely to suffer from non-response and under-reporting than income surveys. Individuals with little to no wealth have little interest in participating in these surveys, while wealthy respondents are harder to contact. Second, data issues in wealth surveys are more salient than in income surveys, particularly under-reporting and misreporting of assets and liabilities due to difficulties in recalling, unclear questions, and unwillingness to consult records, among

other reasons. Lastly, privacy concerns, particularly the possibility of identification can result in lower response rates among wealthy respondents. These challenges partly explain why few countries in the region have conducted these surveys, and why they underestimate total net wealth (figure A.5).

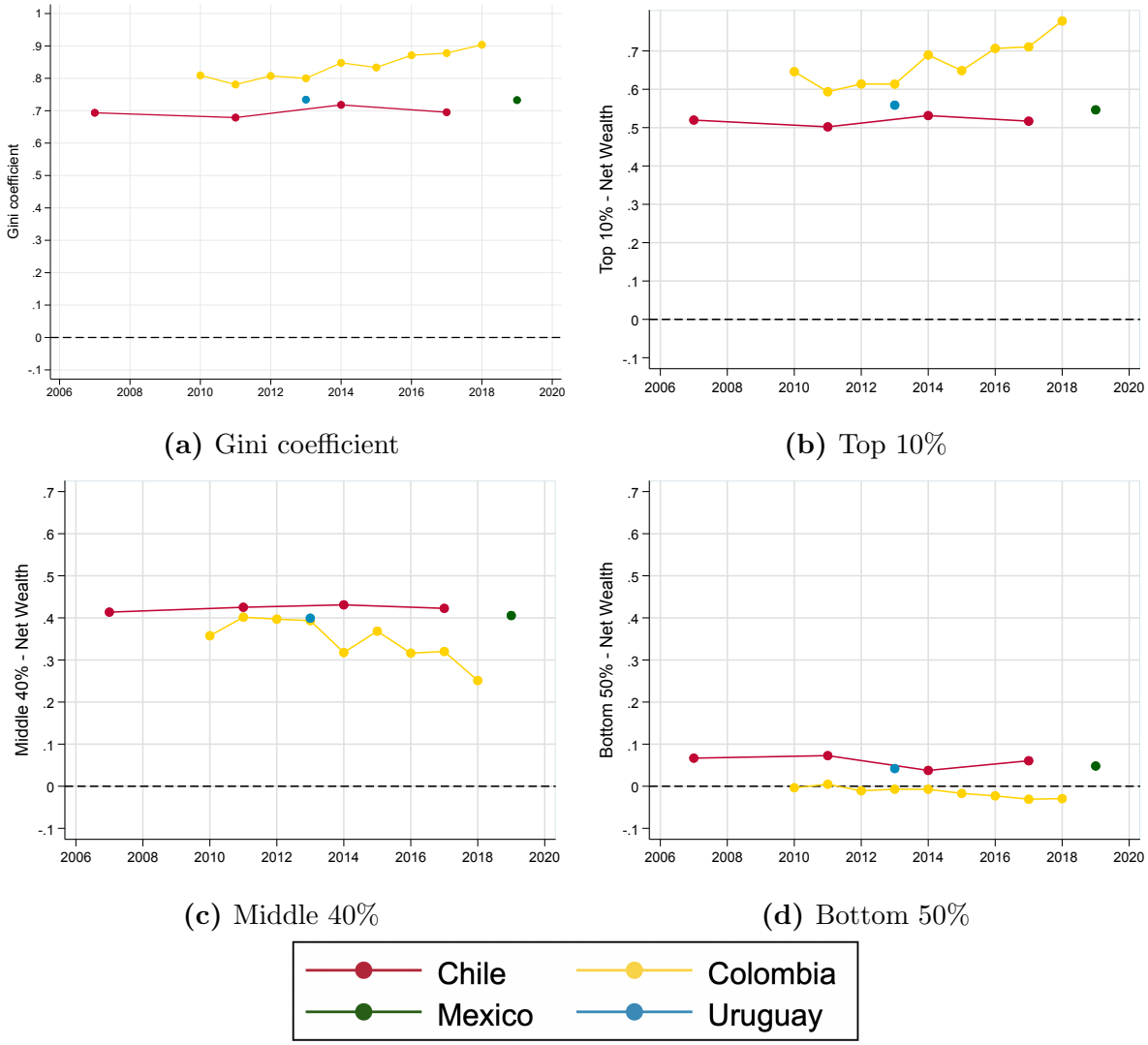
While surveys suffer from the aforementioned issues, they also provide greater flexibility than administrative records. At least in principle, they account for the whole population (or at least the urban population) and not only taxpayers. They focus on households rather than individuals, thus providing a more comprehensive measure of wealth. They also allow for multiple definitions of assets and liabilities, not only taxable wealth–which is sensitive to changes in tax law. Similarly, we can explore differences across gender, age, income groups or other socio-demographic categories that are not typically available in administrative records. As they stand, administrative records and household wealth surveys serve different but complementary purposes. However, more research should look into combining the two to get adjusted survey estimates, much in the way the income literature has done so (see, e.g., Blanchet et al. (2022); Carranza et al. (2022)).

One of the first efforts to explore wealth distributions in the region was Torche and Spilerman (2006). Using mainly household income surveys, they studied wealth ownership and inequality for 16 Latin American countries using a combination of published data on wealth holdings and household surveys. They find that home ownership is more evenly distributed than in high-income countries (e.g. the United Kingdom), but this is explained by the prevalence of squatting settlements in urban areas. Based on rental value reported by households, they estimate that 25-40% of all housing wealth is held by the top 10%, depending on the country. On the other extreme, large segments of the population (up to 90%) do not have access to capital assets. While household income surveys allow for such an analysis, we intend to study the full composition of wealth, including housing wealth but also other assets and liabilities – as such, wealth surveys are required.

From Figure 4 we can look at the rest of the wealth distribution, albeit under the same caveats as discussed before. The bottom 50% accrues a minimal share of total net wealth, well below 10% for all countries and closer to 0% for Colombia. The following 40% of the population (the 'middle' 40%) accrues around 40% of all net wealth, with a slight decrease for Colombia over time, resulting in a top 10% share ranging from 50% to 70%. If we consider that the top 1% shares reported under administrative data are closer to 40% rather than 20% as reported in the survey, we can expect the share for the middle 40% to be grossly overestimated. Nonetheless, this gives us an example of how administrative and survey data can complement each other. While survey-based estimates underestimate the extent of concentration at the top, they can still paint a relevant picture for the rest of the population, particularly for those at the bottom.

Furthermore, Figure 4 provides summary statistics of the overall concentration through the Gini coefficient in panel (a). The Gini coefficient shows that survey-based wealth inequality is extremely high, ranging from 0.7 to 0.9, much higher than for income, whether survey-based (Gandelman and Lluberas, 2023) or under Distributional National Accounts (De Rosa et al., 2022). Interestingly, the Gini coefficients show a very similar pattern to that of the top 10% shown in panel (b), both when comparing country differences and trends over time. The similarities between the top 10% share and the Gini coefficient suggest that the differences between the top 10% and the remaining 90% account for the lion's share of aggregate differences in net wealth.

**Figure 4:** Wealth inequality based on household wealth surveys



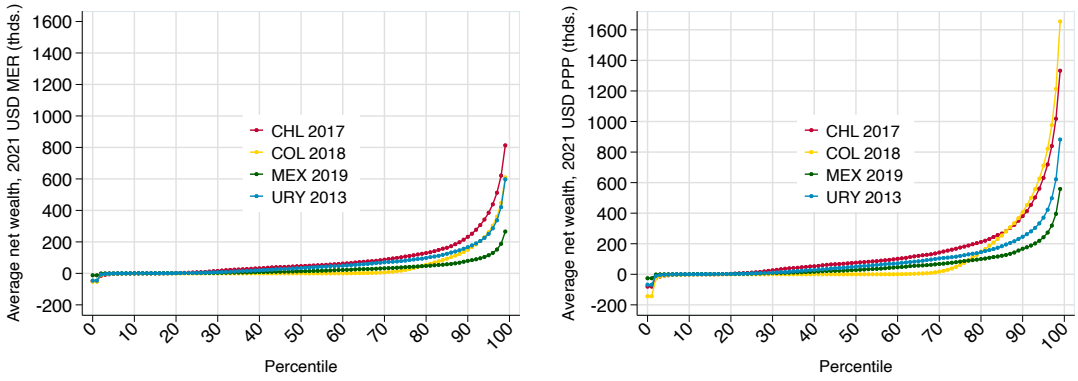

**(a)** Gini coefficient **(b)** Top 10%

**(c)** Middle 40% **(d)** Bottom 50%

***Notes.*** Own elaboration based on countries' household survey (see Figure A.4). Per-capita household wealth.

Survey data also allows us to plot the distribution of net wealth as a whole. Figure 5 shows the average net worth in both market exchange dollars (panel a) and PPP dollars (panel b) for the last year of available data. Overall, we see that average net wealth follows

**Figure 5:** Average net worth by percentile, latest year




**(a)** Market Exchange Rate **(b)** Purchasing Power Parity

***Notes.*** Own elaboration.

the traditional 'hockey stick' shape, with most of the population having little to no wealth and noticeable differences in wealth arising at the 80th to 90th percentile depending on the country. Chile and Uruguay see an increase in average wealth at earlier percentiles (P30-P40), while this happens further down the distribution for Mexico (P40-P50). Colombia shows the more extreme curve, with the increase starting at around the 70th percentile. At the top, Colombia and Chile show the highest levels of net wealth, at around 1.5 million USD (PPP), followed by Uruguay (0.9 million) and then Mexico (0.6 million). While these differences can be economically significant, it is important to note that these surveys differ both in their design and coverage, with Mexico having no imputations and being nationally representative, while the remaining three are only representative of urban settings or large cities. These factors contribute, but do not fully explain, the low coverage of both aggregate assets and liabilities in surveys (figure A.5)

## 4.3 Regression-based estimates

Global estimates differ substantially in how they are constructed. They can be based on extrapolations, for example by taking the distribution of another country and rescaling it to match that country's aggregate. They can also rely on a combination of financial surveys corrected at the top based, for example using Forbes data as is the case of the Credit Suisse estimates. Alternatively, more recent estimates rely on machine learning techniques drawing information from the income distribution, as is the case of some of the estimates provided by the World Inequality Database (wid.world). These estimates can be close to our benchmark in some cases. However, they can also substantially under- or overestimate inequality based on the underlying data, implying a wide margin of error. We group these estimates under the umbrella term 'regression-based' as they rely on a combination of parametric and non-parametric methods to impute and predict missing

information.

Regression-based estimates are not designed to give an accurate picture of inequality levels and trends for any given country. They are formulated explicitly as a rough approximation that serves a different purpose, which is to make statements about the global wealth distribution, thus placing its focus on regions with high levels of wealth and/or population. Indeed, we see that most of these estimates have scarce to null data for the Latin American region, especially for the Caribbean. Despite disclaimers, and probably due to a lack of alternatives, these data are often cited by the media and think tanks as unambiguous information.

Credit Suisse's reports are available from 2010 until 2021 (Shorrocks et al., 2021), which include direct estimates for Uruguay and Chile, depicted in Figure A.10 (the methodology is described in Davies et al. (2011, 2017)). They use National Accounts, wealth surveys as well as a correction of the right tail of the distribution based on rich lists such as Forbes or Fortune magazines, and impute household wealth level and distribution for countries with no data. They provide estimates of a household's net worth, i.e. "the marketable value of financial assets plus non-financial assets, principally housing and land, minus debts. Private pension wealth is included, but public pensions are not", with the target unit of analysis being individuals 20 years old or older (Davies et al., 2017).[6] They proceed in three steps: (i) establish the aggregate level of wealth for each county based on household balance sheets or household surveys; (ii) estimate wealth distribution based on surveys or income based on the relationship between wealth and income distributions; (iii) correct upper tail based on "rich lists".

In (i), they rely on countries with complete balance sheets when available, and on partial balance sheets or surveys when they are not. For countries with no data, they run regressions based on the life-cycle model (LCM), separately for liabilities, financial and non-financial assets under a seemingly unrelated regressions (SUR) framework, including the data source as dummy variables. The average per adult wealth for countries with no data is imputed based on their region and income class. For (ii), they rely on household wealth data (harmonised when possible, e.g. Household Finance and Consumption Survey (HFCS)) or tax records for a few countries. For the remaining countries, it was estimated based on income distribution drawn from the World Development Indicators of the World Bank and the World Income Inequality Database (WIID). When no income distribution estimates were available, the procedure was the same as for wealth levels. In (iii), they fit a Pareto distribution for each year among countries with one or more billionaires for at least five years and region-based adjustments for countries with fewer or no billionaires.

[6] All values are expressed in US dollars rather than PPP, since top wealth holders are internationally mobile, hence turning it into the relevant currency for analysis.

The World Inequality Database's data and methodology for the estimates of `wid.world` revolves around a series of articles covering different steps and regions. For Europe, the main discussion is presented in Blanchet and Martínez-Toledano (2022a), based on adjustments and extensions done in previous estimates. The imputation procedure for countries with no data is described in Bajard et al. (2021). The procedure is similar in both cases, imputing wealth distributions based on the observed income distribution. These imputation models are calibrated on countries with data on both income and wealth, giving a higher weight to countries with similar income inequality. Similar to Credit Suisse, an adjustment is also made based on Forbes data between 1988 and 2021. Estimates of the top 10% share for all Latin American countries available are depicted in the Appendix, under Figures A.10 for Credit Suisse and A.11 for WID.

The estimates for Credit Suisse are quite similar across countries, potentially due to the use of extrapolation methods. Top 10% shares range between 70% and 80%, with most around 75%. Both South and Central America show stable trends over time, while the Caribbean shows rising concentration at the top starting in 2014-15. On the other hand, the World Inequality Database shows a somewhat more heterogeneous picture. Estimates for the top 10% share are slightly below that of Credit Suisse and range between 60% and 75%, with most around 70%. Just as in the Credit Suisse case, estimates for South and Central America are also stable over time. However, the Caribbean shows a downward trend, albeit with only two countries. While noisy, these estimates point towards high levels of wealth concentration and a somewhat stable trend over time in the region.

When contrasted with estimates using administrative data we find a heterogeneous picture. From Figure 3 we can compare the top 1% share across countries, particularly how both Credit Suisse and WID estimate fare against the benchmark share of 40% of wealth accrued by the top 1%. We see that, with the exception of the WID estimates for Chile and Mexico, all other estimates show a lower top 1% rate. This is particularly true for the WID estimates for Uruguay and Colombia which show a decreasing trend over time, settling around 25% to 30%. Contrary to the WID series for Chile which shows a share of roughly 45%, the Credit Suisse series for Chile shows an upward trend starting at 35% and finishing in 2014 at around 40%. Overall, there is no clear conclusion on whether these regression-based estimates over or under-estimate concentration at the top, nor if these biases pertain to a specific method. Ultimately, understanding what explains these findings would require unpacking the black box behind each of the methods and assumptions that define each approach.

# 5 Conjectures and partial insights

Up to this point, we have mostly focused on distributional outcomes for the four countries for which there is data on wealth. As a result, we have said little to nothing about wealth inequality for the rest of the region. In this section, we attempt to infer some trends in wealth inequality for a larger number of countries. We do so by relying on complementary databases that capture additional information, namely capital income series, data on billionaires and historical estimates of postcolonial wealth inequality.

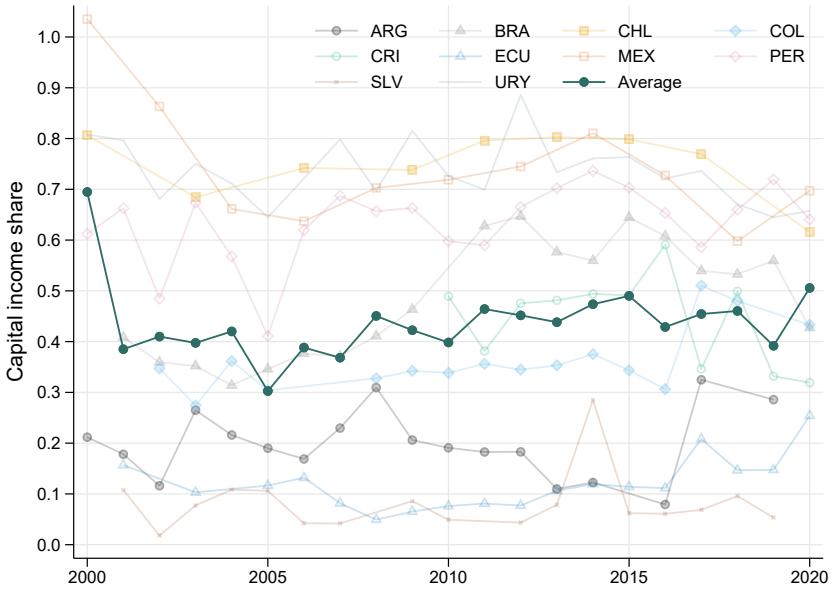
## 5.1 Capital incomes distribution

Capital income represents all income flows stemming from capital and, more generally, wealth. As such, it can give us some insights into the extent of wealth inequality. Indeed, capital income is a key input of the capitalization method used to measure the distribution of wealth (see, e.g., Saez and Zucman (2016)). In fact, analysing the distribution of capital income is equivalent to using the capitalization method assuming not only homogeneous rates of returns among individuals –which is the standard assumption– but also between types of assets. While the level of wealth inequality may be different from the capital incomes' inequality if the latter assumption does not hold (since assets with relatively lower rates will be biased downwards), capital income distributions still offer insights into the evolution of wealth inequality, provided the relation between each broad category of assets' rates of return remains relatively stable.

Figure 6 shows the share of capital income accrued by the top 10% of earners. Figure 7, on the other hand, focuses on the bottom of the distribution by showing the share of respondents with no capital income, both excluding and including imputed rents. Both figures are based on the DINA series for Latin America developed by De Rosa et al. (2022). From figure 6 we see a large degree of cross-sectional variability. Countries Uruguay, Chile, Mexico and Peru show the highest levels of capital income concentration. On the other hand, El Salvador, Ecuador and Argentina show much lower levels of concentration. On average, however, we see a slight increase in the share of capital income going to the top 10% of earners, going from around 40% in the early 2000s to just below 50% at the end of the period. Overall, and with the exception of Brazil, where the top 10% share saw a large spike starting in 2005, we see that the region has experienced fairly stable levels of capital income concentration.

Figure 7 shows that most individuals do not receive any capital income. This is consistent with our discussion on survey-based estimates where the bottom 50% owns less than 10% of net wealth. If we exclude imputed rents (left panel), most if not all the population has zero capital income. On the other hand, if we include imputed rents, as shown in the right panel, this share falls substantially. Colombia and El Salvador show the highest shares of

**Figure 6:** Share of capital income going to the top 10% of earners by country



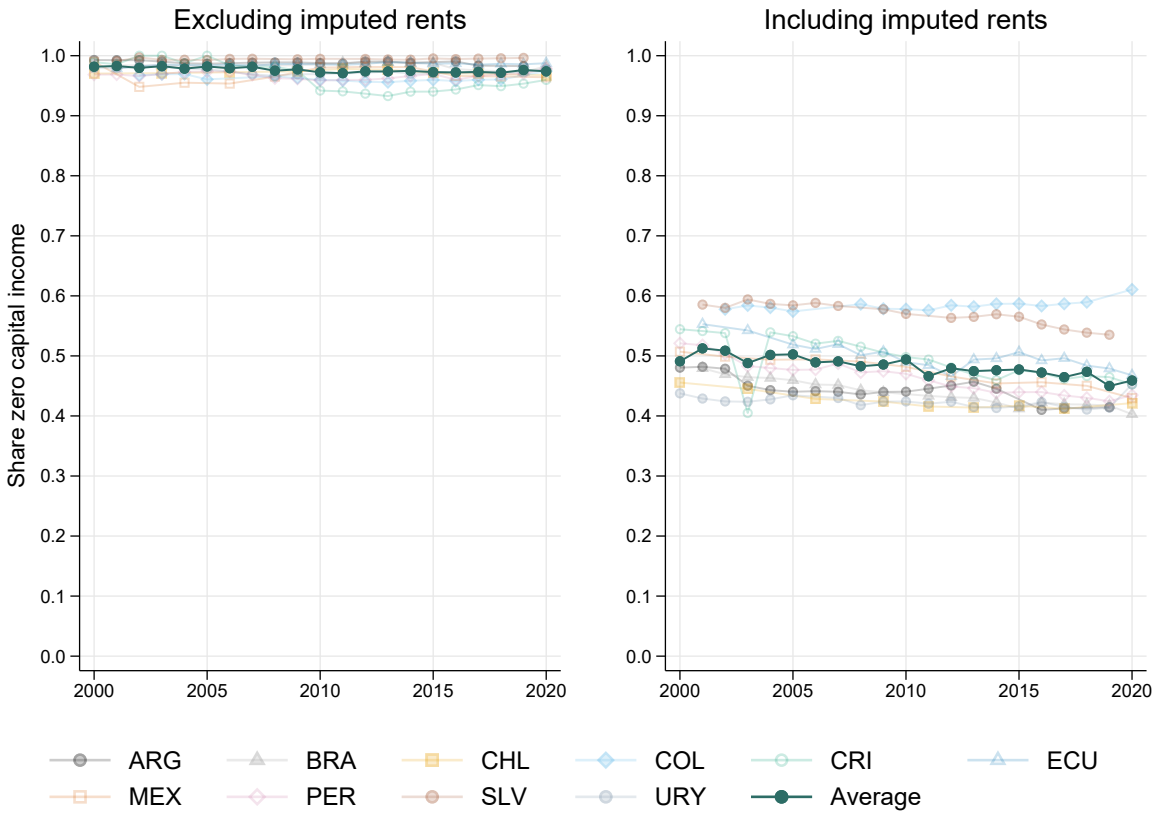

***Notes.*** Own elaboration based on DINA estimates from De Rosa et al. (2022).

individuals with zero capital income at around 60%. While Ecuador, Uruguay and Chile show the lowest, with shares of 40% of the population. Across the whole period, the share has somewhat decreased, from around 50% in 2000 to 45% by the end of the period.

From this Figure, we can conclude a few things. First, capital income is highly concentrated, even when accounting for imputed rents - with around half of the population reporting zero income. Second, the region does show some heterogeneity, with important differences across countries. Third, housing plays a major role in the accrual of income from capital, and therefore in the distribution of wealth, being the only asset for a substantial share of the population. Lastly, the share of individuals with no capital income follows a rather stable pattern over time, with a slight decrease in the second half of the period.

Together, figures 6 and 7 paint a picture of high and stable inequality of capital income. Most of the population does not receive any income from capital, and even among those that do we see a strong level of concentration. Brazil differs in this trend, showing a large increase in capital income inequality in the aftermath of the commodity boom with no discernible change in the share with zero capital income, thus reinforcing the extent of concentration. For the remaining countries, trends have remained relatively stable with Uruguay and Chile showing the highest levels of inequality and Argentina, Colombia and El Salvador at the other end.

**Figure 7:** Share of respondents with zero capital income by country



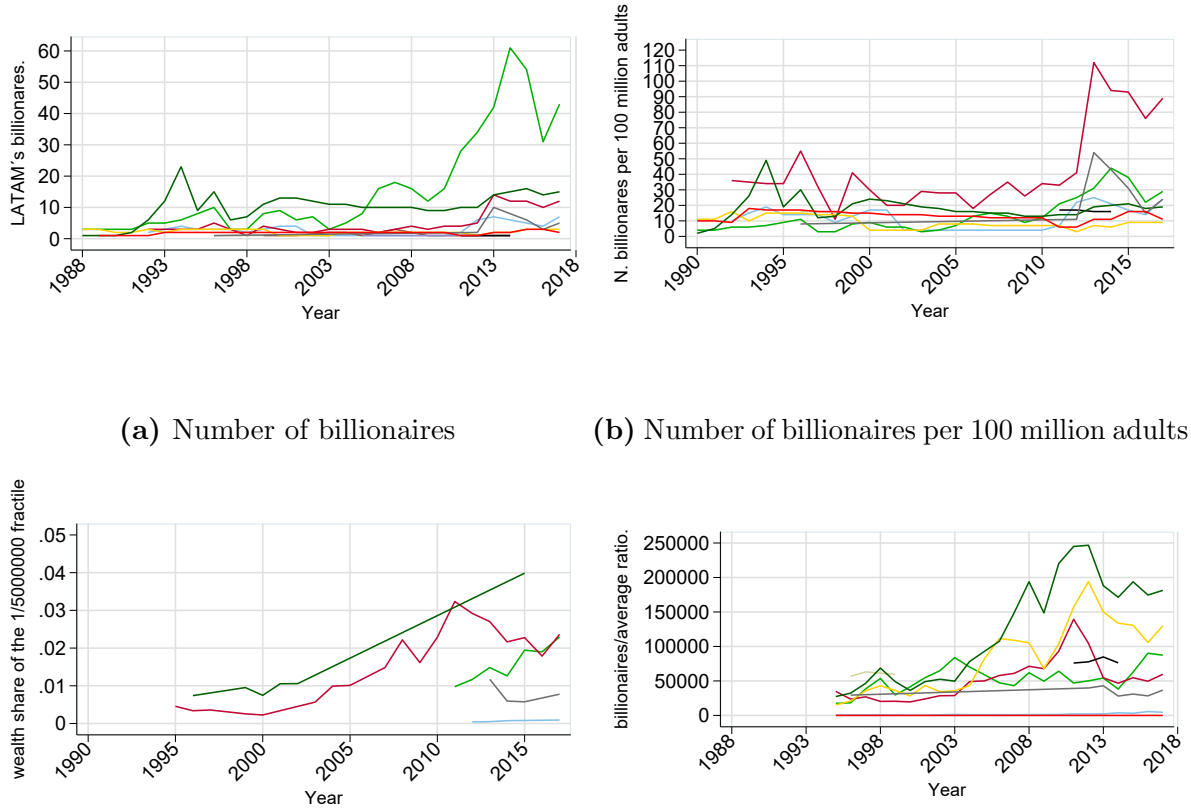

***Notes.*** Own elaboration based on DINA estimates from De Rosa et al. (2022).

## 5.2 *Forbes* billionaires list

Figure 8 depicts the number of billionaires by country for the 1988-2017 period in panel (a) (see details by year in Figure A.12 in the Appendix), as well as the number of billionaires by 100 million adults in panel (b). Brazil is by far the country with more billionaires on the Forbes list since the mid-2000s, surpassing Mexico after a steep increase which reached up to 60 individuals by 2014, decreasing thereafter. However, when computed relative to the adult population, Chile is the country with the most billionaires throughout the period, with a sharp spike in the last decade, reaching 80-100 per 100 million adults by the end of the period. Panel (c) depicts the wealth share of the top 1/5 million fractile, for which only a few countries have enough billionaires to actually report it. Out of the ones which do have enough, Mexico and Chile show similar levels and trends, with an increasing share that reaches close to 3-4% of net private wealth. In the case of Brazil, the share is also growing but it is closer to 1-2%. Finally, Argentina and Peru have enough billionaires to fill the 1/5 million fractile but their wealth accounts for less than 1% of aggregate wealth. Panel (d) shows average billionaire's wealth in relation to average private wealth.

Figure 9 shows Latin American billionaires' average wealth vis-à-vis the rest of the world

**Figure 8:** Latin America's number of billionaires, 1988-2017




**(a)** Number of billionaires

**(b)** Number of billionaires per 100 million adults

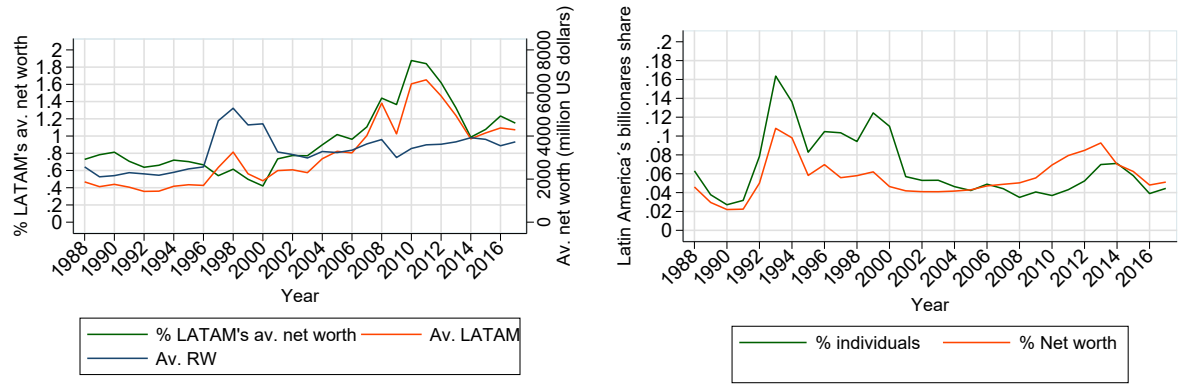
**(c)** Wealth share of the 1/5 million fractile

**(d)** Billionaires-average ratio

***Notes.*** Own elaboration based on Forbes billionaires list and aggregate private wealth from wid.world.

in panel (a), indicating an increasing trend which spiked during the commodity boom. By the end of the period, Latin American billionaires were on average equally wealthy as billionaires from outside of the region. Panel (b), in turn, depicts the number and aggregate wealth of Latin America's billionaires as compared with remaining countries in *Forbes* billionaires list. Both shares move following similar trends, with both the share of individuals and total wealth begin 5-10% of that held by the rest of the world.

**Figure 9:** Latin America's billionaires net worth, 1988-2017




**(a)** Average wealth **(b)** LATAM vs Rest of the World

***Notes.*** Own elaboration based on Forbes billionaires list.

The Forbes list shows a growing number of billionaires in the region, particularly in Brazil, Chile and Peru. We also see a growing concentration of wealth among them and growing gaps between their wealth and their country's average. When compared to billionaires in the rest of the world we see that the commodity boom was exceptionally beneficial for Latin American billionaires, increasing both their number and net worth faster than the rest of the world. However, this trend quickly reverted, reaching its pre-boom level around 2016. These results point to the importance of not only looking at the levels of wealth but their composition – Latin American billionaires invest heavily in commodities, which are highly volatile but also more susceptible to windfall profits, resulting in procyclical trends relative to both the average wealth and to other billionaires.

## 5.3 Can we say something about long-run trends?

We finish this section by reviewing historical estimates on wealth inequality. These studies describe wealth concentration patterns in the postcolonial era, mainly the eighteenth and nineteenth centuries. The largest share of these studies focuses on specific regions of Brazil and Argentina, namely Rio de Janeiro (Silveira, 1985; Johnson and Frank, 2006) and the province of Buenos Aires (Johnson, 1995; Gelman and Santilli, 2010). There are also studies for Chile (Llorca-Jaña et al., 2018), Colombia (Acemoglu et al., 2007), Costa Rica (Gudmundson, 1983) and Jamaica (Burnard et al., 2019). Through this literature, we can

contrast the wealth distribution from that time to the current survey-based estimates, both in terms of composition and inequality.

Historical analysis of wealth inequality relies on censuses, probate inventories or tax records (or a combination) to identify assets such as land, slaves, cattle, properties, etc. Due to the nature of the data, researchers have little to no wealth information for people that did not hold these types of assets. For that reason, some studies focus on a single asset where ownership was clearly recorded, such as land (Acemoglu et al., 2007), cattle (Gelman and Santilli, 2018) or the ownership of slaves (Marcondes, 2005). Other studies try to capture composite definitions of wealth, including multiple assets, as done by Djenderedjian and Martirén (2012) using a combination of census, tax records and probate inventories for three regions of Argentina in the 1860s. Because of the rural nature of most of these data sources, these studies typically fail to account for assets which were more prevalent in urban settings, such as factories or workshops, as noted by Galli et al. (2022).

Overall, these articles find that wealth inequality in the postcolonial era was high, at least as high as modern-day estimates. All Gini indexes are over 0.6, with most being around 0.8. Perhaps a notable exception is inequality among slaveholders in Montevideo around the 1750s with a Gini of 0.4 (Vicario, 2017), which increases to 0.7 once you go beyond taxpayers to include all potential wealth-holders (Moraes et al., 2022). As one would expect, these studies are quite sensitive to the choice of method and the data source. In a review article, Galli et al. (2022) shows large differences, even for studies looking at the same region and wealth concept, with differences ranging from 15 to 20 points of the Gini for Buenos Aires or Rio de Janeiro. However, the upper bounds for this period are substantial, with all countries having at least one Gini index estimate of over 0.85. While the composition of wealth has changed substantially over time, from rural-based sources of wealth to financial wealth, we see high and consistent levels of inequality, suggesting, unfortunately, that not much has changed.

# 6 Discussion: three levels of confidence

From the preceding sections, it should be clear enough that establishing clear-cut conclusions about wealth and its distribution in Latin America is at this point a chimera. Comparable good quality data is only available for a few countries, substantially restricting our capacity to provide region-wide conclusions. However, for the few countries for which there is data, *some* important facts can be established with a reasonable degree of confidence. Other facts, although not easily proven, may well be considered likely. For the remaining cases, we can only provide hints, out of which one may attempt to elucidate tentative conclusions. To distinguish these groups is the aim of this section.

We can be reasonably confident that wealth concentration is very high in the region.

This is true when compared with income distribution, as with most cases, but also when compared with other countries and regions. As discussed in section 4, for the few countries for which we have administrative data-based estimates (Uruguay, Chile and Colombia), the reference for the top 1% share is 40%. Note that this is higher than similar estimates for countries such as France or the United Kingdom, where it is about 20-25% (Garbinti et al., 2021; Atkinson, 2018) and close to very unequal countries such as the United States (Saez and Zucman, 2016, 2022). While not entirely comparable given the methodological differences involved, they do represent the most reliable estimates at our disposal and thus allow for a solid starting point for the comparison.[7]

Consistent with the previous finding, Latin American billionaires seem to be at least as rich as billionaires from elsewhere and, for considerable periods of time, even wealthier, as shown in Figure 9. Considering the fact that Latin American countries have relatively lower average wealth, this result suggests higher concentration at the top. At the other extreme of the distribution, wealth household surveys, although ill-equipped to analyse top wealth shares, can inform our understanding of the bottom of the distribution. Our estimates for the four countries with available surveys indicate that the share accrued by the poorest half is well below 10% of total wealth and even negative for large sections of the distribution. Taken together, these two analyses paint a picture of both high concentration at the top and high indebtedness at the bottom, thus reinforcing the notion of high overall net wealth inequality.

For the remaining countries for which there is no wealth data, we look into alternative sources of information, namely capital income inequality. If we think of capital income as the flows stemming from the ownership of wealth, high levels of capital income inequality in the region can suggest high levels of wealth inequality. To be sure, income inequality is a poor proxy of wealth inequality, as this relationship is not always positive. Countries with low income inequality may have high wealth inequality if households can easily acquire debt for housing or investing, or if well-developed social protection nets replace the need for precautionary savings, as is the case of Northern European countries (Pfeffer and Waitkus, 2021). The fact that neither of these conditions is met in Latin American countries suggests that high-income inequality is coupled with high wealth inequality, at least more so than in Europe.

This fragmented image is at least qualitatively consistent with estimates from Credit Suisse and the World Inequality Lab. For the region as a whole, wealth concentration at the top is slightly over 42-45% in wid.world, five points higher than the world average and close to twenty higher than in Europe. The top 1% shares reported for countries such as Brazil by

[7] Chile and Colombia's estimates are based on wealth tax data, while Uruguay is based on the capitalization method (using capital incomes tax records). Saez and Zucman (2016, 2022); Garbinti et al. (2021) also use the latter method, but Atkinson (2018) is based on the estate multiplier method.

Credit Suisse are between 45-49%, substantially higher than the rest of the world. While most of these estimates are based not on direct observation for most cases but on indirect estimation procedures as discussed in section 3, they do end up reinforcing our conclusion: wealth inequality is high in the region as compared to the rest of the world.

As part of our review, we also explore aggregate levels of wealth together with wealth-to-income ratios. However, since very few countries actually report national balance sheets, any conclusions regarding aggregate levels of wealth are necessarily tentative at this point. Our estimates, discussed in Section 2.3, suggest that wealth-to-income ratios have been increasing, ranging from 350 to 600% in most recent estimates depending on the valuation method. Both levels and trends are coincident with wid.world estimates –hardly surprising in some cases as they are based on the estimates presented here (with the exception of Uruguay), but they do provide the same upward trend for the region as a whole. Moreover, this increasing pattern seems to be led by growing private wealth and domestic capital, as both the government sector's wealth and net foreign assets position are falling.

While exhaustive, our review only allows us to speculate about wealth inequality trends. Having data for at most one year, wealth household surveys are not enough to provide hints about inequality's evolution in the region, nor can administrative data-based estimates. For the few countries for which short time series do exist (Colombia and Chile's surveys, Uruguay's capitalization method's estimates), inequality levels appear to be stable over time. This is consistent with the capital income distribution estimates, which also show a high but stable level of concentration. Forbes billionaire's data, which only captures very few individuals at the very top of the distribution indicates that the number of billionaires, the countries from which they originate, and their average wealth has grown over time, especially as a result of the 2000s commodity boom. The billionaire's lists suggest that, even if overall wealth inequality has remained stable, there appears to be an increasing concentration at the very top which has not been adequately captured by any of the other sources.

Our findings show that there is still a very long way to go regarding wealth research in the region. Although it is possible to provide some general insights about wealth aggregates and their distribution, the region lacks the data to provide an accurate and comparable picture, both across countries and over time. Some scattered data has recently become available for a handful of countries, namely surveys, administrative records and balance sheets. Consequently, researchers have slowly been providing new estimates based on that limited data. Nonetheless, information is partial at best, it is difficult to access and available only for a few years. This context does not provide the conditions for wealth research to thrive, and not even to monitor the evolution of these important variables systematically.

Given existing data limitations it may seem like a good idea to merge different sources of data to compensate for their individual weaknesses. We believe this is not the best way to move forward for advancing the region's goals, given the extreme weaknesses present in currently available data. What has been shown challenging income-wise, such as adjusting household surveys based on tax and national accounts data, may well be outright impossible for wealth at this point. It is instead necessary to increase the availability and comparability of wealth records across countries. National accounts' balance sheets can provide a comparative overview of wealth aggregates. Wealth surveys can help exploring the distributional dimension, particularly when looking into the bottom of the distribution and differences due to socio-demographic characteristics of households. Similarly, improving ways in which researchers access administrative data could help in providing more precise estimates for the top. In many ways, wealth inequality research is still in its infancy in the region, and this needs to be faced head-on and with no shortcuts: more and better data is needed.

# References


Acciari, P., F. Alvaredo, and S. Morelli (2017). The concentration of personal wealth in Italy 1995-2013. In *Paper presented at PSE Workshop. May 2018.*, Volume 30.

Acemoglu, D., M. A. Bautista, P. Querubin, and J. A. Robinson (2007). Economic and political inequality in development: the case of Cundinamarca, Colombia.

Altimir, O. (1987). Income distribution statistics in Latin America and their reliability. *Review of Income and Wealth 33*(2), 111–155.

Alvaredo, F., A. B. Atkinson, and S. Morelli (2018). Top wealth shares in the UK over more than a century. *Journal of Public Economics 162*, 26–47.

Alvaredo, F., B. Garbinti, and T. Piketty (2017). On the Share of Inheritance in Aggregate Wealth: Europe and the USA, 1900–2010. *Economica 84*(334), 239–260.

Atkinson, A. B. (1973). *Wealth, income and inequality*. Penguin Education.

Atkinson, A. B. (2018). Wealth and inheritance in Britain from 1896 to the present. *Journal of Economic Inequality 16*(2), 137–169.

Atkinson, A. B. and A. Harrison (1978). *Distribution of personal wealth in Britain*. Cambridge University Press.

Bajard, F., L. Chancel, R. Moshrif, and T. Piketty (2021). Global wealth inequality on WID.world: estimates and imputations. *World Inequality Lab Technical Note 2021/16*.

Baselgia, E. and I. Martínez (2021). A safe harbor: Wealth-income ratios in switzerland over the 20th century and the role of housing prices.

Bauluz, L., T. Blanchet, C. Martínez-Toledano, and A. Sodano (2021). Estimation of global wealth aggregates in wid.world. *WID. world Working Paper 2021/13*.

Bauluz, L. E. (2019). Revised national income and wealth series: Australia, Canada, France, Germany, Italy, Japan, UK and USA. *WID. world Working Paper* (2017/23).

Berman, Y. and S. Morelli (2021). On the distribution of estates and the distribution of wealth: Evidence from the dead. Technical report, National Bureau of Economic Research.

Blanchet, T., I. Flores, and M. Morgan (2022). The weight of the rich: improving surveys using tax data. *The Journal of Economic Inequality 20*(1), 119–150.

Blanchet, T. and C. Martínez-Toledano (2022a). Distributional Wealth Accounts in Europe: Methodology. WIL Technical Notes.

Blanchet, T. and C. Martínez-Toledano (2022b). Wealth Inequality Dynamics in Europe and the United States: Understanding the Determinants. *Journal of Monetary Economics*.

Blanco, M. A., L. Bauluz, and C. Martínez-Toledano (2021). Wealth in Spain 1900–2017 A Country of Two Lands. *The Economic Journal 131*(633), 129–155.

Burnard, T., L. Panza, and J. Williamson (2019). Living costs, real incomes and inequality in colonial Jamaica. *Explorations in Economic History 71*, 55–71.

Carranza, R., M. Morgan, and B. Nolan (2022). Top income adjustments and inequality: an investigation of the EU-SILC. *Review of Income and Wealth Online version*(Early View).

Chatterjee, A., L. Czajka, and A. Gethin (2020). Estimating the distribution of household wealth in South Africa. (45/2020).

Chatterjee, A., L. Czajka, and A. Gethin (2021). Wealth Inequality in South Africa, 1993-2017. *World Inequality Lab Working Paper* (2021/16).

Cowell, F. A. and P. Van Kerm (2015). Wealth inequality: A survey. *Journal of Economic Surveys 29*(4), 671–710.

Davies, J. B., R. Lluberas, and A. F. Shorrocks (2017). Estimating the level and distribution of global wealth, 2000–2014. *Review of Income and Wealth 63*(4), 731–759.

Davies, J. B., S. Sandström, A. Shorrocks, and E. N. Wolff (2011). The level and distribution of global household wealth. *The Economic Journal 121*(551), 223–254.

Davies, J. B. and A. F. Shorrocks (2000). The distribution of wealth. In A. Atkinson and F. Bourguignon (Eds.), *Handbook of income distribution*, Volume 1, pp. 605–675. Elsevier.

De Rosa, M. (2022). Accumulation, inheritance and wealth distribution: first estimates of the untold half. *Serie Documentos de Trabajo; 07/22*.

De Rosa, M., I. Flores, and M. Morgan (2022). More unequal or nor as rich: revisiting the Latin American exception. *SocArXiv*.

Djenderedjian, J. and J. L. Martirén (2012). La distribución de la riqueza rural entre tradición y modernidad: Los casos de la colonia esperanza y el distrito de paraná durante la década de 1860. *Población y sociedad 19*(2), 125–154.

Dolan, K. A. (2012). Methodology: How We Crunch The Numbers. *Forbes Magazine. N°7.*.

Flores, I. and P. Gutierrez (2021). *Riqueza en Chile: Medición y Tributación*, Chapter 5, pp. 79–119. Fondo de Cultura Económica.

Flores, R., J. Pérez, and F. Uribe (2018). Valoración de la tierra de uso residencial y su contribución al valor de mercado de la vivienda en chile. *Studies in Economic Statistics of the Central Bank of Chile 126*.

Galli, S., D. Theodoridis, and K. Rönnbäck (2022). Economic inequality in Latin America and Africa, 1650 to 1950: Can a comparison of historical trajectories help to understand underdevelopment? *Economic History of Developing Regions*, 1–24.

Gandelman, N. and R. Lluberas (2023). Wealth in Latin America: Evidence from Chile, Colombia, Mexico and Uruguay. *Review of Income and Wealth* (Early View).

Garbinti, B., J. Goupille-Lebret, and T. Piketty (2021). Accounting for wealth-inequality dynamics: methods, estimates, and simulations for France. *Journal of the European Economic Association 19*(1), 620–663.

Gelman, J. and D. Santilli (2010). Crecimiento económico, divergencia regional y distribución de la riqueza: Córdoba y buenos aires después de la independencia. *Latin American Research Review*, 121–147.

Gelman, J. and D. Santilli (2018). La distribución de la riqueza en el Buenos Aires rural entre finales de la colonia y la primera mitad del siglo XIX? Una desigualdad moderada y en declive? *América Latina en la historia económica 25*(2), 7–41.

Gudmundson, L. (1983). Costa Rica before coffee: Occupational distribution, wealth inequality, and elite society in the village economy of the 1840s. *Journal of Latin American Studies 15*(2), 427–452.

Hacienda, Ministerio de (2022). Diagnóstico distributivo de ingreso y patrimonio, y análisis de la propuesta de reforma tributaria en materia de renta y riqueza.

Jenkins, S. P. (1990). The distribution of wealth: Measurement and models. *Journal of Economic Surveys 4*(4).

Johnson, L. L. (1995). The Competition of Slave and Free Labor in Artisanal Production: Buenos Aires, 1770–1815. *International Review of Social History 40*(3), 409–424.

Johnson, L. L. and Z. Frank (2006). Cities and wealth in the South Atlantic: Buenos Aires and Rio de Janeiro before 1860. *Comparative Studies in Society and History 48*(3), 634–668.

Kennickell, A. B. (2019). The tail that wags: differences in effective right tail coverage and estimates of wealth inequality. *The Journal of Economic Inequality 17*(4), 443–459.

Kopczuk, W. (2015). What do we know about the evolution of top wealth shares in the United States? *Journal of Economic Perspectives 29*(1), 47–66.

Kopczuk, W. and E. Saez (2004). Top Wealth Shares in the United States, 1916–2000: Evidence from Estate Tax Returns. Technical report, National Bureau of Economic Research.

Kumar, R. (2019). The evolution of wealth-income ratios in india 1860-2012. *Available at SSRN 3111846*.

Llorca-Jaña, M., J. Navarrete-Moltalvo, and R. Araya-Valenzuela (2018). Inequality in chile before the first globalization: an approach derived from agricultural market income, 1830s-1850s.

Londoño-Vélez, J. and J. Ávila-Mahecha (2021). Enforcing wealth taxes in the developing world: Quasi-experimental evidence from colombia. *American Economic Review: Insights 3*(2), 131–48.

Lustig, N. (2019). The "Missing Rich" in Household Surveys: Causes and Correction Approaches. *Commitment to Equity (CEQ) Working Paper Series 75*, 1–40.

Marcondes, R. L. (2005). Small and medium slaveholdings in the coffee economy of the vale do paraiíba, province of saão paulo. *Hispanic American Historical Review 85*(2), 259–281.

Martínez-Toledano, C. (2017). Housing bubbles, offshore assets and wealth inequality in spain. *World Wealth and Income Database Working Paper 19*.

Moraes, M. I., R. Riella, C. Vicario, and P. Marmissolle (2022). Wealth inequality in colonial hispanic-america: Montevideo in the late eighteenth century. *Economic History of Developing Regions*, 1–27.

Novokmet, F., T. Piketty, and G. Zucman (2018). From soviets to oligarchs: inequality and property in russia 1905-2016. *The Journal of Economic Inequality 16*(2), 189–223.

OECD (2013). Measuring household wealth through surveys. In *OECD Guidelines for Micro Statistics on Household Wealth*, Chapter 6, pp. 131–159. Paris: OECD Publishing.

Pfeffer, F. T. and N. Waitkus (2021). The wealth inequality of nations. *American Sociological Review 86*(4), 567–602.

Piketty, T., G. Postel-Vinay, and J. L. Rosenthal (2006). Wealth concentration in a developing economy: Paris and France, 1807-1994. *American Economic Review 96*(1), 236–256.

Piketty, T., L. Yang, and G. Zucman (2019). Capital accumulation, private property, and rising inequality in China, 1978–2015. *American Economic Review 109*(7), 2469–96.

Piketty, T. and G. Zucman (2014). Capital is back: Wealth-income ratios in rich countries 1700–2010. *The Quarterly Journal of Economics 129*(3), 1255–1310.

Piketty, T. and G. Zucman (2015). Wealth and inheritance in the long run. In A. Atkinson and F. Bourguignon (Eds.), *Handbook of income distribution*, Volume 2, pp. 1303–1368. Elsevier.

Raffinetti, E., E. Siletti, and A. Vernizzi (2015). On the Gini coefficient normalization when attributes with negative values are considered. *Statistical Methods & Applications 24*(3), 507–521.

Reiff, L. O., A. L. Barbosa, et al. (2005). Housing stock in Brazil: estimation based on a hedonic price model. *BIS papers 21*, 257.

Roine, J. and D. Waldenström (2015). Long-run trends in the distribution of income and wealth. In A. Atkinson and F. Bourguignon (Eds.), *Handbook of income distribution*, Volume 2, pp. 469–592. Elsevier.

Saez, E. and G. Zucman (2016). Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data. *The Quarterly Journal of Economics 131*(2), 519–578.

Saez, E. and G. Zucman (2022). Top wealth in america: A reexamination. Working Paper 30396, National Bureau of Economic Research.

Shorrocks, A., J. Davies, and R. Lluberas (2021). Credit suisse research institute global wealth report 2021. *Zurich: Credit Suisse AG*.

Silveira, R. A. R. (1985). *The Distribution of Wealth in Brazil–The Case of Rio De Janeiro: 1870's To 1980's*. University of California, Berkeley.

Smith, M., O. M. Zidar, and E. Zwick (2021). Top wealth in america: New estimates and implications for taxing the rich.

Taleb, N. N. and R. Douady (2015). On the super-additivity and estimation biases of quantile contributions. *Physica A: Statistical Mechanics and its Applications 429*, 252–260.

Torche, F. and S. Spilerman (2006). *Household Wealth in Latin America*. Number 2006/114. WIDER Research Paper.

Vermeulen, P. (2018). How fat is the top tail of the wealth distribution? *Review of Income and Wealth 64*(2), 357–387.

Vicario, C. (2017). *The formation of human capital in pre-modern Latin America*. Ph. D. thesis, Universität Tübingen.

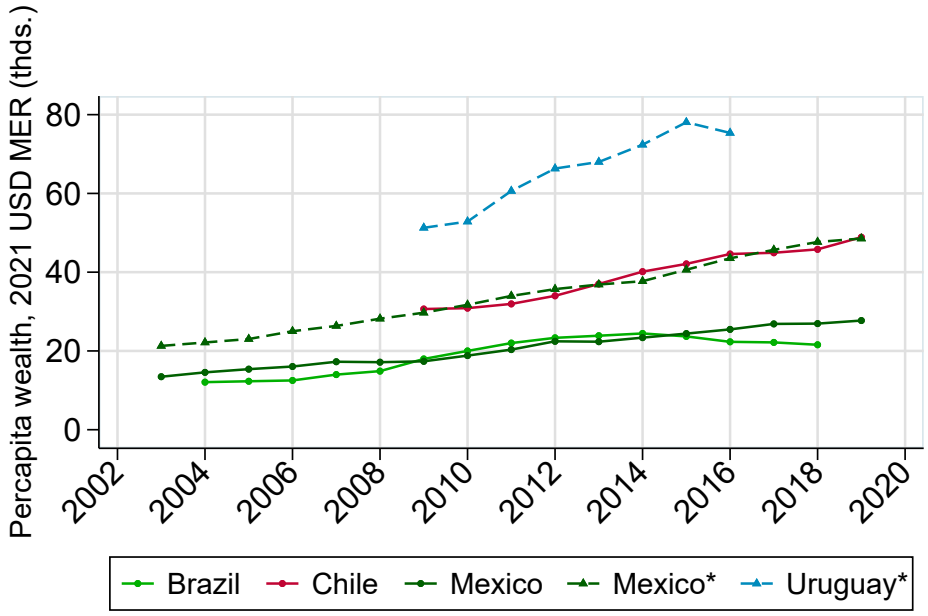
Waldenström, D. (2017). Wealth-income ratios in a small, developing economy: Sweden, 1810–2014. *The Journal of Economic History 77*(1), 285–313.

WIL (2021). Distributional National Accounts Guidelines: Methods and Concepts Used in the World Inequality Database.

# Appendix

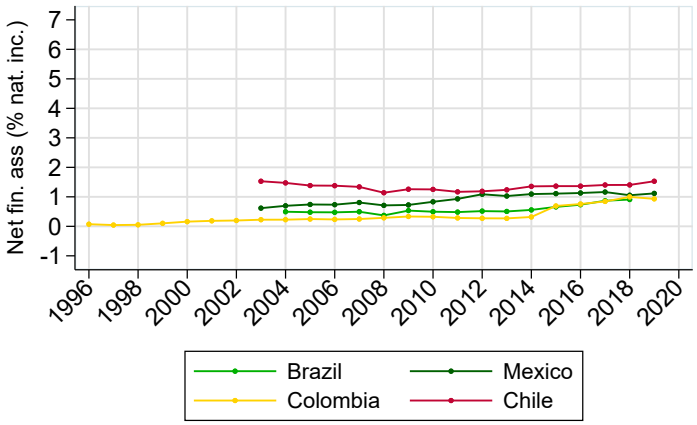
# A Supplementary tables and figures

**Figure A.1:** Private net wealth per capita



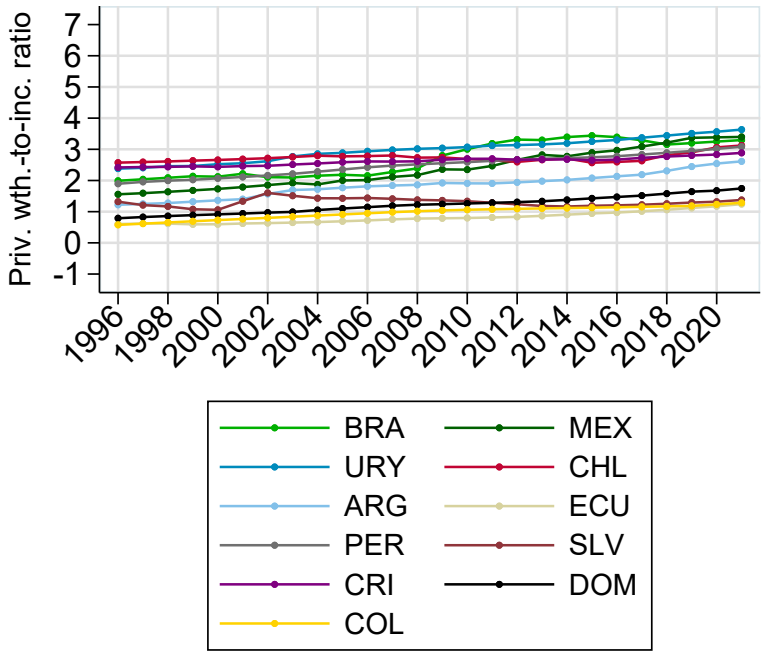

***Notes.*** Solid lines correspond to estimates at market value, while dashed lines, marked with (*) in the legend, indicate a book values.

**Figure A.2:** Net private financial assets over net national income




***Notes.*** Own estimates based on detailed national accounts from local sources.

**Figure A.3:** Private net wealth over net national income (WIDestimates)



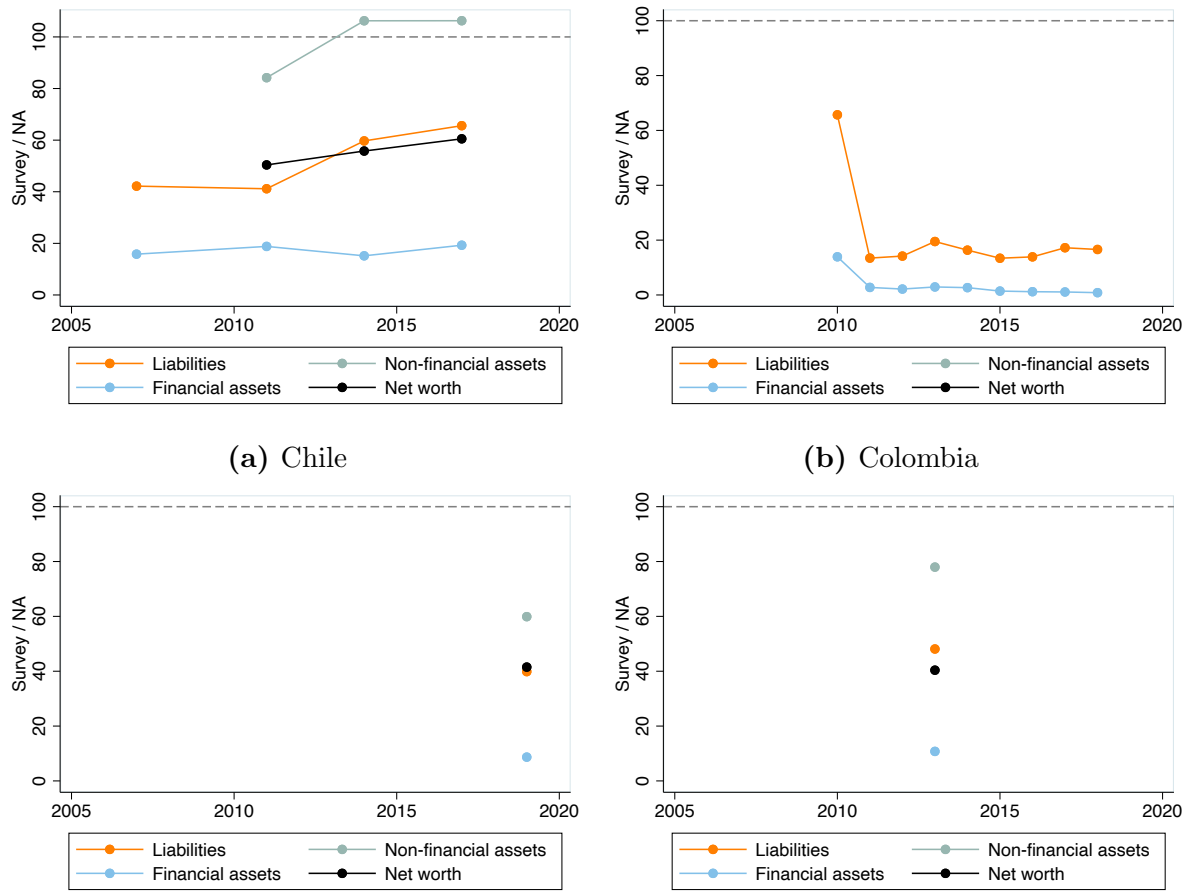

***Notes.*** Source: (Bauluz et al., 2021).

**Figure A.4:** Latin American Financial Surveys

| Country | Name and producer | Time coverage | Sample size (Households) | Geographical coverage | Objective population |
|---|---|---|---|---|---|
| Chile | Encuesta Financiera de Hogares (EFH) - Banco Central de Chile | 2007-2017 | 2.8K | National - Urban | Urban households |
| Colombia | Encuesta de Carga Financiera y Educación Financiera de los Hogares (IEFIC) - | 2010-2018 | 28.1K | Bogotá only for 2010-2016, integrates Cali and Medellín in 2017-2018 | Adults (18+) |
| Mexico | Encuesta Nacional sobre las Finanzas de los Hogares (ENFIH) - Instituto Nacional de Estadística y Geografía (INEGI) | 2019 | 17.4K | National | Adults (18+) |
| Uruguay | Encuesta Financiera de los Hogares Uruguayos (EFHU) - Instituto Nacional de Estadistica de la Universidad de la República | 2014 | 43.4K | National | Households in agglomerations with more than 20K inhabitants |

Notes: Although the Uruguayan survey was implemented for 2 additional years (2012 and 2017), we do not use them in this study because of methodological alterations lowering their asset scope. We also left the following Chilean surveys out of our inventory based on their reduced population coverage, only focusing on the greater Santiago city: 2009, 2009, 2010.

**Figure A.5:** Household survey aggregates vs. macro data




**(a)** Chile

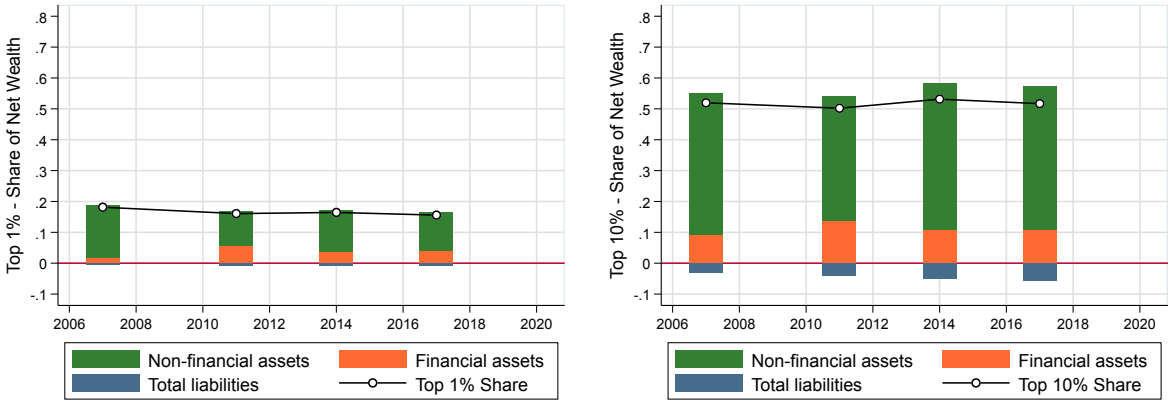
**(b)** Colombia

**(c)** Mexico

**(d)** Uruguay

***Notes.*** Own estimates based on household financial surveys. Macro estimates correspond to those presented in Figure 1. Note than in the Uruguayan case, the only available estimate is book value aggregate private wealth, so if Tobin's Q is lower than one as in Mexico, the survey coverage should be better. Despite big cross-country differences, the coverage of assets and liabilities in the survey is always ranked in the same order: non financial assets have the best coverage, followed by liabilities and financial assets at the bottom. This micro-macro gap is of paramount importance to assess survey based results, which are discussed in Section 4.

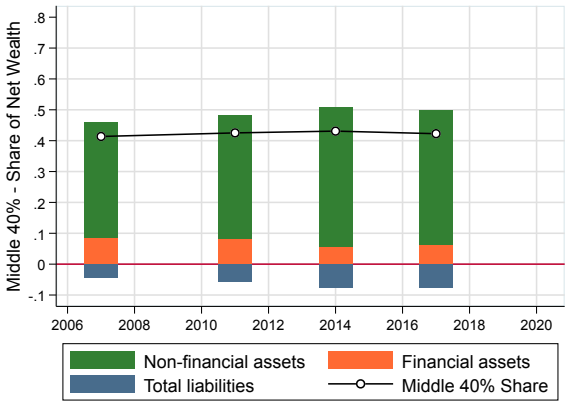
**Figure A.6:** Wealth share and composition, Chile



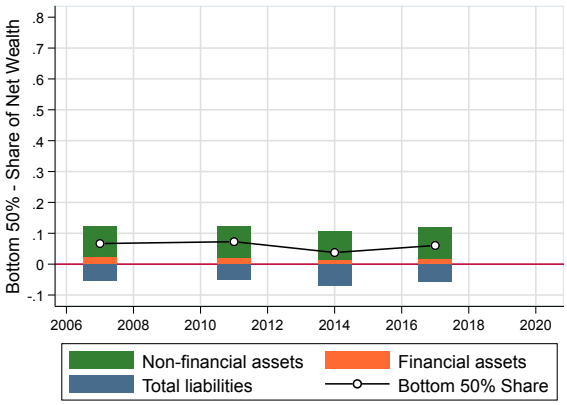

**(a)** Top 1%




**(b)** Top 10%



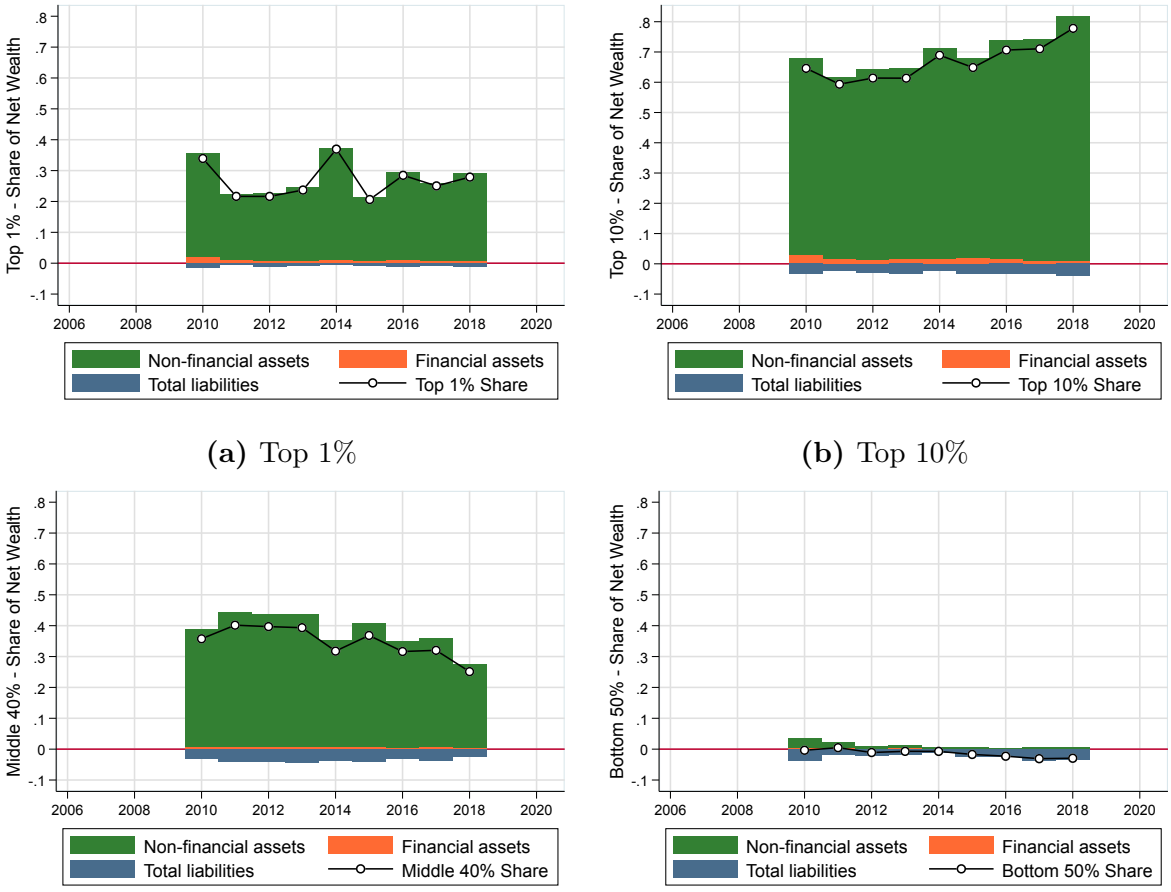

**(c)** Middle 40%




**(d)** Bottom 50%

***Notes.*** Own elaboration based on Chile's household survey (see Figure A.4). Per-capita household wealth.

**Figure A.7:** Wealth share and composition, Colombia




**(a)** Top 1%

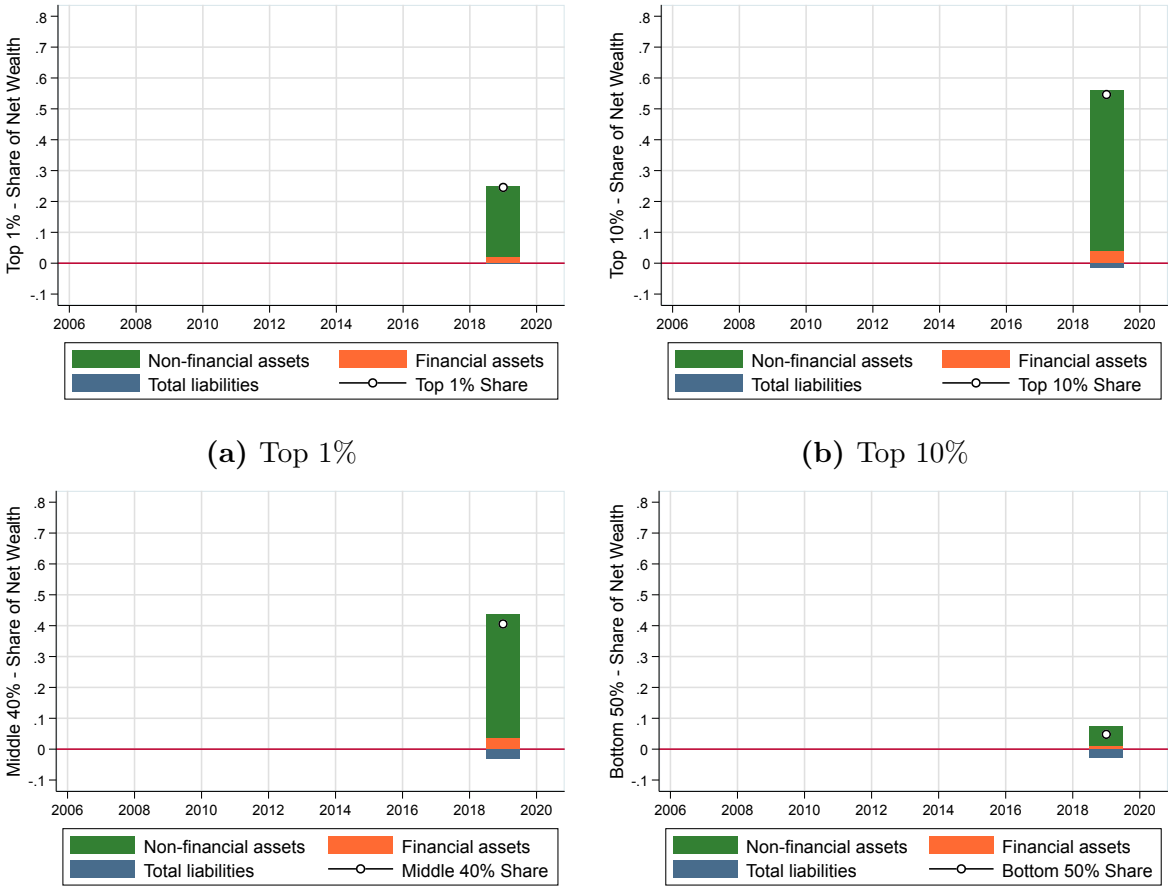
**(b)** Top 10%

**(c)** Middle 40%

**(d)** Bottom 50%

***Notes.*** Own elaboration based on Colombia's household survey (see Figure A.4). Per-capita household wealth.

**Figure A.8:** Wealth share and composition, Mexico




**(a)** Top 1%

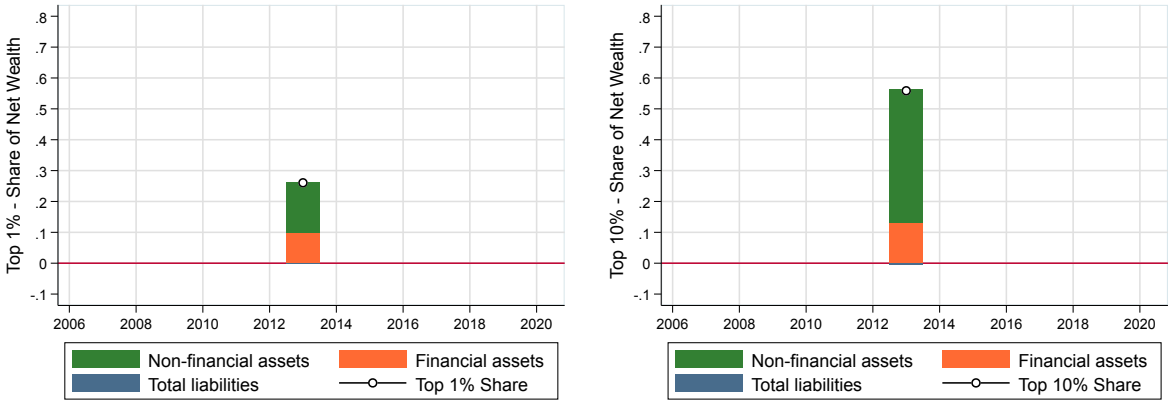
**(b)** Top 10%

**(c)** Middle 40%

**(d)** Bottom 50%

***Notes.*** Own elaboration based on Mexico's household survey (see Figure A.4). Per-capita household wealth.

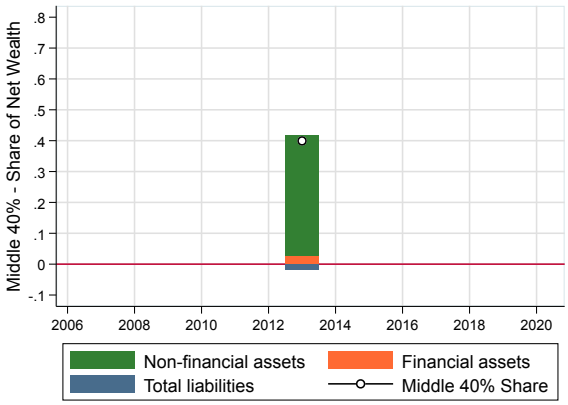
**Figure A.9:** Wealth share and composition, Uruguay



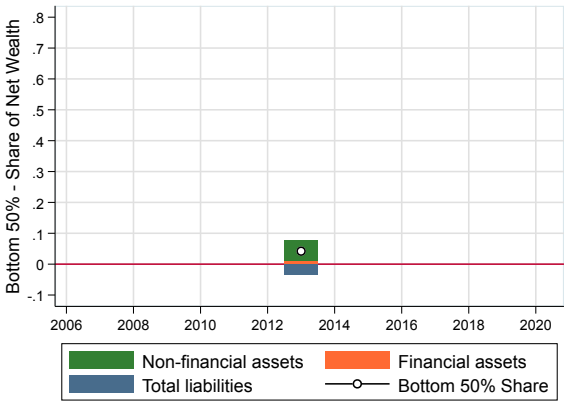

**(a)** Top 1%




**(b)** Top 10%



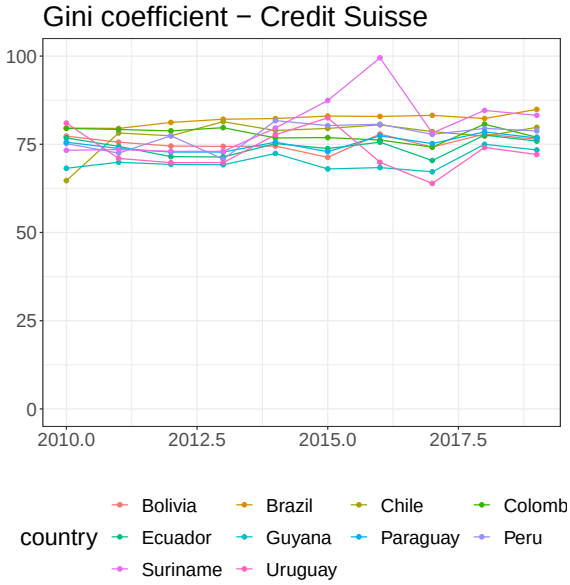

**(c)** Middle 40%



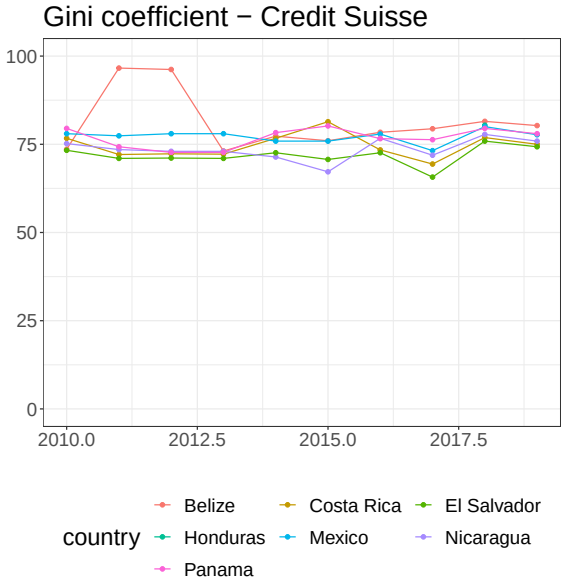

**(d)** Bottom 50%

***Notes.*** Own elaboration based on Uruguay's household survey (see Figure A.4). Per-capita household wealth.

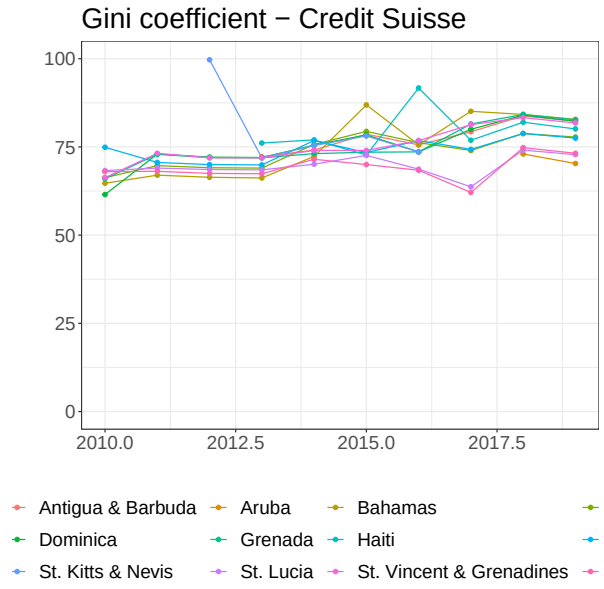
**Figure A.10:** The Gini coefficient in Credit Suisse




**(a)** South America



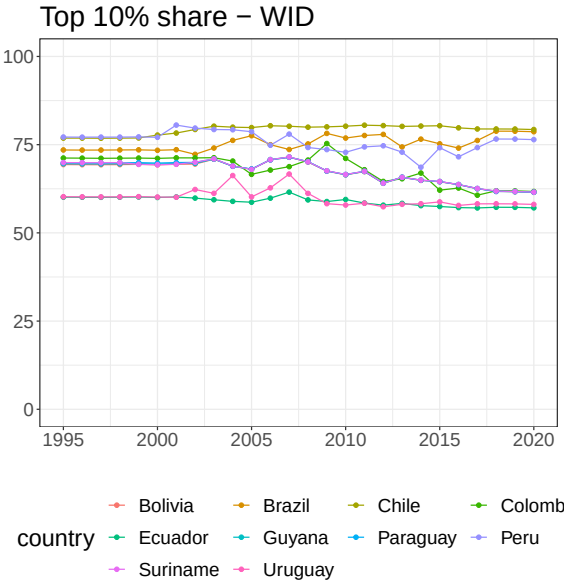

**(b)** Central America



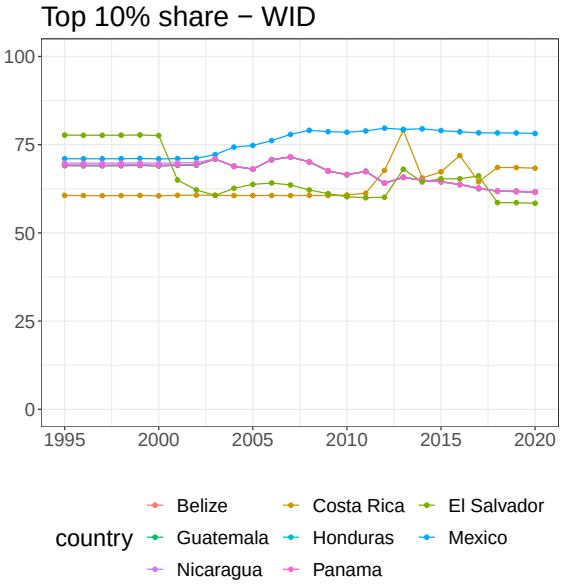

**(c)** Caribbean

***Notes.*** Own elaboration based on Credit Suisse subsequent reports

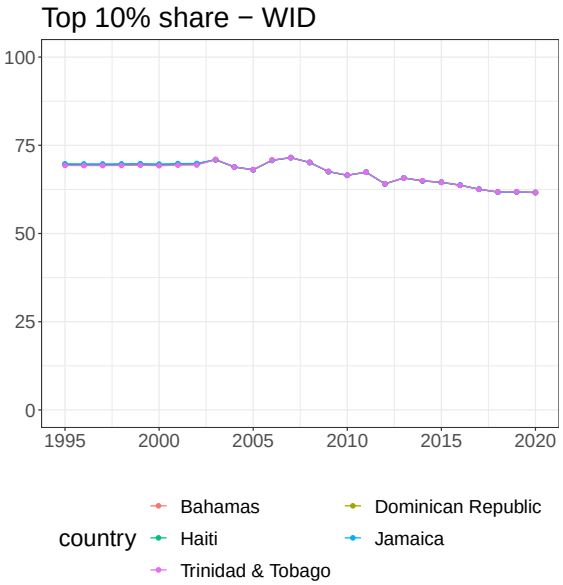
**Figure A.11:** The top 10% share in the World Inequality Database




**(a)** South America



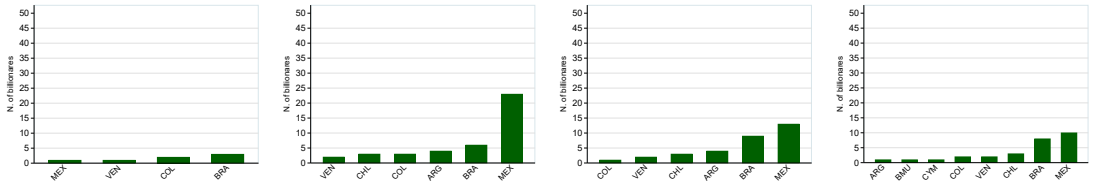

**(b)** Central America




**(c)** Caribbean

***Notes.*** Own elaboration based on wid.world. Estimates for Argentina and Venezuela were removed due to extremely erratic trends that would prevent any visual assessment.

**Figure A.12:** Latin America's number of billionaires, by country and year




**(a)** 1990 **(b)** 1995 **(c)** 2000 **(d)** 2005

**(e)** 2010 **(f)** 2015 **(g)** 2017

***Notes.*** Own elaboration based on Forbes billionaires list.

# Contents