OXFORD

Oxford Open Economics, 2025, **4**, i36–i54
https://doi.org/10.1093/ooec/odae036
Research Article

Wealth inequality in Latin America (2000–2020): data, facts and conjectures

Rafael Carranza[1], Mauricio De Rosa[2] and Ignacio Flores[3,*]

[1]School of Government, Pontificia Universidad Católica de Chile. Av. Vicuña Mackenna 4860, 7821093, Macul, Santiago, Chile, INET, University of Oxford. Manor Road Building, Manor Rd, Oxford OX1 3UQ, UK
[2]Instituto de Economía, Universidad de la República . Gonzalo Ramírez 1926, Montevideo, 11200, Uruguay
[3]Paris School of Economics. 48 Boulevard Jourdan 75014, Paris, France, and Roma Tre. Via Ostiense, 161/165, 00154 Roma RM, Italy
*Correspondence address. Economics Department, Paris School of Economics, 48 Boulevard Jourdan 75014, Paris, France, and Law Department, Roma Tre, Via Ostiense, 161/165, 00154 Roma RM, Italy. E-mail: ignacio.flores@psemail.eu

ABSTRACT

How has wealth accumulated in Latin America and how is it distributed across households? Despite the region being widely recognized for its extreme income inequality, data on wealth are scarce, partial and often contradictory, making it difficult to answer these basic questions. We estimate wealth aggregates based on macroeconomic data and wealth inequality based on recently available surveys and on administrative data. We contrast our results with those in the literature, with a handful of estimates from administrative sources, and with estimates from Credit Suisse and wid.world. In 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, and that wealth inequality is extremely high where it can be measured (with a top 1% share of up to 40%), which is likely to be the case for the whole region.

Key words: wealth distribution; wealth-to-income ratios; household surveys; national accounts; Latin America

Introduction

Latin America still faces major challenges in answering very basic questions concerning, e.g. how much wealth there is in the region and how it is distributed. Official sources are few and scattered, and they often report contradictory estimates. The situation is perhaps worse than that 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). In this paper, we use available sources and estimates to determine which facts about wealth aggregates and their distribution we can reasonably view 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 above data and an 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 reached 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, although built on a substantial set of assumptions, indicate the same upward trend. Moreover, we show that the government sector's net worth, i.e. after subtracting the government's total liabilities, is positive for Mexico and Uruguay and especially high in the former (100–200% of net national income (NNI)), 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 private 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%. 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 than in western Europe and Scandinavia, with estimates ranging from 20 to 30% (Blanchet and Martínez-Toledano 2022). It is in fact close to that in the USA (42%), which is a widely studied extreme case (Saez and Zucman 2016). It also falls below that in South Africa (54.7%), one of the very few developing countries with sound data (Chatterjee et al. 2021). However, administrative data usually fail to describe the lower end of the distribution, particularly in cases with low tax coverage and low state capacity. Therefore, to compute estimates for the bottom 50%, we use recently available household surveys for Mexico, Chile, Colombia and Uruguay, which report shares of

Received: February 2, 2024. **Revised:** October 14, 2024. **Accepted:** October 14, 2020

net wealth well below 10%, and close to zero in some cases, further backing the claim of extreme inequality.

In our second set of results, we classify conjectures that are based on indirect evidence. Specifically, we look into the distribution of capital income—for which there is region-wide evidence—to draw some conclusions on the distribution of wealth for the whole region, for which extreme inequality is likely to be the rule. Based on data from distributional national accounts' estimates for the region (De Rosa et al. 2024), we find extremely high levels of total and capital income inequality. Capital income is strongly concentrated, with a top 1% of the population receiving on average 80–100% of capital incomes, hence almost the entire population reports having no capital income whatsoever. Including imputed rents from homeownership reduces that share to around half. Although capital incomes are admittedly just a proxy of wealth, mediated by a number of other factors, these results do seem to be consistent with high wealth concentration.

In the third set of results, we classify topics about which one can only speculate because data are 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. The increasing number and average wealth of billionaires in Latin America in *Forbes* is 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. Moreover, 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, but the sheer length of the period and the massive gaps in available estimates prevent us from asserting anything confidently.

This paper is organized as follows. Wealth Aggregates discusses wealth aggregates in the region. Distributional Estimates: Methods and Challenges briefly describes and classifies available methods and data sets to estimate the wealth distribution. Making Sense of Inequality Estimates uses such classification to assess our knowledge on estimates based on household wealth surveys and administrative data. Conjectures and Partial Insights discusses the extent to which we can say anything about wealth inequality trends based on capital income distribution, the *Forbes* list of billionaires and historical data. Finally, Discussion: Three Levels of Confidence summarizes our findings and discusses ideas for future research and the way forward to improve precision and accuracy in wealth estimates.

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.

Background and definitions

According to 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, and 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, the total national net wealth W_{nt} is defined as the sum of net wealth held by the private sector W_{pt} and the net wealth of the public sector W_{gt} (Piketty and Zucman 2015; WIL 2021). Net wealth includes the sum of non-financial and financial assets, minus financial liabilities. Private wealth is defined as the sum of personal wealth, held by households, and wealth held by the non-profit sector. Public wealth, on the other hand, is held by the general government sector. Total net wealth is also equivalent to the sum of domestic capital K_t and net foreign assets NFA_t, as depicted in Equation 1.

$$W_{nt} = W_{pt} + W_{gt} = K_t + NFA_t \quad (1)$$

It is interesting to note that, since all national financial assets and liabilities must cancel each other 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, to which two approaches can be taken: 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 Tobin's 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 into 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 USA, the UK, France, Australia, Canada, Italy, Germany and Japan, which were later updated by Bauluz (2019). They document an increase in the wealth-to-income ratio at market values since the 1970s, from 200

to 300% and from 400 to 600% in the 2010s. Along the same lines, 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) estimates 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.

Data and estimation methods

In theory, our estimates of aggregate wealth follow the same definitions described in the above subsection. In practice, we distinguish three different approaches in their construction. The first and most simple is that of Mexico. The country's national balance sheets are produced on a yearly basis by the National Institute of Statistics and Geography (INEGI is 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 and 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 subcomponents 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), who provide estimates of total market valuation based on the method of hedonic prices for 2012–2017. The underlying data sets are exhaustive cadastral records of national housing stock and the national registry of yearly transactions on the housing market, which are recorded 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 is its Spanish abbreviation). The value of agricultural properties is obtained by multiplying the fiscal valuation provided by the Chilean tax authorities, which is reported on 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, but they only contribute marginally to aggregate wealth (for more details see Flores and Gutierrez 2021).

In Brazil, we adopt another approach to solve the same problem, distinguishing two subcomponents of non-financial assets: housing and other non-financial assets. We start with an anchor estimate on housing stock valuation for 1999 from Reiff and Barbosa (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 is its abbreviation 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, which is defined as follows:

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

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 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 to 2018, For years when the survey was not run (2000, 2010). Data for the house price index are sourced from the Bank of International Settlements (BIS), detailing nominal residential property price indices for 2001–2018. We extend this series backwards using growth rates from 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 another study, by combining a variety of sources, namely cadastral administrative data, firms' tax records, a household wealth survey and the International Investment Position from the Balance of Payments (for a full description, see De Rosa 2024). These sources are used to estimate the aggregate domestic capital Kt, i.e. the sum of all non-financial assets of the economy, which results mainly from aggregating the cadastral value of urban and rural properties (adjusted to market prices) from the private sector, the book value of corporations computed based on firms' tax records, and adding the government's non-financial assets and the NFAt, 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 viewed as preliminary and would greatly benefit from further scrutiny and debate.

Aggregate wealth

Our main outcome in studying 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 via 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 Fig. A.1, which shows quite steady upward trends in real average wealth too.[2]

With regard to levels, wealth-to-income ratios at market values increased from 200% of NNI to over 300% in Brazil and Mexico between 2003 and 2019. In Chile, estimates begin later—in 2009—with close to 250% gaining nearly 100% in 10 years. estimates follow the same definitions as those from Bauluz (2019), which locates most developed countries in the 500–700% zone. Despite

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

[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 the discussion of distributional or aggregate estimates in the literature (see, e.g. Piketty and Zucman (2014)).

their steep increase in the last few decades, Latin American countries seem to be at the lower end of the spectrum.

Financial net wealth is most important in Chile, reaching 100–150% of NNI over the period (see Fig. A.2). That is close to half of the country's total private wealth. The estimates for Mexico and Brazil are lower, reaching close to 100% only in the most recent years, having started with even lower values at the beginning of the period. In the case of Brazil, the increase in 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 and 2015, only matching the levels of Mexico and Brazil in the late 2010s. Unless Colombia's non-financial assets are much higher than those of the rest of the countries, it is likely that Colombia's total private wealth is lower than that in Brazil, Chile and Mexico.

When the book value definition is considered, estimates are much higher, as depicted in Fig. 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, the private wealth-to-income ratio increases from over 400% to about 500% in the 2009–2016 period. The Mexican increase, from 300 to 600% in 15 years, is also rather spectacular.[3] Unfortunately, no country other than Mexico allows comparisons of book and market values, casting doubts on whether the Mexican large gaps should be seen 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 Uruguay's similarly high 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, Fig. 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 for 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 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 in the cases of Colombia, El Salvador and the Dominican Republic, for which it is difficult to make assertive statements. Naturally, these estimates show nearly 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.

[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 Fig. A.1)

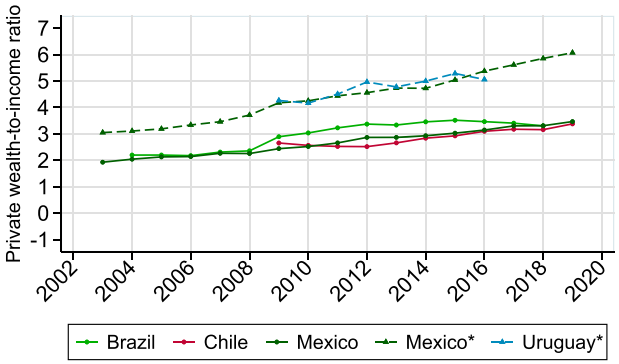


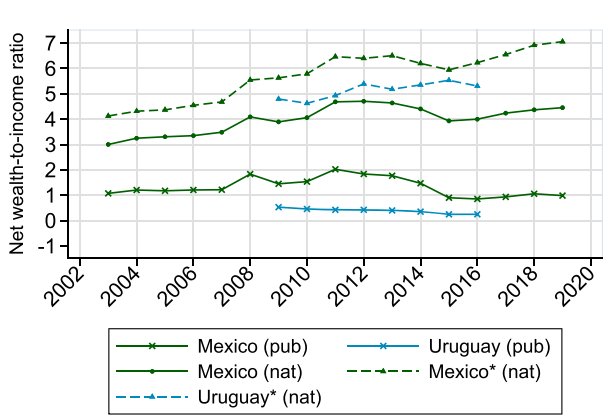
Figure 1: Private net wealth over net national income.
Notes: Solid lines correspond to estimates at market value, while dashed lines, marked with (*) in the legend, indicate a book values.

In Fig. 2 we show the remaining components of the equation. Both national and public wealth are depicted in Panel 2(a) for Uruguay and Mexico, which are the only countries that allow such a comparison. Again, Mexico allows for the comparison of both book and market values.

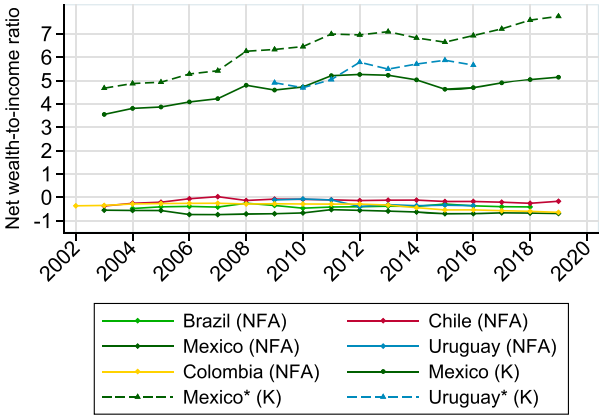
Although public wealth falls in both countries during the second half of the period, it remains positive overall. It stays at particularly high levels in the case of Mexico, where it reaches 100–200%. This contrasts with rich countries, where public wealth has decreased dramatically since the 1970s, 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 wealth, although the downturn in public wealth had a visible effect in Mexico during the 2011–2016 period.

Panel 2(b) 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 and 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, is 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, which are benchmarked 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. 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 -50% in 2006) to -62% in 2017. El Salvador does not present this downward trend, but it does have a constant negative share under -35%. As for the countries' net position, except for the



(a) Public and National Wealth



(b) Domestic Capital (K) and Net Foreign Asset Position (NFA)

Figure 2: The components of national wealth.
Notes: Series with (*) indicate book value net wealth.

cases of Argentina and Venezuela, all the remaining countries in the region present negative values.

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 and portfolio composition, among others. Most of them differ in key aspects that make comparisons difficult. This section explores both theoretical and practical challenges in measuring wealth inequality.

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 is (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 aspects such as the 'right' measure of wealth, asking, for instance, whether we should look at gross or net wealth. The distinction between national and domestic wealth is also important, i.e. where the words 'domestic' and 'national' have the same meaning as in gross domestic product (GDP) and 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-household 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 pensions. Another critical distinction, e.g., is whether we treat wealth as future consumption or as a proxy of socio-economic 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, thus 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 (2021)).

Second, we need to look into the measurement issues that arise when estimating wealth inequality. A few well-known issues prevent 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

[4] This is not the only way to characterize 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.

corrections have been proposed, e.g. by Raffinetti et al. (2015). An example of the latter is the problem of sparseness when measuring income shares at 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 and for summarizing 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 less interest to us, as it will be mostly dictated by the available data and the adjustment methods allowed by them. As we discuss below, depending on the data and measure of inequality, methods could range from a simple descriptive statistic—say, the top 1% share of wealth using administrative records—to complex methods that rely on regression or machine learning-based predictions when there are no data available for that specific country-year, as is the case for both Credit Suisse (CS) and the World Inequality Lab's estimates.

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, but some countries have multiple sources that can be assessed and compared. In turn, the type of available data shapes what methods can be used and ultimately what we can 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 while Table 3 presents the main methods used in the literature.

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 surveys are described in Table 2. These are the same four wealth surveys used in a recently published study by Gandelman and Lluberas (2024), 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 since 2017 it has also included 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), commissioned 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 1 year, namely Chile and Colombia.[5]

Wealth tax data, typically put together by tax authorities, are a good source of information on the very rich, but they are not exempt from problems, as they are 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 can be adjusted 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 have recently become available, we combine the work of the 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 on 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, which serves 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 Wealth Aggregates.

Similarly, data on capital income can be combined with the rate of return of different assets to construct the distribution of wealth zusing the 'capitalisation method'. It has gained notoriety lately since the wealth distribution study for the USA by Saez and Zucman (2016), although the method was originally proposed by Giffen in 1913 and famously applied for instance for the UK by Atkinson and Harrison (1978). Since then, a number of studies for European countries have emerged (e.g. Martínez-Toledano (2017); Garbinti et al. (2021)). The method relies on a sufficiently detailed capital income distribution (usually based on tax returns) and estimates the underlying wealth distribution by multiplying capital incomes 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 with new estimates for the USA (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 (2024), who 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.

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

Country	Household survey	Wealth tax	Census	Rich lists	Estate tax	Inheritance tax	Capital income (admin.)
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	X
Costa Rica							X
Cuba							
Dominica							
Dominican Rep.				X			X
Ecuador				X		X	X
El Salvador							X
Grenada							
Guatemala				X		X	
Guyana							
Haiti							
Honduras							
Jamaica							
Mexico	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. Estate tax is imposed on the entire estate of the deceased before distribution to heirs, while inheritance tax is levied on each individual beneficiary based on the value of what they inherit. Income data refer to countries for which, on top of household surveys, tax data of capital incomes are available. (∗) indicates that the tax does not exist in the country but a data-set with analogous information is available.

Table 2: 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 Estadística de la Universidad de la República	2014	4.3K	National	Households in agglomerations with more than 20K inhabitants

Notes: Although the Uruguayan survey was implemented for two additional years (2012 and 2017), we do not use them in this study due to 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, 2010.

Supplementary data sources

Rich lists, such as those compiled by *Forbes* or the *Sunday Times* in the USA and the UK, 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 it could report on individuals or families, as well as assets within national borders or not. These data sources provide useful information when complemented with other sources, e.g. 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 CS use a combination of data

Table 3: 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.

sources in their estimates of global wealth inequality (Shorrocks et al. 2021; WIL 2021), including surveys, tax records and rich lists, among others. Similarly, rich lists have been used, e.g., 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 intrapolated 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 (2011) uses 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 CS'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 (Bajard 2021; Bauluz 2021), which mainly differ from Davies (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 whatever data are available. For that exact reason, it is also the most heterogeneous approach. As such, making inferences based on these estimates of wealth inequality requires 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 currently. The estate multiplier method has been perhaps the most commonly used method for studying wealth distribution, especially from a historical perspective (Piketty et al. 2006; Kopczuk 2015; Alvaredo et al. 2017). It is based on estate tax data, which is a way to examine 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 the mortality rate among individuals, hence providing a personal wealth distribution of the living population (Piketty and Zucman 2015). Its basic inputs are estate tax records and 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 recently been suggested that average mortality rates may be applied without biasing estimates, thereby 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 (2024) 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 results of the main capitalization method. While the wealth tax depicts similar top 0.1% real estate estimates to the capitalization method, both the wealth survey and the estate multiplier method result in a lower top 0.1% share, but higher top 10% and top 1% shares. This is an indication that, at least in the context of Uruguay, the capitalization method's real estate inequality estimates are likely to be a lower bound, except for the very top of the distribution.

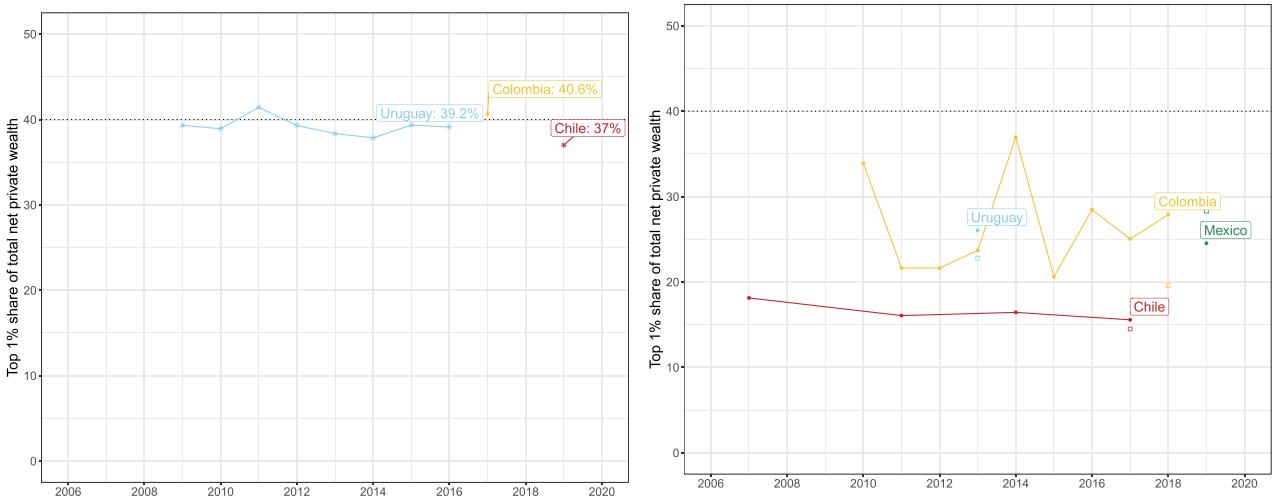
Making sense of inequality estimates

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.

Evidence from the top of the distribution

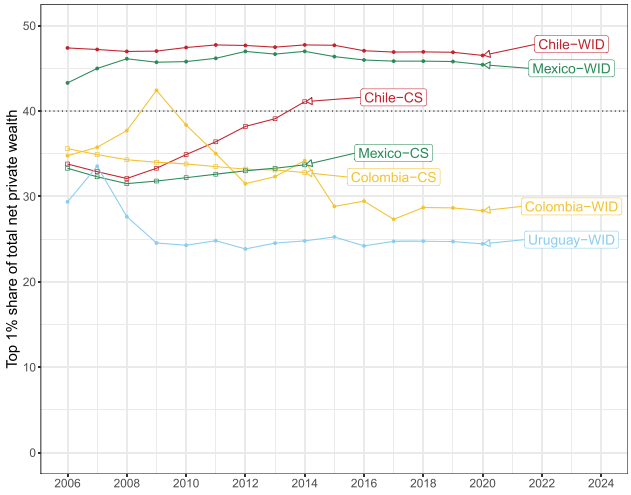
Panel (a) in Fig. 3 summarizes the top 1% shares from many different sources in the three countries with the most comprehensive wealth estimates in the region, namely Chile, Colombia and Uruguay. Panel (b) complements these estimates with survey-based estimates for the four countries for which there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

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 report a comprehensive decomposition of incomes, allowing for the use of the capitalization method described in Distributional Estimates: Methods and Challenges.



(a) Benchmark (administrative data)

(b) Survey data



(c) Regression-based estimates

Figure 3: Top 1% Wealth shares in different sources.
Notes: Own elaboration based on selected articles, survey data, wid.world (WID) and CS. Panel (a) estimates market values for Colombia and Chile, and book values for Uruguay. In Panel (b) filled markers are own estimates and hollow markers are from Gandelman and Lluberas (2024). Both our survey-based estimates and those in Gandelman and Lluberas (2024) show the top 1% for household wealth, as opposed to individual wealth in Panels (a) and (c).

Individual estimates for these countries are surprisingly close, ranging between 37% for Chile and just above 40% for Colombia.[6]

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, those for Uruguay are based on capital income tax data, capitalized to recover the underlying wealth. Nonetheless, one should expect them to coincide given (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. In principle, the sign of the bias could

[6] In a recent exercise, De Rosa and Vilá (2024) corrected wealth household surveys using the *Forbes* billionaires list—based on Vermeulen (2016 2018)—and obtained slightly higher estimates for the top 1% (of households, not individuals) for Uruguay (approximately 41%), and much higher for Chile (approximately 47%) but lower for Colombia (34%). Estimates were Mexico are close to the Uruguayan top 1% share (42%).

be positive or negative, since both numerator and denominator change. In the end, it is a matter of the asset composition of the top 1% as compared to that of aggregate wealth, since this will determine which one of the two is most affected by the change in valuation. In the case of Uruguay, given that financial assets are over-represented in the top 1% of the distribution, it is likely that market value's top 1% is lower than that of book value, provided Tobin's Q is below 1.

Moreover, the total wealth in Chile and Uruguay, i.e. the denominator of top shares, is the aggregate private wealth presented in Wealth Aggregates, which is 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 Fig. 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 (Fig. 4), 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 (2024).

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 to most available 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 because of 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 (Fig. 4).

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, similar to how 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 that of Torche and Spilerman (2006). Using mainly household income surveys, they studied wealth ownership and inequality in 16 Latin American countries using a combination of published data on wealth holdings and household surveys. They found that home ownership is more evenly distributed than in high-income countries (e.g. the UK), but this is explained by the prevalence of squatting settlements in urban areas. Based on rental value reported by households, they estimated that 25–40% of all housing wealth is held by the top 10%, depending on the country. At 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.

In Fig. 5 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 the 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, Fig. 5 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 2024) or under distributional national accounts (De Rosa et al. 2024). Interestingly, the Gini coefficients show a very similar pattern to that of the top 10% shown in Panel (b), when comparing both 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.

Survey data also allow us to plot the distribution of net wealth as a whole. Figure 6 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 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

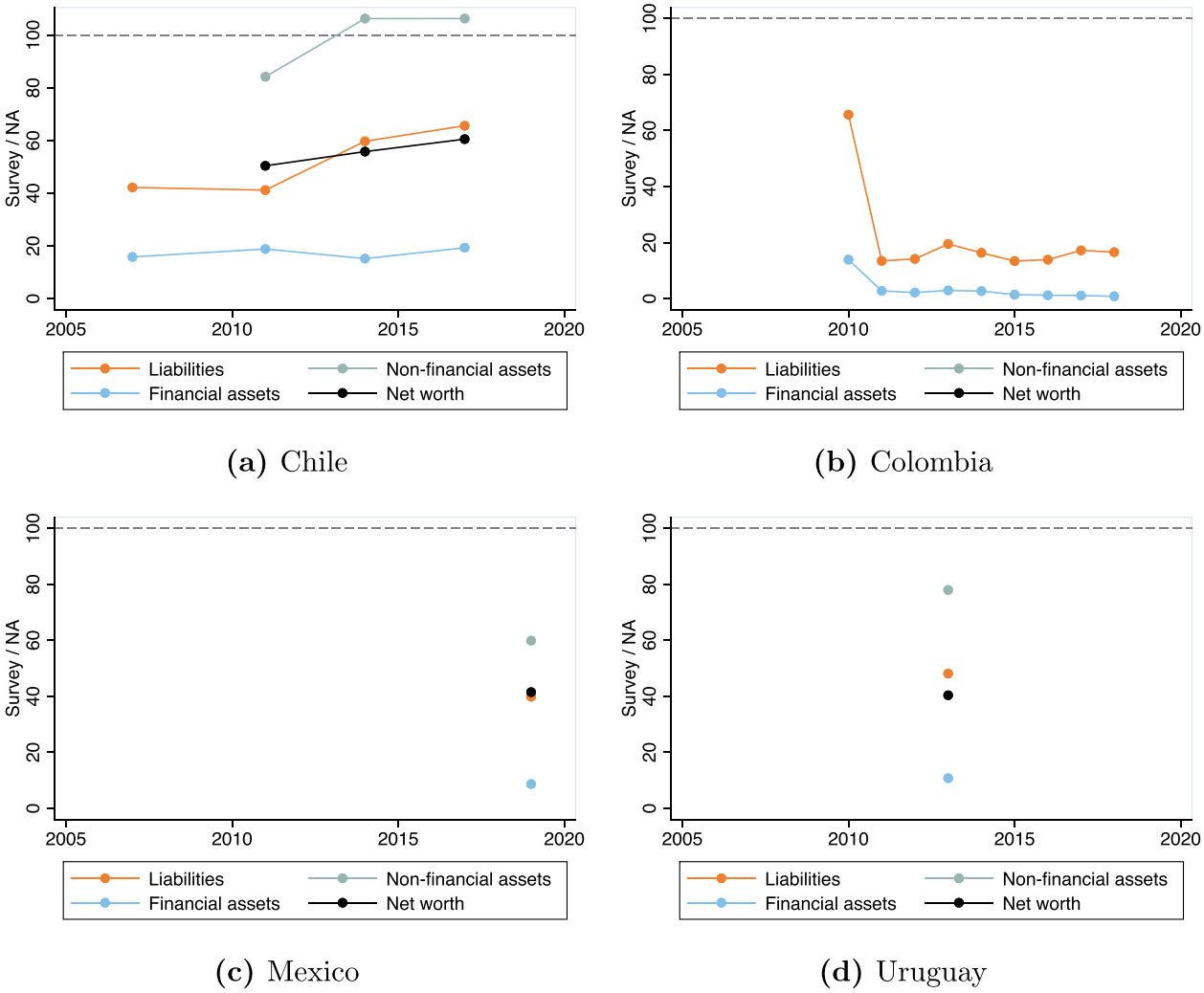


Figure 4: Household survey aggregates vs. macrodata.
Notes: Own estimates based on household financial surveys. Macro estimates correspond to those presented in Fig. 1. Note than in the Uruguayan case, the only available estimate is book value aggregate private wealth, so if Tobin's Q is lower than 1 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 in assessing survey-based results, which are discussed in Making Sense of Inequality Estimates.

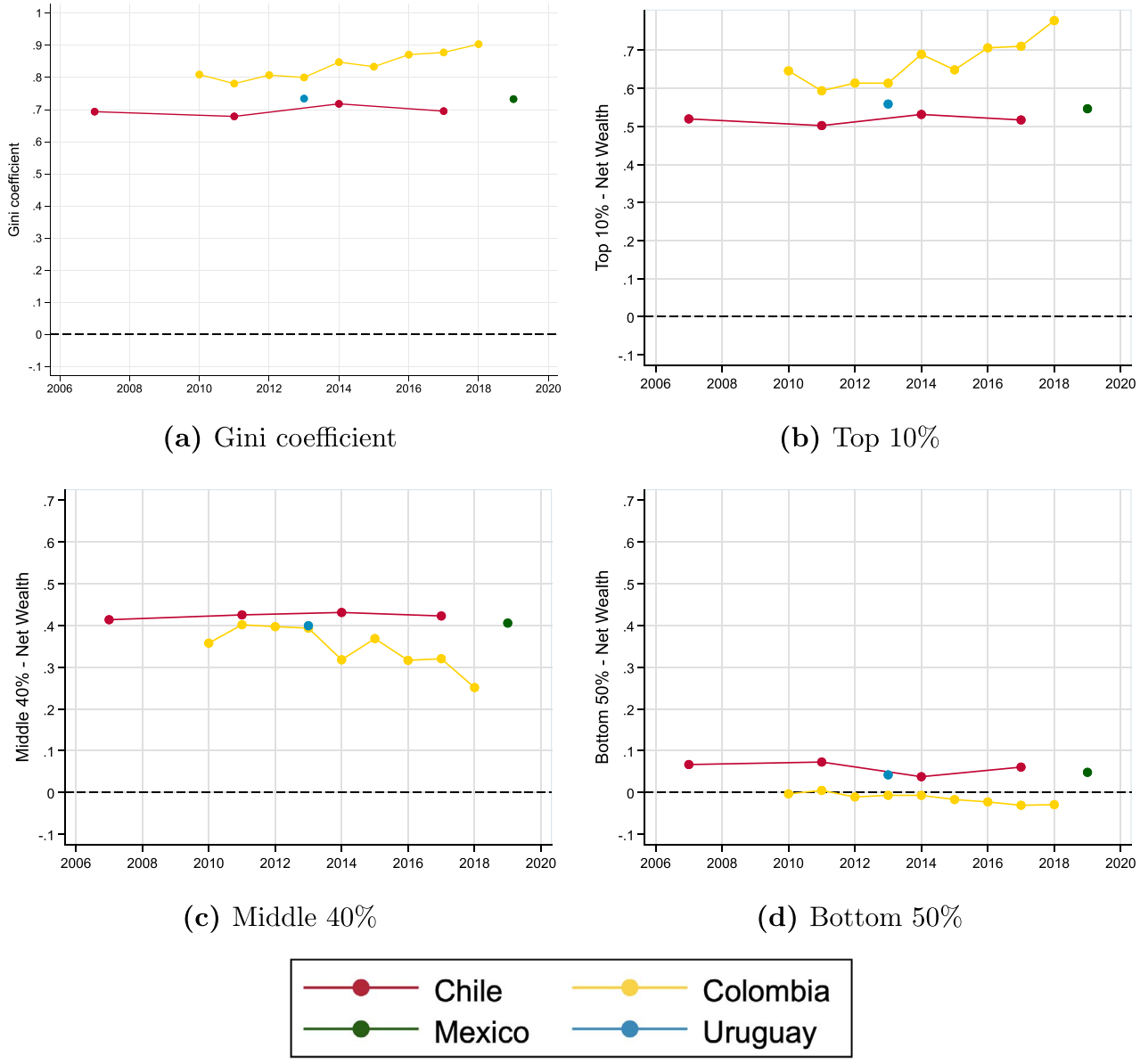
at earlier percentiles (P30-P40), while this happens further down the distribution for Mexico (P40-P50). Colombia shows the most extreme curve, with the increase starting at around the 70th percentile. At the top, Colombia and Chile show the highest levels of net wealth, at around USD1.5 million (PPP), 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 to, but do not fully explain, the low coverage of both aggregate assets and liabilities in surveys (Fig. 4).

Regression-based estimates

Regression-based estimates differ substantially in how they are constructed. They can be based on extrapolations—e.g. 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 using *Forbes* data, as is the case for the CS estimates. Alternatively, more recent estimates rely on machine learning techniques drawing information from the income distribution, as in 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 suited to giving an accurate picture of inequality levels and trends for any given country. We see that most of these estimates are built with either scarce or no data in the Latin American region, especially for the Caribbean.

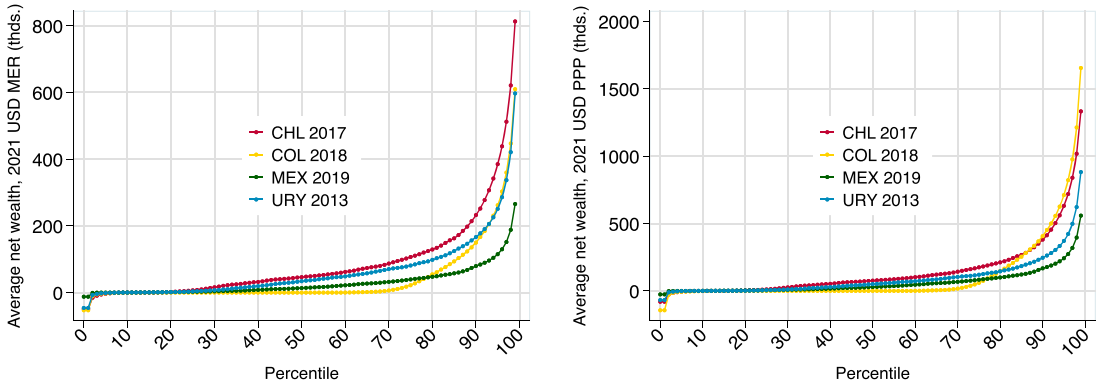
Credit Suisse's reports are available from 2010 until 2021 (Shorrocks et al. 2021), and include direct estimates for Uruguay and Chile, as depicted in Fig. A.8 (the methodology is described in Davies (2011); Davies et al. (2017)). They use national accounts, wealth surveys as well as a correction of the right tail of the distribution based on rich lists such as *Forbes* and *Fortune* magazines,



(a) Gini coefficient (b) Top 10%

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

Figure 5: Wealth inequality based on household wealth surveys.
Notes: Own elaboration based on countries' household survey (see Table 2). Per-capita household wealth.



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

Figure 6: Average net worth by percentile, latest year.
Notes: Own elaboration.

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 aged 20 or older (Davies et al. 2017).[7] They proceed in three steps: (i) establishing the aggregate level of wealth for each county based on household balance sheets or household surveys; (ii) estimating wealth distribution based on surveys or income based on the relationship between wealth and income distributions; and (iii) correcting 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 (harmonized 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 5 years and region-based adjustments for countries with fewer or no billionaires.

The World Inequality Database's data and methodology for the estimates of wid.world revolve around a series of articles covering different steps and regions. For Europe, the main discussion is presented in Blanchet and Martínez-Toledano (2022), based on adjustments and extensions done in previous estimates. The imputation procedure for countries with no data is described in Bajard (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 a similar income inequality. Similarly to CS, 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 Figs A.8 for CS and A.9 for WID.

The estimates for CS 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 a rising concentration at the top starting in 2014–2015. 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 CS and range between 60 and 75%, with most around 70%. Just as in the CS 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.

[7] 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.

When contrasted with estimates using administrative data we find a heterogeneous picture. From Fig. 3, we can compare the top 1% share across countries, particularly how both CS and WID estimates compare to 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 CS 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.

Conjectures and partial insights

Up to this point, we have mostly focused on distributional outcomes for the four countries for which there are 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 the contours of 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.

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 homogeneous rates of returns not only among individuals—which is the standard assumption—but also between types of assets. While 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 wealth distribution.

Figure 7 shows the share of capital income accrued by the top 1% of individuals who receive capital incomes. Figure 8, 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. (2024). Figure 7 shows a large degree of variability in the share accrued by the top 1%, and even some cases with a significant degree of within-country instability. A number of comments are in order. First, the instability is in part related to considering only capital incomes at the very top of the distribution. It is worth mentioning that both the top 10% and even the top 5% of the distribution virtually amount to 100% of capital incomes, so variations are in part the result of changes in aggregate capital incomes. Second, this high variability is one of the reasons why we argue that, at least with these data (corrected surveys scaled up to national accounts' aggregates), it is probably unwise to perform the capitalization method, since it is equivalent to zooming into these distributions (by multiplying capital incomes by the inverse of the

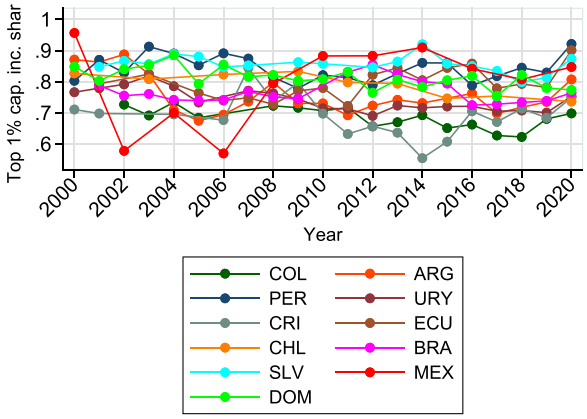


Figure 7: Top 1% capital income's share by country.
Notes: Own elaboration based on Distributional National Accounts estimates from De Rosa et al. (2024). Total capital incomes received by individuals, scaled up to household sector's aggregate capital incomes (i.e. not including imputed undistributed profits).

rate of return) and hence almost certainly producing an extremely unstable set of wealth distribution estimates. Third, and most importantly for our purpose in this paper, these estimates do show an incredibly high concentration of capital incomes, with the shares of the top 1% being in the 0.8–1 range for the most part. Regardless of any consideration, and although there is nothing we can say for sure about trends, this does show that wealth is very concentrated at the top of the distribution across the whole region, not just in the handful of countries for which we have wealth survey or administrative data.

This is further confirmed in Fig. 8, which shows that most individuals do not receive any capital income. This is consistent with our discussion on survey-based estimates in which the bottom 50% owns less than 10% of net wealth. If we exclude imputed rents (left panel), most if not all of 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 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 shares decreased somewhat, from around 50% in 2000 to 45% by the end of the period.

From Fig. 8, we can draw some conclusions. 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 quite a stable pattern over time, with a slight decrease in the second half of the period. Together, Figs 7 and 8 paint a picture of high 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.

Forbes billionaires list

Figure 9 depicts the number of billionaires by country for the 1988–2019 period in Panel (a) (see details by year in Fig. A.10 in the Appendix), as well as the number of billionaires by 100 million adults in Panel (b). Brazil is by far the country with the most billionaires on the *Forbes* list since the mid-2000s, surpassing Mexico after a steep increase that reached up to 60 individuals by 2014. 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. Of those that 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 billionaires' wealth in relation to average private wealth.

Figure 10 shows Latin American billionaires' average wealth vis-à-vis the rest of the world in Panel (a), indicating an increasing trend that spiked during the commodity boom. By the end of the period, Latin American billionaires were on average equally as 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 other countries in the *Forbes* billionaires list. Both shares follow similar trends, with both the share of individuals and total wealth being 5–10% of that held by the rest of the world.

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.

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 18th and 19th 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 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, in terms of both composition and inequality.

Historical analysis of wealth inequality relies on censuses, probate inventories or tax records (or a combination of these) 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 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 censuses, 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 that were more prevalent in urban settings, such as factories or workshops, as noted by Galli et al. (2022).

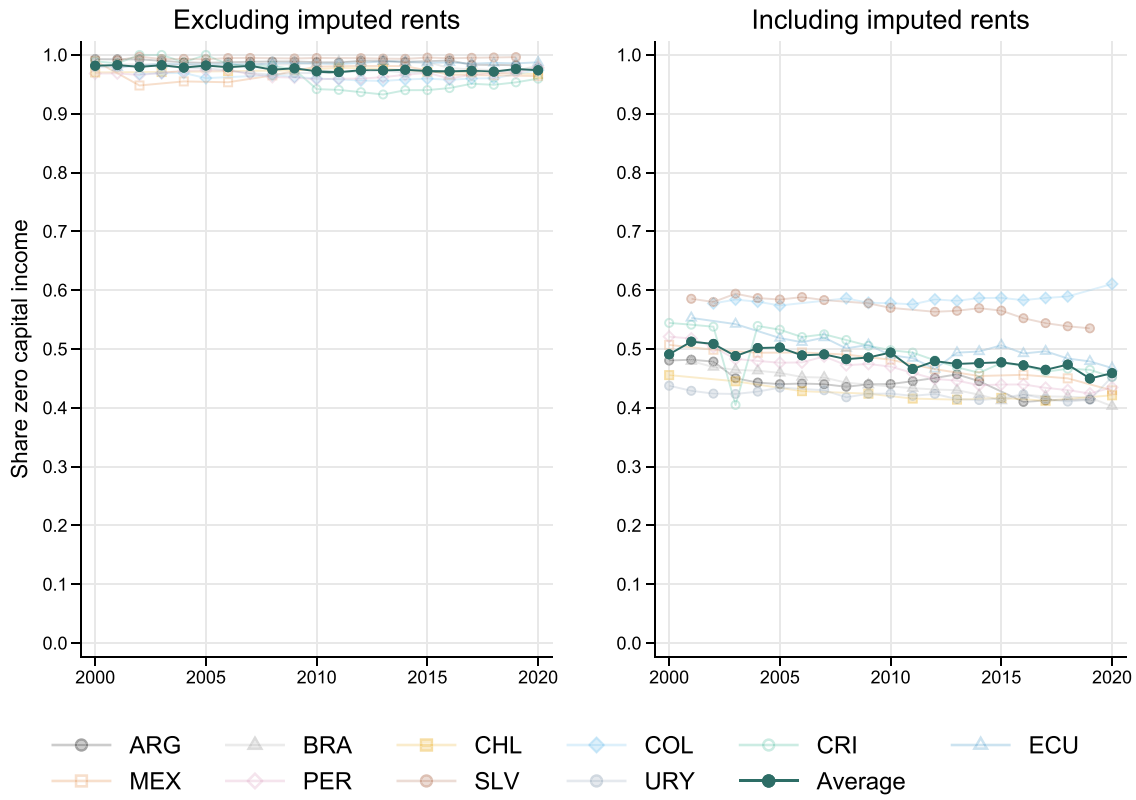


Figure 8: Share of respondents with zero capital income by country.
Notes: Own elaboration based on DINA estimates from De Rosa et al. (2024).

Overall, these articles find that wealth inequality in the post-colonial 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 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) show 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 and 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.

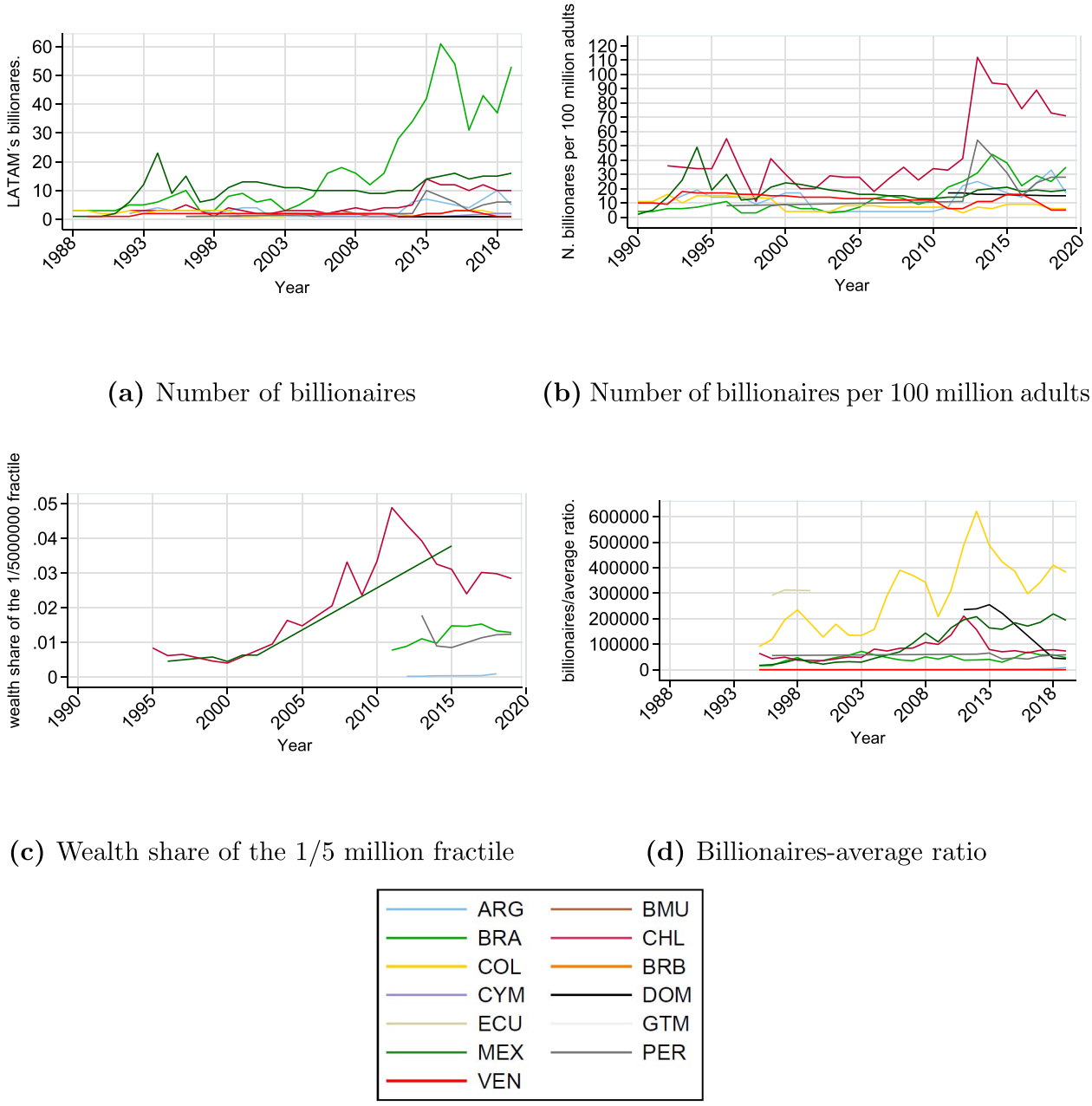
Discussion: three levels of confidence

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 are only available for a few countries, thus substantially restricting our capacity to provide region-wide conclusions. However, for the few countries for which there are 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, from which one may attempt to elucidate tentative conclusions. The aim of this section is to distinguish these groups.

We can be reasonably confident that the concentration of wealth 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 Making Sense of Inequality Estimates, 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 and the UK, where it is about 20–25% (Atkinson 2018; Garbinti et al. 2021) and close to very unequal countries such as the USA (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 enable a solid starting point for the comparison.[8]

In line 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 Fig. 10. Considering the fact that Latin American countries have relatively lower average wealth, this finding 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

[8] 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) and Garbinti et al. (2021) also use the latter method, but Atkinson (2018) is based on the estate multiplier method.



(a) Number of billionaires

(b) Number of billionaires per 100 million adults

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

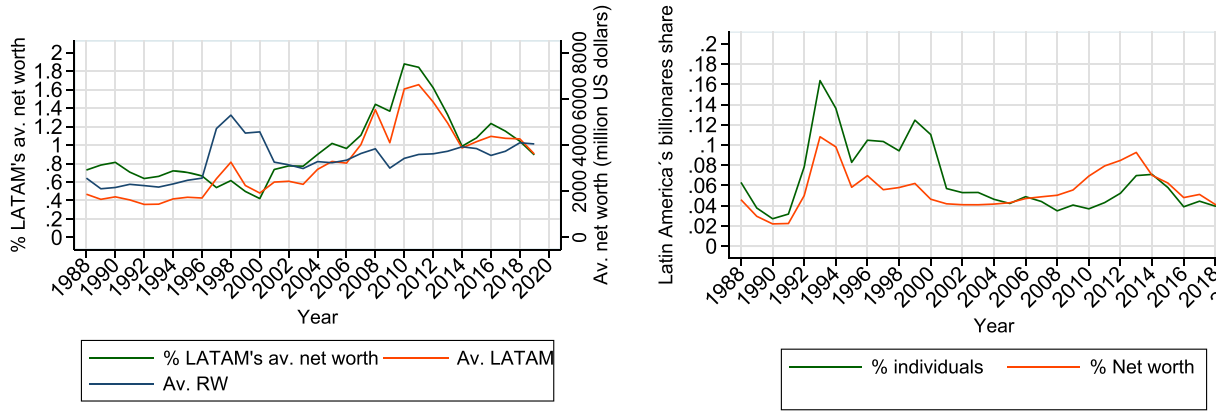
(d) Billionaires-average ratio

Figure 9: Latin America's number of billionaires, 1988–2017.
Notes: Own elaboration based on *Forbes* billionaires list and aggregate private wealth from wid.world.

the bottom, thus reinforcing the notion of high overall net wealth inequality.

For the remaining countries for which there are 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. Certainly, 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 in 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. But capital incomes, as opposed to total incomes, which are more closely related to wealth distribution, do show a very high level of concentration across the region, which leads us to believe that wealth concentration at the top is indeed a regional feature.

This fragmented image is at least qualitatively consistent with estimates from CS 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 20 higher than in Europe. The top 1% shares reported for countries such as Brazil by CS are between 45 and 49%, substantially higher than in the rest of the world. Exercises in which surveys are corrected using billionaires lists also point at a 1% share of households between 41 and 47% for Mexico, Chile and



(a) Average wealth

(b) LATAM vs Rest of the World

Figure 10: Latin America's billionaires net worth, 1988–2017.
Notes: Own elaboration based on *Forbes* billionaires list.

Uruguay. While most of these estimates are based not on direct observation for most cases but on indirect estimation procedures as discussed in Distributional Estimates: Methods and Challenges, they do end up reinforcing our conclusion: wealth inequality is relatively high in the region compared to most of 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 Aggregate Wealth, 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 in line 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 the position of net foreign assets are falling.

While exhaustive, our review only allows us to speculate about wealth inequality trends. Having data for 1 year at most, wealth household surveys are not enough to provide hints about the evolution of inequality in the region, nor are 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. *Forbes* billionaires data, which only capture very few individuals at the very top of the distribution, indicate that the number of billionaires, the countries from which they originate and their average wealth have grown over time, especially as a result of the commodity boom of the 2000s. The billionaires lists suggest that, even if overall wealth inequality has remained stable, there appears to be an increasing concentration at the very top that 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 insight about wealth aggregates and their distribution, the region lacks the data to provide an accurate and comparable picture, both between countries and over time. Some scattered data have 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 those limited data. Nonetheless, information is partial at best, and 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 for monitoring 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, given the extreme weaknesses present in currently available data, or at least not at a regional scale; it is likely better to tackle the issue country by country and use the best available data in each case. What has been shown to be 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 in 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 are needed.

ACKNOWLEDGEMENTS

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.

SUPPLEMENTARY DATA

Supplementary data are available at *Oxford Open Economics* online.

STUDY FUNDING

This work was supported by the Latin American and Caribbean Inequality Review (LACIR).

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

AUTHORS' CONTRIBUTION

Rafael Carranza, Mauricio de Rosa, Ignacio Flores: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing—original draft, Writing—review & editing.

DATA AVAILABILITY

National Account's as well as survey data are either publicly available or can be easily requested. In the case of Uruguayan macro data, estimates were taken from a previous paper (soon to be published in the Review of Income and Wealth), and will be made available together with the rest of the data and estimates. Estimates based on tax micro-data were taken from cited studies. Forbes data, in turn, are publicly available but need to be purchased to be used.

REFERENCES

Acemoglu, D. et al. (2007) *Economic and political inequality in development: the case of Cundinamarca, Colombia*. Cambridge: NBER.

Altimir, O. (1987) 'Income Distribution Statistics in Latin America and their Reliability', *Review of Income and Wealth*, **33**:111–55.

Alvaredo, F., Atkinson, A. B., and Morelli, S. (2018) 'Top Wealth Shares in the UK over More than a Century', *Journal of Public Economics*, **162**:26–47.

Alvaredo, F., Garbinti, B., and Piketty, T. (2017) 'On the Share of Inheritance in Aggregate Wealth: Europe and the USA, 1900–2010', *Economica*, **84**:239–60.

Atkinson, A. B. (2018) 'Wealth and Inheritance in Britain from 1896 to the Present', *Journal of Economic Inequality*, **16**:137–69.

Atkinson, A. B., and Harrison, A. (1978) *Distribution of Personal Wealth in Britain*. Cambridge: Cambridge University Press.

Bajard, F. et al. (2021) 'Global wealth inequality on WID.World: Estimates and imputations', in World Inequality Lab Technical Note 2021/16. Paris: World Inequality Lab.

Baselgia, E., and Martínez, I. (2021) *A Safe Harbor: Wealth-income Ratios in Switzerland over the 20th Century and the Role of Housing Prices*. ETH Zürich: ETH Zürich - KOF Swiss Economic Institute.

Bauluz, L. et al. (2021) 'Estimation of global wealth aggregates in wid.World', in 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', in *WID. world Working Paper* (2017/23).

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

Blanchet, T., Flores, I., and Morgan, M. (2022) 'The Weight of the Rich: Improving Surveys Using Tax Data', *The Journal of Economic Inequality*, **20**:119–50.

Blanchet, T., and Martínez-Toledano, C. (2022) *Distributional Wealth Accounts in Europe: Methodology* WIL Technical Notes. Paris: World Inequality Lab.

Blanco, M. A., Bauluz, L., and Martínez-Toledano, C. (2021) 'Wealth in Spain 1900–2017 a Country of Two Lands', *The Economic Journal*, **131**:129–55.

Burnard, T., Panza, L., and Williamson, J. (2019) 'Living Costs, Real Incomes and Inequality in Colonial Jamaica', *Explorations in Economic History*, **71**:55–71.

Carranza, R., Morgan, M., and Nolan, B. (2022) 'Top Income Adjustments and Inequality: An Investigation of the EU-SILC', *Review of Income and Wealth*, **69**:725–754.

Chatterjee, A., Czajka, L., and Gethin, A. (2020) *Estimating the Distribution of Household Wealth in South Africa* (45/2020). WID.world working paper. Paris: World Inequality Lab.

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

Cowell, F. A., and Van Kerm, P. (2015) 'Wealth Inequality: a Survey', *Journal of Economic Surveys*, **29**:671–710.

Davies, J. B., Lluberas, R., and Shorrocks, A. F. (2017) 'Estimating the Level and Distribution of Global Wealth, 2000–2014', *Review of Income and Wealth*, **63**:731–59.

Davies, J. B. et al. (2011) 'The Level and Distribution of Global Household Wealth', *The Economic Journal*, **121**:223–54.

De Rosa, M. (2024) 'Wealth Inequality in the South: Multi-Source Evidence from Uruguay', *Review of Income and Wealth*.

De Rosa, M., Flores, I., and Morgan, M. (2024) 'More Unequal or Not as Rich? Revisiting the Latin American Exception', *World Development*, **184**:106737.

De Rosa, M., and Vilá, J. (2024) *Taxing the rich in Latin America: revenue and distributional effects of a wealth tax* Technical report,. pp. 14–24 Serie de Documentos de Trabajo del IECON DT.

Djenderedjian, J., and Martirén, J. L. (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**:125–54.

Dolan, K. A. (2012) 'Methodology: how we Crunch the Numbers', *Forbes Magazine.*, N7.

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

Flores, R., Pérez, J., and Uribe, F. (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**. Santiago: Central Bank of Chile.

Galli, S., Theodoridis, D., and Rönnbäck, K. (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*, **38**: 41–64.

Gandelman, N., and Lluberas, R. (2024) 'Wealth in Latin America: Evidence from Chile, Colombia, Mexico and Uruguay', *Review of Income and Wealth*, **70**:4–32.

Garbinti, B., Goupille-Lebret, J., and Piketty, T. (2021) 'Accounting for Wealth-Inequality Dynamics: Methods, Estimates, and Simulations for France', *Journal of the European Economic Association*, **19**: 620–63.

Gelman, J., and Santilli, D. (2010) 'Crecimiento económico, Divergencia Regional y distribución de la Riqueza: Córdoba y Buenos Aires después de la Independencia', *Latin American Research Review*, **45**: 121–47.

Gelman, J., and Santilli, D. (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**: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**: 427–52.

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

Jenkins, S. P. (1990) 'The Distribution of Wealth: Measurement and Models', *Journal of Economic Surveys*, **4**:329–60.

Johnson, L. L. (1995) 'The Competition of Slave and Free Labor in Artisanal Production: Buenos Aires, 1770–1815', *International Review of Social History*, **40**:409–24.

Johnson, L. L., and Frank, Z. (2006) 'Cities and Wealth in the South Atlantic: Buenos Aires and Rio de Janeiro before 1860', *Comparative Studies in Society and History*, **48**:634–68.

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**:443–59.

Kopczuk, W. (2015) 'What Do We Know about the Evolution of Top Wealth Shares in the United States?' *Journal of Economic Perspectives*, **29**:47–66.

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

Kumar, R. (2019) *The Evolution of Wealth-income Ratios in India 1860-2012* Available at SSRN 3111846. Amsterdam: Elsevier.

Llorca-Jaña, M., Navarrete-Moltalvo, J., and Araya-Valenzuela, R. (2018) 'Inequality in Chile before the First Globalization: An Approach Derived from Agricultural Market Income, 1830s-1850s', *Historia Agraria Revista de agricultura e historia rural*, **74**: 103–34. https://doi.org/10.26882/histagrar.074e04l.

Londoño-Vélez, J., and Ávila-Mahecha, J. (2021) 'Enforcing Wealth Taxes in the Developing World: Quasi-Experimental Evidence from Colombia', *American Economic Review: Insights*, **3**:131–48.

Lustig, N. (2019) 'The "missing rich" in household surveys: Causes and correction approaches', in Commitment to Equity (CEQ) Working Paper Series, **75**. pp. 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**:259–81.

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

Moraes, M. I. et al. (2022) 'Wealth Inequality in Colonial Hispanic-America: Montevideo in the Late Eighteenth Century', *Economic History of Developing Regions*, **37**:288–314.

Novokmet, F., Piketty, T., and Zucman, G. (2018) 'From Soviets to Oligarchs: Inequality and Property in Russia 1905-2016', *The Journal of Economic Inequality*, **16**:189–223.

OECD (2013) 'Measuring household wealth through surveys', in *OECD Guidelines for Micro Statistics on Household Wealth*, Chapter 6. pp. 131–59, Paris: OECD Publishing.

Pfeffer, F. T., and Waitkus, N. (2021) 'The Wealth Inequality of Nations', *American Sociological Review*, **86**:567–602.

Piketty, T., Postel-Vinay, G., and Rosenthal, J. L. (2006) 'Wealth Concentration in a Developing Economy: Paris and France, 1807-1994', *American Economic Review*, **96**:236–56.

Piketty, T., Yang, L., and Zucman, G. (2019) 'Capital Accumulation, Private Property, and Rising Inequality in China, 1978–2015', *American Economic Review*, **109**:2469–96.

Piketty, T., and Zucman, G. (2014) 'Capital Is Back: Wealth-Income Ratios in Rich Countries 1700–2010', *The Quarterly Journal of Economics*, **129**:1255–310.

Piketty, T., and Zucman, G. (2015) 'Wealth and Inheritance in the Long Run', in Atkinson, A., and Bourguignon, F., (eds.) *Handbook of Income Distribution*, **2**. pp. 1303–68. Amsterdam: Elsevier.

Raffinetti, E., Siletti, E., and Vernizzi, A. (2015) 'On the Gini Coefficient Normalization when Attributes with Negative Values Are Considered', *Statistical Methods and Applications*, **24**:507–21.

Reiff, L. O., Barbosa, A. L. et al. (2005) 'Housing Stock in Brazil: Estimation Based on a Hedonic Price Model', *BIS papers*, **21**:257.

Roine, J., and Waldenström, D. (2015) 'Long-Run Trends in the Distribution of Income and Wealth', in Atkinson, A., and Bourguignon, F., (eds.) *Handbook of Income Distribution*, **2**. pp. 469–592. Amsterdam: Elsevier.

Saez, E., and Zucman, G. (2016) 'Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data', *The Quarterly Journal of Economics*, **131**:519–78.

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

Shorrocks, A., Davies, J., and Lluberas, R. (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*, Berkeley: University of California.

Smith, M., Zidar, O. M., and Zwick, E. (2021) *Top Wealth in America: New Estimates and Implications for Taxing the Rich*. Cambridge: NBER.

Taleb, N. N., and Douady, R. (2015) 'On the Super-Additivity and Estimation Biases of Quantile Contributions', *Physica A: Statistical Mechanics and its Applications*, **429**:252–60.

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

Vermeulen, P. (2016) 'Estimating the Top Tail of the Wealth Distribution', *American Economic Review*, **106**:646–50.

Vermeulen, P. (2018) 'How Fat is the Top Tail of the Wealth Distribution?' *Review of Income and Wealth*, **64**:357–87.

Vicario, C. (2017) *The Formation of Human Capital in Pre-modern Latin America* Ph. D. thesis Tübingen: Universität Tübingen.

Waldenström, D. (2017) 'Wealth-Income Ratios in a Small, Developing Economy: Sweden, 1810–2014', *The Journal of Economic History*, **77**:285–313.

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

Oxford Open Economics, 2025, **4**:i36–i54
https://doi.org/10.1093/ooec/odae036
Research Article