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Wealth Inequality in South Africa, 1993–2017

Aroop Chatterjee, Léo Czajka, and Amory Gethin

Abstract

This article estimates the distribution of personal wealth in South Africa by combining microdata covering the universe of income tax returns, household surveys, and macroeconomic balance sheet statistics. South Africa is characterized by unparalleled levels of wealth concentration. The top 10 percent own 86 percent of aggregate wealth and the top 0.1 percent close to one-third. The top 0.01 percent of the distribution (3,500 individuals) concentrate 15 percent of household net worth, more than the bottom 90 percent as a whole. Such levels of inequality can be accounted for in all forms of assets at the top end, including housing, pension funds, and financial assets. There has been no sign of decreasing inequality since the end of apartheid.

JEL classification: E01, D31, I3, G51

Keywords: wealth distribution, income capitalization, households balance sheets, national accounts, inequality

1. Introduction

A growing number of studies have made significant progress in measuring the distribution of household income and consumption within countries and over time, yet still little is known on the dynamics of household wealth. This knowledge gap is particularly acute in the developing world, where available data sources are scarce, often insufficiently detailed, and prone to important measurement error. Given the rise of global wealth concentration (Alvaredo et al. 2018; Zucman 2019) and the policy challenges it poses in terms of tax evasion (Alstadsæter, Johannesen, and Zucman 2019; Kleven et al. 2020; Londoño-Vélez and Ávila-Mahecha 2021) and political equilibrium (Esteban and Ray 2006; Bombardini and Trebbi 2020; Bertrand et al. 2020), there is a pressing need to address this shortcoming and improve our knowledge of the wealth distribution.

Aroop Chatterjee leads the research agenda on wealth inequality at the Southern Centre for Inequality Studies, University of Witwatersrand, Johannesburg; his email address is aroop.chatterjee@wits.ac.za. Léo Czajka is a PhD candidate at Université catholique de Louvain and a research fellow at the World Inequality Lab, Paris School of Economics; his email address is leo.czajka@gmail.com. Amory Gethin (corresponding author) is a PhD candidate at the Paris School of Economics and a research fellow at the World Inequality Lab; his email address is amory.gethin@psemail.eu. The authors thank the SA-TIED Datalab team, as well as Facundo Alvaredo, Thomas Blanchet, Keith Breckenridge, Josh Budlender, Aalia Cassim, Lucas Chancel, Allan Davids, Andrew Kerr, Murray Leibbrandt, Thomas Piketty, Michael Sachs, Imraan Valodia, and Eddie Webster for helpful insights. The authors also thank seminar participants from the Southern Centre for Inequality Studies, WiSER, School of Economics and Finance at the University of Witwatersrand, and SALDRU at the University of Cape Town. The authors acknowledge financial support from the UNU-WIDER SA-TIED project, the Ford Foundation, the Sloan Foundation, the United Nations Development Programme, and the European Research Council (ERC Grant 340831). The study was originally commissioned under the UNU-WIDER project, Southern Africa – Towards Inclusive Economic Development (SA-TIED). The authors are responsible for all opinions and errors. A supplementary online appendix is available with this article at *The World Bank Economic Review* website.

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This paper estimates the distribution of household wealth in South Africa from 1993 to 2017 by combining household survey data, tax microdata, and macroeconomic balance sheet statistics. A number of results emerge from our analysis.

First, South Africa displays unparalleled levels of wealth concentration. The top 10 percent of South African wealth holders own more than 85 percent of household wealth, while the top 1 percent wealth share reaches 55 percent. The top 0.01 percent (about 3,500 adults) own a higher share of wealth than the bottom 90 percent as a whole (about 32 million individuals). The average wealth of the bottom 50 percent is negative: the market value of their assets is lower than their liabilities. Such levels of wealth inequality are higher than in any other country for which comparable, high-quality estimates of the wealth distribution are available (namely France, the United Kingdom, the United States, Russia, China, and India).

Secondly, there is no evidence that wealth inequality has decreased since the end of the apartheid regime. The top 10 percent wealth share has fluctuated between 80 percent and 90 percent between 1993 and 2017, largely as the result of the rise and fall of household debt before and after the 2007–2008 crisis, with no sign of long-run trend. If anything, the available evidence suggests that the share of wealth captured by the top 1 percent and the top 0.01 percent may even have increased. This result is particularly striking considering South Africa's recent history of positive growth (real average income and wealth per adult respectively increased by 19 percent and 33 percent from 1993 to 2017) and greater racial inclusiveness (all discriminatory laws against oppressed racial groups had been abolished by 1991).

Thirdly, these inequalities are reproduced at the level of all asset classes. The top 10 percent of wealth holders own more than 55 percent of business assets and housing wealth, and over 99 percent of bonds and stock. Financial assets constitute the bulk of the assets of the top 0.1 percent, while owner-occupied housing and pension wealth are the main holdings of the bottom 90 percent. Significant wealth accumulation is visible over the life cycle, but levels of wealth concentration within each age group are almost perfectly similar to those measured for the full population. This suggests that individuals across the wealth distribution do accumulate at relatively similar paces but start from very different initial endowments, hence pointing to the importance of inheritance.

Previous studies on post-apartheid economic inequality have focused on income, but the literature on wealth remains extremely scarce. Two studies have attempted to measure the distribution of wealth in South Africa (Daniels and Augustine 2016; Mbewe and Woolard 2016), yet they suffer from two major limitations.[1] First, they cover only one (2015) or two years (2010, 2015) of data and therefore cannot assess any long-run trends in wealth inequality since the end of apartheid. Secondly, they rely exclusively on the National Income Dynamics Study, a wealth survey that greatly underestimates wealth concentration within the top 10 percent (this issue and its implications are discussed in more detail in Robustness Checks). This is in large part due to substantial underreporting of financial assets by survey respondents, a limitation that has now been extensively documented in the inequality measurement literature (Korinek, Mistiaen, and Ravallion 2006; Alvaredo et al. 2020; Blanchet, Fournier, and Piketty 2017; Blanchet, Flores, and Morgan 2018), as well as by the authors of the previous studies themselves (Daniels and Augustine 2016).

By contrast, following income capitalization approaches recently applied in the United States (Saez and Zucman 2016) and France (Garbinti, Goupille-Lebret, and Piketty 2021), our methodology combines survey and tax microdata with macrodata on household wealth totals. Unlike previous studies, it ensures that average wealth and the portfolio composition of assets across the distribution are fully consistent with the household balance sheet statistics published by the South African Reserve Bank. It allows us to obtain a much more reliable picture of wealth inequality within the top 10 percent and especially within the top

1 See Chatterjee (2019) for a broader review. Orthofer (2016) is sometimes cited as an additional study, exploiting tax microdata. However, given the method applied, the resulting estimates correspond to the distribution of financial incomes, not to the distribution of household wealth.

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1 percent, which is key to understanding wealth dynamics in countries such as South Africa where wealth concentration is extreme. Importantly, it allows us to cover the entire 1993–2017 period, as well as to compare wealth inequality in South Africa to other countries where similar exercises have been performed.

Finally, this paper also contributes to the methodological literature on the measurement of wealth inequality in developing countries. By comparing estimates of the wealth distribution obtained with three different methodologies—direct measurement of net worth, rescaling of reported wealth components to balance sheet totals, and capitalization of income flows—we show that capitalizing reported income flows to match macroeconomic wealth totals can yield relatively good results, even in the absence of income tax microdata. Crucially, these estimates appear to be much more reliable than those solely relying on survey-based self-reported wealth, which omit the bulk of financial wealth. In other words, bridging the micro–macro gap in wealth measurement appears to be an essential step to accurately measure the wealth distribution. This opens new avenues for estimating the dynamics of wealth inequality in low- and middle-income countries, where wealth microdata are unavailable or unreliable, yet where macroeconomic balance sheet statistics can be usefully combined with surveys collecting data on household income. In that respect, we hope that this paper can serve as a useful guide for future studies aiming to measure wealth inequality in countries with limited data such as South Africa.

The rest of the paper is organized as follows. We first define the key concepts and present the main data sources used in this article. We then explain the methodology applied to combine these data sources. Finally, we present our main results on the evolution of wealth inequality in South Africa, and we contrast them with those obtained from alternative methodologies.

2. Concepts and Data Sources

Following the United Nations System of National Accounts (UN SNA) guidelines (United Nations 2009), we define household wealth as the total market value of the assets and liabilities held by the household sector. Using this concept is central to produce comparable estimates over time and across countries. Assets can be classified into eight broad categories: owner-occupied housing, tenant-occupied housing, unincorporated business assets, pensions, life insurance, bonds, equity, and currency (deposits, notes, and coins). Liabilities can be divided into mortgage debt and all other debts (including consumer credits, credit cards, and informal loans).[2] As with most countries in the world, there exists no unified administrative database in South Africa measuring wealth at the micro level for the full population.[3] In the absence of such information, the distribution of household wealth in South Africa has to be measured by combining several complementary data sources.

Macroeconomic Data. In South Africa, the first comprehensive attempt to estimate the value of total household wealth in the economy goes back to Muellbauer and Aron (1999), who collect and combine a number of data sources to provide figures on the assets and liabilities of the household sector since 1975. The South African Reserve Bank (SARB) has since then updated and revised these figures on a yearly basis. The only alternative data source that would allow us to approximate total household wealth

2 This classification is the most precise common decomposition that could be achieved after harmonization of all the data sources. Notice that land directly owned by the household sector is classified in housing (owner or tenant occupied), not in business assets. Liabilities include all debts contracted with both formal (e.g., commercial banks) and informal creditors.

3 The few countries still collecting direct information on wealth include Switzerland, Spain, France, Norway, and Colombia. These countries are the only ones still enforcing a tax on net wealth. For other countries in the world, most of what we know about wealth comes either from wealth surveys, estate duty data, or, as in this study, via the income capitalization method applied on income surveys or personal income tax data.

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are waves 4 (2015) and 5 (2017) of the National Income Dynamics Study (NIDS).[4] As it covers only two years, this survey offers little scope to study the evolution of wealth inequality in the long run. Moreover, it suffers from several limitations (internal inconsistencies, measurement errors, implausibly low aggregates) documented in Robustness Checks (see also supplementary online appendix S2). For these reasons, we prefer not to rely on this source. Throughout our series, all wealth totals thus come from macroeconomic balance sheets published by the SARB. They are then combined with diverse microdata sources to estimate how these aggregates are distributed.

Personal Income Tax Data. We exploit Personal Income Tax (PIT) data compiled by the South African Revenue Service (SARS) to measure the distribution of wages, pension income, pension contributions, mixed income, and capital income (rents, interest, and dividends) for the top 30 percent of the population. This individual panel covers two types of tax statements over the 2010–2017 period: IRP5 forms, which are submitted to SARS by employers on behalf of their employees and cover wages and pension contributions, and ITR12 forms, which are self-assessed by all taxpayers who need to disclose information on mixed, rental, interest, and dividend incomes.[5] Due to its administrative nature, this data covers the full tax-paying population, including individual observations at the very top of the distribution, which greatly increases the granularity of measured income flows. This is an advantage over surveys, which often suffer from sample biases and higher nonresponse rates among the wealthiest.

Household Surveys. Finally, we combine a number of household surveys to cover individuals and income or wealth concepts not captured by the tax data. We use surveys for three main purposes: to measure the distribution of key income variables for the bottom 70 percent of the population; to estimate the distribution of debts and assets that do not generate income flows and hence cannot be capitalized (owner-occupied housing, currency); and to extrapolate our 2010–2017 series back to 1993. These include two main types of surveys: 7 "income surveys"[6] covering all forms of income received by individuals (as well as certain wealth components such as housing and debts), and 54 "labor force surveys"[7] conducted on a more regular basis since 2000 and mainly covering wages and mixed income.

3. Methodology

This section presents the methodology used to estimate the distribution of household wealth in South Africa since 1993. First, a harmonized survey microfile is built by merging existing household surveys. Surveys are then combined with tax data to better capture the top end of the distribution. Finally, measures of net worth are derived by capitalizing relevant income flows and rescaling other assets and liabilities to macro totals.

Harmonization of Household Surveys. We begin by combining household surveys to estimate the distribution of available income and wealth components, on a yearly basis, throughout the 1993–2017 period. Starting from available income surveys (1993, 1995, 2000, 2005, 2008, 2010, 2015), we first interpolate

4 Other surveys collecting information on income and consumption sometimes include some information on some wealth components (mostly house value or debt), but never encompass total wealth.

5 The IRP5 and ITR12 data are presented in the form of source codes corresponding to specific taxable income concepts, exemptions, and deductions. See the supplementary online appendix for more details about our classification and Ebrahim and Axelson (2019) for an overview and discussion of the dataset.

6 The Project for Statistics on Living Standards and Development (PSLSD—1993), the Income and Expenditure Surveys (IES—1995, 2000, 2005, 2010), and the Living Conditions Surveys (LCS—2008, 2015).

7 The Labour Force Surveys (LFS—twice a year from 2000 to 2007) and the 40 Quarterly Labour Force Surveys (QLFS—every three months since 2008).

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missing years from 1993 to 2017 by creating new datasets resulting from the combination and proportional reweighting of the two adjacent surveys. Yearly distributions of gross wages and mixed incomes are then corrected to make them match those reported in the Labour Force Survey series since 2000. In broad strokes, this process allows us to obtain a harmonized survey microfile covering every year from 1993 to 2017, in which the distributions of available income and wealth components are fully consistent with information reported in both income surveys (for all income concepts excluding wages and mixed income) and labor force surveys (for wages and mixed income). More details on these methodological steps are available in supplementary online appendix S2.

Combination of Household Surveys with Tax Data. Survey distributions are combined with PIT data to better capture the top end of the distribution in two steps. First, we derive an income concept that is comparable between the survey and tax data, which we refer to as "merging income,"[8] and we merge the two data sources based on the exact rank of merging income observed at the individual level. We then identify the quantile of the South African income distribution q above which reported merging incomes become higher in the tax data than in the survey data, and we assume that the tax data is more reliable than the survey data only above q. In practice, this implies keeping all variables from the survey data below q, and replacing all comparable variables from the tax data above q (wages, mixed income, rental income, interest, dividends, private pension income, and contributions to pension funds). Between 2010 and 2017, we find q to be consistently located between the 70th and the 75th percentiles, so that we use the tax microdata to cover the top 25–30 percent of the income distribution.[9]

Income Capitalization and Rescaling. The income capitalization method consists in using capital income flows (e.g., dividends) to approximate the distribution of households' assets and liabilities (e.g., shares). In our case, given that the SARB balance sheet is the best available data source to capture the level and composition of total household wealth in South Africa, this implies distributing each aggregate in proportion to its income flow measured at the micro level. The core assumption is that of constant rates of return by asset class. Six types of assets can be capitalized: tenant-occupied housing from the rental income received by individual landowners; unincorporated business assets from the mixed income received by self-employed individuals; pension assets from the pension contributions and pension income of formal wage earners and pensioners; life insurance assets from factor income; bonds and interest deposits from interest income; and corporate shares and equity from dividends.[10]

8 Defined as the sum of wages, mixed income, rental income, interest income, and pension income.

9 See supplementary online appendix figs S4.8 and S4.9. Our choice of a merging point based on an income concept differs slightly from the approach of Hundenborn, Woolard, and Jellema (2019), who rather derive a taxable-income concept from survey data, and then keep the tax data above the filing threshold of taxable income. The main reason for merging our two datasets based on a broad income concept is twofold. First, our IRP5–ITR12 panel covers a large number of individuals who are below the filing threshold, given that all employers in South Africa are now required to file an IRP5 tax form for all their employees, regardless of their level of remuneration. However, as is emphasized in the SARS' Tax Statistics, this rule was not followed strictly by all employers, so that the tax data cannot be considered to be representative of the universe of formal wage earners. In other words, our data covers relatively well the top of the distribution up to a certain point, below which it contains a mix of low- and middle-income wage earners. It seems therefore most useful to keep as many individuals as possible from the tax data, while removing those whose location in the distribution of income cannot be identified precisely, which is what our method does in a simple way. Secondly, defining taxable income remains a complex task, and it remains unclear whether this can be done with a sufficient level of precision and consistency, in particular given that surveys tend not to properly capture the top of the distribution.

10 In the case of pension assets, we follow the approach proposed by Saez and Zucman (2016) and allocate them to wage earners and pensioners so as to match their distribution recorded in the NIDS. In our case, this implies distributing 75 percent of pension assets to formal wage earners proportionally to pension contributions paid, and 25 percent to pensioners proportionally to pension income received. As shown in the supplementary online appendix (fig. S4.6), this

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Table 1. Estimating the Distribution of Personal Wealth in South Africa: A Mixed Approach

Asset/liability	Variable	Measurement method
Nonfinancial assets:		
Owner-occupied dwellings	Value of home	Rescaling
Tenant-occupied dwellings	Rental income	Capitalization
Business assets	Business income	Capitalization
Financial assets:		
Pension assets	Pension contributions and pension income	Mixed method
Life insurance assets	Factor income	Mixed method
Currency, notes, and coins	Bank account balance	Rescaling
Bonds and interest deposits	Interest income	Capitalization
Corporate shares and equity	Dividends	Capitalization
Liabilities:		
Mortgage debt	Reported debt and house value	Mixed method
Other debts	Reported debts and consumption	Mixed method

Source: Authors' elaboration.
Note: The table shows the methodological approach used to estimate the distribution of the different assets and liabilities reported in the household balance sheets. Direct measurement corresponds to reported data on the market value of assets or liabilities in household surveys. Capitalization corresponds to assuming that the distribution of an asset follows that of one or several corresponding income flows.

The capitalization method cannot be applied to liabilities nor to owner-occupied housing and currency, as these components of wealth do not generate any income flow. We therefore measure these components directly from available household surveys and rescale them proportionally to match SARB totals. To mitigate measurement issues and the risk of creating outliers with excessively negative net worth,[11] however, we do not directly rescale debts: we assume instead that mortgage debt is distributed proportionally to the value of the house of mortgagors, and that other forms of debts are distributed proportionally to the consumption of those declaring having contracted debts. These are conservative assumptions, as mortgages and other forms of debt are likely to be more unequally distributed than house values and consumption respectively. We refer to this combination of rescaling and income capitalization as a "mixed approach" (see table 1).

Finally, to extrapolate our series backwards to 1993, we first apply our methodology to the years 2010–2017, with and without PIT data. We then compare the wealth distribution resulting from these alternative specifications to extract average correction coefficients at the quantile level, and use these coefficients to adjust the wealth distributions estimated from survey data over the 1993–2010 period (see supplementary online appendix S2.4).

4. The Distribution of Wealth in South Africa: Key Results and Comparative Perspectives

This section presents our main results on wealth inequality in South Africa. We first provide an overview of aggregate household wealth and how it is distributed across broad wealth groups. We then present figures on the concentration of specific assets and on the dynamics of wealth accumulation over the

capitalization technique applied to the NIDS data yields results which are very similar to those obtained from direct measurement. Similarly, we assume that 50 percent of life insurance assets belong to wage earners proportionally to factor income—the sum of wages, mixed income, and pension income—and that 50 percent belong to all other adults proportionally to factor income. This again reproduces well the distribution of life insurance assets reported in the NIDS (see supplementary online appendix fig. S4.7).

11 Mortgage debt and other forms of debts have been recorded in surveys but the coverage is often partial and inconsistent. As a result, rescaling debts to balance sheet totals results in seriously overestimating the number of individuals with negative net worth and generating implausibly high debt values.

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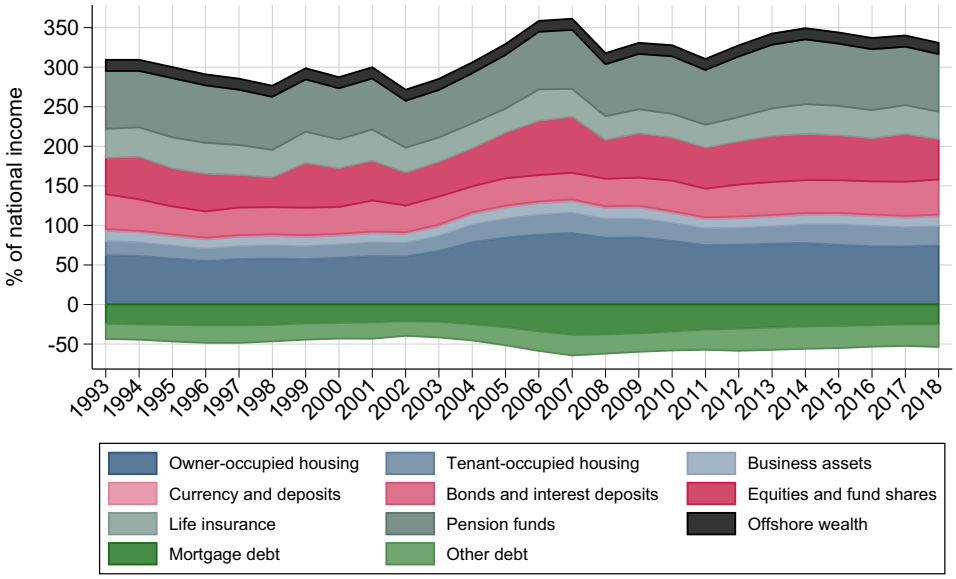
Figure 1. Evolution of Household Wealth in South Africa, 1993–2018



Source: Authors' compilation based on data from the South African Reserve Bank.
Note: This figure shows the level and composition of household wealth in South Africa between 1993 and 2018, expressed as a share of the net national income.

life cycle. Finally, we discuss how wealth inequality in South Africa has evolved since 1993, and how it compares to other countries.

The Level and Composition of Aggregate Wealth in South Africa, 1993–2018

Before presenting figures on the distribution of wealth, it is useful to provide basic facts on the level and composition of household net worth in South Africa and its evolution since 1993 (see fig. 1). Before the early 2000s, real average wealth per adult stagnated at around 240,000 rand. It then rapidly increased by about 30 percent, before stabilizing at some 320,000 rand after the 2008 financial crisis. The net wealth to national income ratio has remained relatively stable since 1993, ranging from 2.5 (before 2003) to 2.8 (after 2008).

In 2018, financial and nonfinancial assets respectively amounted to two years and one year of national income. Pension assets represented the biggest component of financial assets (73 percent of national income), closely followed by equities and fund shares (51 percent), bonds and interest deposits (45 percent), and life insurance assets (35 percent). Meanwhile, the bulk of nonfinancial assets consisted of owner-occupied housing (75 percent of national income), followed by tenant-occupied housing (24 percent), and business assets (12 percent). The total liabilities of the household sector amounted to about 54 percent of national income, divided into mortgage debt (25 percent) and nonmortgage debt (28 percent). Household debt rose significantly between 2000 and 2008, in large part due to a boom in mortgage advances (see supplementary online appendix fig. S4.5).

Finally, based on the estimation made by Alstadsæter, Johannesen, and Zucman (2018), we assume that 11.8 percent of South African GDP was held offshore in 2007, and, in the absence of data on the evolution of wealth held in offshore tax havens, that this share has remained constant throughout the period. This is a conservative assumption, given that global offshore wealth is known to have steadily risen in the past decades. Given the relative stability of wealth–income ratios, this implies that offshore wealth represented about 5 percent of net wealth throughout the period of interest (see supplementary online appendix S1).

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Table 2. Distribution of Personal Wealth in South Africa in 2017

	Number of adults	Threshold (2018 R)	Average (2018 R)	Average (2018 PPP $)	Wealth share (percent)
Full population	35,600,000		326,000	52,200	100
Bottom 90% (p0p90)	32,040,000		52,300	8,400	14.4
Bottom 50% (p0p50)	17,800,000		−16,000	−2,600	−2.5
Middle 40 percent (p50p90)	14,240,000	27,700	138,000	22,000	16.9
Top 10% (p90p100)	3,560,000	496,000	2,790,000	447,000	85.6
Top 1% (p99p100)	356,000	3,820,000	17,830,000	2,860,000	54.7
Top 0.1% (p99.9p100)	35,600	30,350,000	96,970,000	15,540,000	29.8
Top 0.01% (p99.99p100)	3,560	146,890,000	486,200,000	77,920,000	14.9

Source: Authors' computations combining surveys, tax microdata, and macroeconomic balance sheet statistics.
Note: The table shows the distribution of household wealth in South Africa in 2017. The unit of observation is the individual adult aged 20 or above. Wealth thresholds are in 2018 rands. R: rands; PPP: purchasing power parity.

The Distribution of Wealth in South Africa in 2017

Table 2 provides information on the number of adults (above 20 years old), the entry thresholds, the average wealth, and the share of wealth of various groups of the wealth distribution in 2017.

Average wealth varies hugely across the distribution. The bottom 50 percent of the South African population have negative net worth: the levels of the debts that they owe exceed the market value of the assets they own. The middle 40 percent of the distribution—individuals located between the median and the 90th percentile—have a net worth more than twice lower than the national average. Together, the bottom 90 percent of the South African adult population own about 14 percent of total personal wealth in the economy, while the remaining 86 percent belong to the top decile. The average wealth of the bottom 90 percent of the population is about six times lower than the national average, compared to nine times higher among the top 10 percent.

Ownership is not only polarized between top and bottom wealth groups, it is also extremely concentrated within the top 10 percent. The top 1 percent of the South African adult population (350,000 individuals) own 55 percent of aggregate personal wealth, and the top 0.1 percent alone (35,000 individuals) own almost a third of wealth. The top 0.01 percent of the distribution, amounting to some 3,500 individuals, own about 15 percent of household wealth, greater than the share of wealth owned by the bottom 90 percent as a whole (32 million individuals). Their average wealth is more than 1,500 times greater than the national average, and 9,000 times greater than the average of the bottom 90 percent.

The Composition of Personal Wealth across the Distribution

The extreme degree of wealth inequality observed in South Africa is in large part driven by the relative exclusion of poorer wealth groups from any form of wealth accumulation, and by the concentration of all forms of assets at the top end. Table 3 provides some insights into this polarization by showing the share of different types of assets held by wealth groups across the distribution. The top 10 percent own more than 55 percent of all forms of assets, including pension assets, housing wealth, unincorporated business assets, and currency, notes, and coins. They own virtually all (99.8 percent) bonds and stock in the economy. The top 1 percent alone holds more than a tenth of all forms of assets and a bit more than 95 percent of all bonds and stocks. Currency and housing wealth are the least concentrated forms of wealth, yet low wealth groups only possess a small share of them: the bottom 50 percent of the wealth distribution own about 10 percent of currency, notes, and coins, and less than 15 percent of housing assets.

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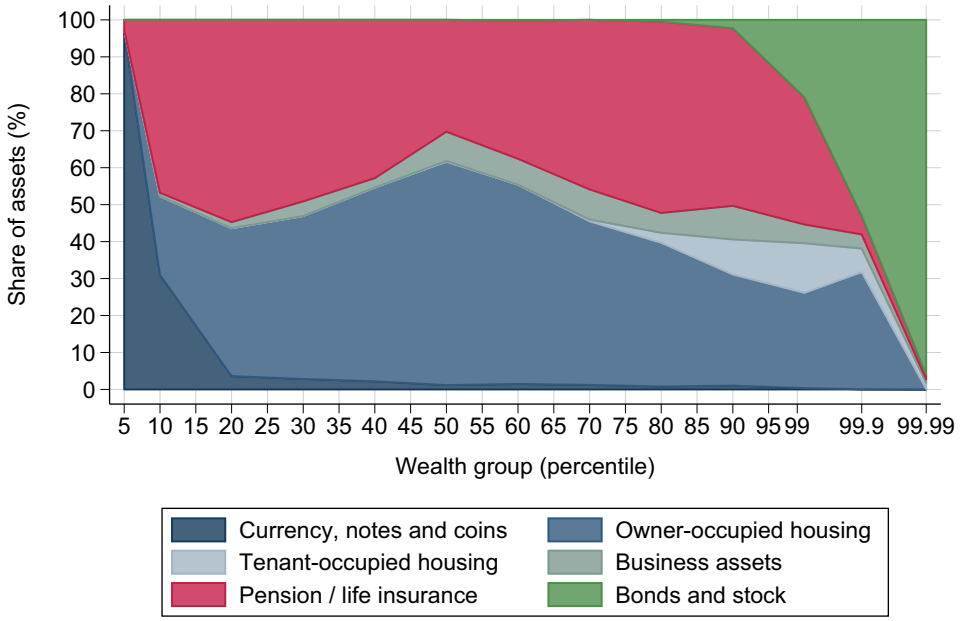
Table 3. Share of Total Assets Held by Wealth Group by Asset Class (Percent), 2017

	Currency	Business assets	Housing	Pensions/life insurance	Bonds & stock
Bottom 90% (p0p90)	37.3	40.4	41.2	36.2	0.2
Bottom 50% (p0p50)	9.7	1.4	14.0	5.3	0.0
Middle 40% (p50p90)	27.7	39.1	27.2	30.9	0.2
Top 10% (p90p100)	62.7	59.6	58.8	63.8	99.8
Top 1% (p99p100)	10.6	41.9	27.8	14.1	95.2
Top 0.01% (p99.99p100)	1.5	13.4	8.5	2.1	62.7
% of total assets	0.6	3.6	28.8	32.5	34.6

Source: Authors' computations combining surveys, tax microdata, and macroeconomic balance sheet statistics.
Note: The table shows the shares of different types of assets held by specific wealth groups in 2017. The unit of observation is the individual adult aged 20 or above. In 2017, the top 1 percent of South Africans in terms of net worth owned 95 percent of the bonds and corporate shares in the economy. Bonds and shares represented 34.1 percent of total household assets in the economy at this date. Figures may not add up due to rounding.

Figure 2. Composition of Assets by Wealth Group in 2017



Source: Authors' computations combining surveys, tax microdata, and macroeconomic balance sheet statistics.
Note: The figure shows the composition of assets of various groups in the distribution of household assets in South Africa in 2017. The unit of observation is the adult aged 20 or above. The results come from the harmonized survey data file, and wealth is split equally among adult members of the household, except for the top 1 percent and above for which the individual data built from the combined survey and tax microdata are used.

Figure 2 provides another view of the link between asset types and wealth groups by representing the portfolio composition of percentiles of the wealth distribution in 2017. Currency, notes, and coins are the main form of assets held by poorest South African adults, while owner-occupied housing, pensions, and life insurance form the majority of assets for most of the distribution within the bottom 90 percent. Unincorporated business assets represent a small share of portfolios for the upper-middle class. Bonds and stocks, finally, represent a large share of wealth for the top 1 percent and the bulk of assets held within the top 0.1 percent.

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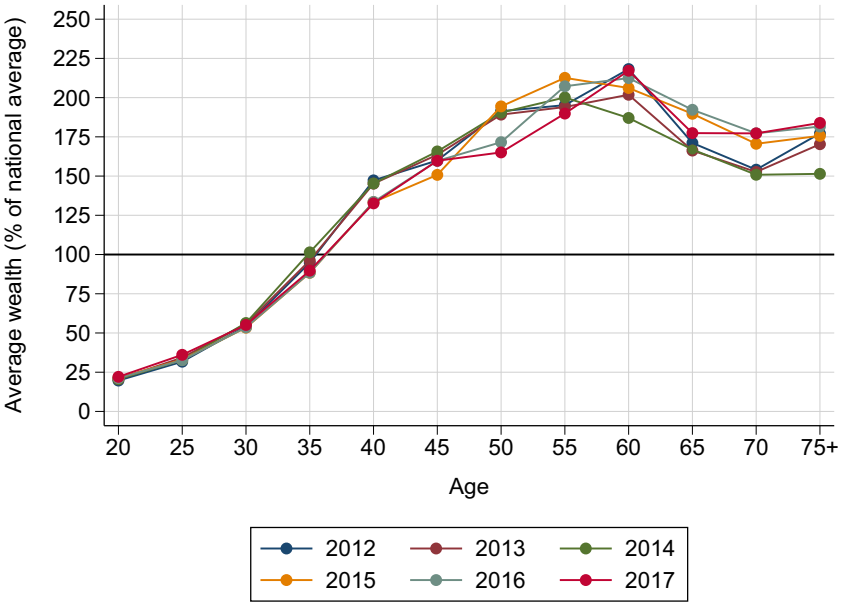
Figure 3. Average Wealth by Age Relative to Average Wealth per Adult, 2012–2017



Source: Authors' computations combining surveys, tax microdata, and macroeconomic balance sheet statistics.
Note: The figure shows the mean net worth of South African adults by age group relative to the national average. The unit of observation is the individual adult aged 20 or above.

Wealth and Age

Based on available information on age from the PIT data, we can document to what extent wealth accumulation through the life cycle contributes to reducing or exacerbating inequalities.[12] Figure 3 shows a stable relationship between age and average wealth over the 2012–2017 period. Average net worth rises significantly and linearly between ages 20 and 55: individuals aged between 20 and 25 have an average net worth lower than 25 percent of the national average, while those aged between 50 and 55 are between 50 percent and two times wealthier than the average adult. Average wealth then stabilizes between ages 50 and 65 and decreases slightly for older individuals, but still remains more than 50 percent higher than the national average for individuals older than 75. Interestingly, this pattern is almost perfectly similar to that found in the case of France (see Garbinti, Goupille-Lebret, and Piketty 2017, fig. 5).

Although average wealth does vary significantly across age groups, age differences cannot account for observed wealth disparities. Indeed, levels of wealth concentration within each age group are almost perfectly similar to those measured among the full population. The share of wealth held by the top 10 percent exceeds 85 percent, and the top 1 percent share is higher than 55 percent, whether one restricts the analysis to those aged between 20 and 39, between 40 and 59, or older than 60 (fig. 4). Altogether, this implies that individuals across the wealth distribution do accumulate at relatively similar paces but start from very different initial endowments. This suggests that inherited wealth could play a central role in explaining levels of wealth concentration observed in South Africa.[13]

12 There are many other important categories to investigate in the context of wealth inequality in South Africa. Unfortunately, the only relevant covariate present in PIT data is age. We leave the study of other dimensions of wealth inequality (race, gender, geography, etc.) for future research.

13 Notice that the estimates presented here correspond to individual series, rather than to "equal-split" series where wealth would be split equally among household adult members. In practice, splitting wealth among household members would

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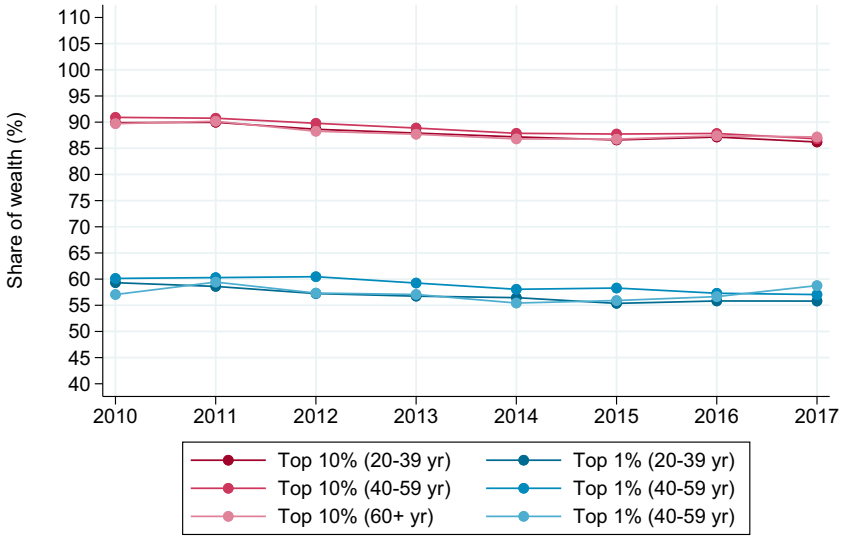
Figure 4. Wealth Inequality within Age Groups, 2010–2017



Source: Authors' computations combining surveys, tax microdata, and macroeconomic balance sheet statistics.
Note: The figure shows the top 10 percent wealth share and the top 1 percent wealth share estimated when splitting the South African population into three age groups (20–39 years old, 40–59 years old, and 60+ years old). The unit of observation is the individual adult aged 20 or above.

Long-Run Trends and Comparative Perspectives

We conclude this section by highlighting the most notable facts arising from the comparison of our results over time and across countries. Figure 5 plots the evolution of the share of wealth accruing to the top 10 percent in South Africa (our estimates), together with that from all other countries where a similar method could be applied: China, Russia, India, the United Kingdom, France, and the United States. In the long run, and despite a 30 percent growth in real average wealth per adult, wealth concentration has remained remarkably stable in South Africa, increasing between 2005 and 2010 before gradually stabilizing back to its pre-2000 level. Notwithstanding these short-term fluctuations and the fact that wealth concentration has increased in all other countries, South Africa has remained significantly more unequal than all these countries throughout the entire period. The South African top 10 percent wealth share has fluctuated between 80 percent and 90 percent during the 1993–2017 period, while it has remained below 75 percent in the United States, 70 percent in Russia and China, 65 percent in India, and 55 percent in France and the United Kingdom. The same result holds for the top end of the distribution: the top 1 percent wealth share was 55 percent in South Africa in 2017, compared to 43 percent in Russia, 39 percent in the United States, 31 percent in India, 30 percent in China, and less than 25 percent in France and the UK (fig. 6).

Having a closer look at our series, we can bring out two additional observations. First, the rapid increase in wealth concentration between 2005 and 2008 was in large part due to a strong fall in the bottom 90 percent share driven by the boom and bust in mortgage advances in the 2000s, which temporarily drove a higher share of households into negative net worth. Between 2004 and 2008, in particular, mortgage debt increased from 9 percent of net household wealth to almost 15 percent, before decreasing back to 9 percent in 2018 (see supplementary online appendix fig. S4.5). This temporary fall in bottom wealth shares driven by expanding debts mirrors that observed in the United States at about the same period (see supplementary online appendix fig. S4.4).

imply redistributing wealth to younger individuals, thereby making the wealth–age profile less steep. This would reinforce our argument that age is not a primary determinant of wealth inequality in South Africa.

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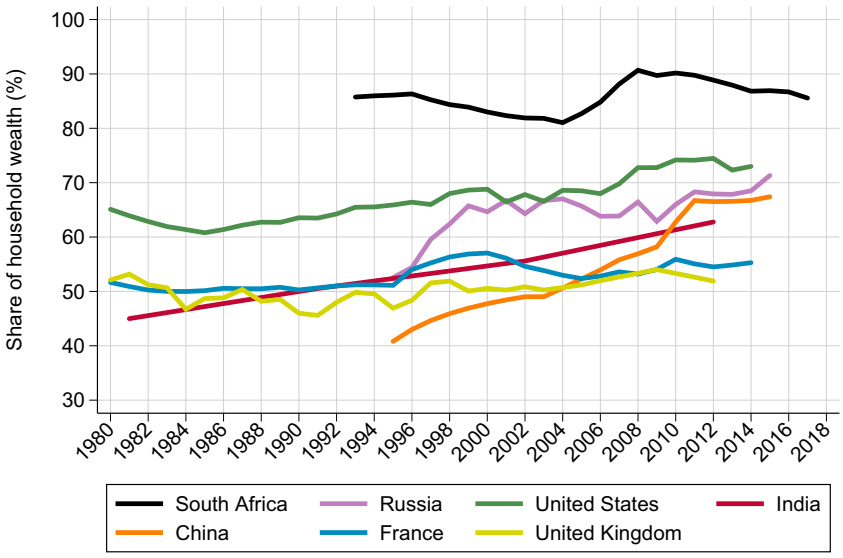
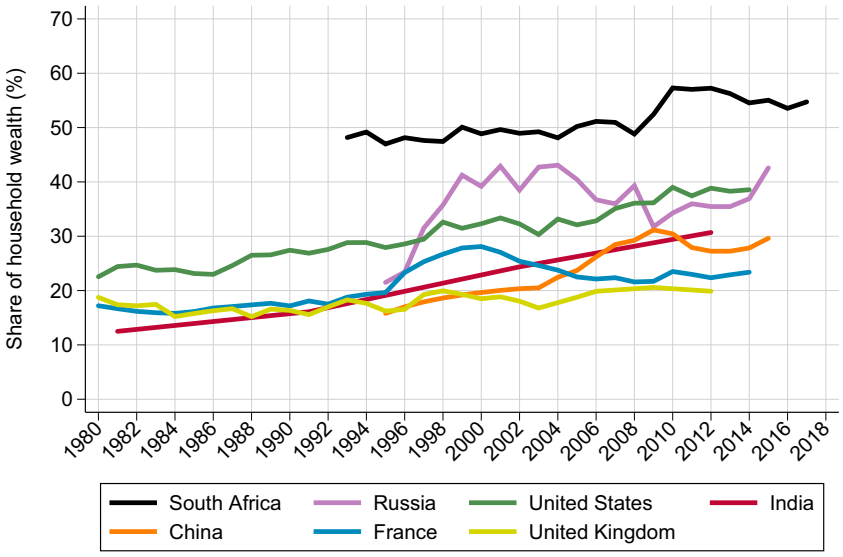
Figure 5. South African Wealth Inequality in Comparative Perspective: Top 10 Percent Wealth Share



Source: Authors' computations combining surveys, tax microdata, and macroeconomic balance sheet statistics for South Africa; World Inequality Database (http://wid.world) for other countries.

Note: The figure compares the top 10 percent wealth share in South Africa to that of other countries. The unit of observation is the individual adult aged 20 or above. Wealth is individualized (South Africa) or split equally among adult household members (other countries).

Figure 6. South African Wealth Inequality in Comparative Perspective: Top 1 Percent Wealth Share



Source: Authors' computations combining surveys, tax microdata, and macroeconomic balance sheet statistics for South Africa; World Inequality Database (http://wid.world) for other countries.

Note: The figure compares the top 1 percent wealth share in South Africa to that of other countries. The unit of observation is the individual adult aged 20 or above. Wealth is individualized (South Africa) or split equally among adult household members (other countries).

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Secondly, it is worth noticing that while the top 10 percent share has remained broadly stable, there seems to have been an increase in wealth concentration within the top 10 percent. Between 1993 and 2017, the top 1 percent share grew from 54 percent to 57 percent and the top 0.1 percent share from 22 percent to 31 percent (see supplementary online appendix fig. S4.3). This is likely due to the combination of two factors: the rise in the share of nonpension financial assets, from 19 percent to 24 percent of net household wealth between 1992 and 2018, and the increase in wage inequality in South Africa during this period, which indirectly affected the distribution of pension assets.

Overall, it is particularly striking that wealth inequality has remained at extreme and stable levels in South Africa in spite of the many progressive policies that have been pursued since the early 1990s. All discriminatory laws were abolished by 1991 and a new constitution was adopted in 1994. Since then, South Africa's successive governments endorsed several ambitious socioeconomic policy frameworks whose primary objectives consistently included reducing economic inequality inherited from colonial and apartheid regimes.[14] Yet, wealth inequality has remained remarkably stable over the past three decades. In line with our observations on the role of inheritance in explaining constant wealth disparities within age groups, our long-term series suggest that asset allocations before 1993 may still contribute to shape wealth inequality in recent years, despite the many reforms to address these lasting disparities.

5. Robustness Checks

In this section, we contrast our results with those obtained using alternative methodologies. We then discuss how sensitive our estimates are to different assumptions regarding the distribution of debts, the measurement of housing wealth, and equivalence scales.

Comparing Methodologies: Direct Measurement, Rescaling, and Survey-Based Mixed Approaches

In our baseline "mixed approach" to estimate wealth inequality in South Africa, we have combined surveys and exhaustive tax microdata to capitalize income flows and match wealth aggregates to macroeconomic balance sheets. To shed light on the contributions of these various data sources and methodological steps, it is useful to compare our benchmark series with three alternative specifications: one in which we estimate wealth inequality from self-reported assets and liabilities in household surveys ("direct measurement"), one in which we rescale these reported assets and liabilities to macro totals ("rescaling"), and one in which we apply our mixed approach directly to surveys, without combining them with tax data.

Direct Measurement. In South Africa, the only publicly available data source allowing direct measurement for the entire spectrum of household wealth components is the NIDS survey. The direct measurement approach implies that figures are not consistent with macroeconomic statistics, both in terms of levels and composition of household wealth. In the case of the NIDS, this implies overstating the total value of housing assets and understating the significance of nonpension financial assets (see supplementary online appendix S2.2).

Rescaling. A second way of measuring the distribution of wealth consists in assuming that the distribution of recorded wealth components and their correlation is relatively well measured by the household survey, but that it is mainly their average amounts that are understated or overstated. In this case, one can obtain an estimate of the wealth distribution by effectively scaling up individual-level assets and liabilities in the NIDS surveys to match the totals recorded in the national balance sheets. This has the advantage of ensuring consistency with macroeconomic aggregates, as in our mixed approach. The drawback is that

14 These include the Reconstruction and Development Programme (RDP—1994); Growth, Employment and Redistribution (GEAR—1996); Accelerated and Shared Growth Initiative for South Africa (ASGISA—2005); New Growth Path (NGP—2010); and National Development Plan (NDP—2013).

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Table 4. Shares of Household Wealth Held by Groups in South Africa (Percent): Survey-Based Results

	Bottom 50%	Middle 40%	Top 10%	Top 1%	Top 0.1%
Direct measurement					
NIDS, wave 4	−3.3	18.4	84.9	41.3	9.7
NIDS, wave 5	−0.5	16.9	83.6	40.2	8.6
Rescaling					
NIDS, wave 4	−8.2	10.9	97.3	58.3	24.6
NIDS, wave 5	−7.0	8.0	99.0	63.9	29.3
Mixed approach					
NIDS, wave 4	−4.5	14.5	90.0	58.5	25.1
NIDS, wave 5	−3.3	12.5	90.8	60.6	30.1
PSLSD, 1993	−1.3	11.9	89.4	51.7	20.6
IES, 1995	−5.1	15.2	89.8	50.6	23.7
IES, 2000	−1.7	14.4	87.3	52.9	26.1
IES, 2005	−0.3	13.5	86.7	54.1	28.6
LCS, 2008	−8.0	14.0	93.9	52.2	22.4
IES, 2010	−7.3	14.8	92.5	60.0	31.7
LCS, 2015	−3.3	14.2	89.0	51.1	20.0

Source: Authors' computations from survey microdata.
Note: The table compares estimates of the share of household wealth owned by the bottom 50 percent (p0p50), the middle 40 percent (p50p90), the top 10 percent (p90p100), the top 1 percent (p99p100), and the top 0.1 percent (p99.9p100) obtained from household surveys using different methodological approaches. The unit of observation is the individual adult aged 20 or above. PSLSD: Project for Statistics on Living Standards and Development. IES: Income and Expenditure Survey. LCS: Living Conditions Survey. NIDS: National Income Dynamics Study.

self-reported wealth components may be more prone to measurement error than self-reported income flows, potentially creating a number of outliers and yielding implausible levels of wealth inequality.

Survey-Based Mixed Approach. A third way of measuring wealth inequality, in the absence of tax microdata, is to directly apply our mixed methodology to household surveys, capitalizing relevant income flows and rescaling assets that do not generate income flows to macro totals. To the extent that household surveys tend to underestimate top income inequality (albeit much less than top wealth inequality), we may expect estimated wealth inequality to be lower when relying solely on surveys than when combining surveys with tax data.

Results. Table 4 compares estimates of the share of wealth held by the bottom 50 percent, the middle 40 percent, the top 10 percent, the top 1 percent, and the top 0.1 percent derived from these different methodologies. Waves 4 and 5 of the NIDS are the only surveys collecting direct data on wealth and thus for which estimates from the three methodologies can be compared. Three main results stand out from these figures.

First, all approaches converge in revealing an extreme degree of wealth concentration. Regardless of the methodology, the share of wealth held by the bottom 50 percent is estimated to be consistently negative, while the top 10 percent is higher than 80 percent. The fact that wealth inequality in South Africa is substantially larger than in any other country for which a similar measurement method has been applied is therefore robust to alternative methodologies.

Secondly, while methodologies converge when it comes to large groups (e.g., the top 10 percent and the bottom 90 percent), they yield much more variable results when it comes to measuring wealth concentration at the top of the distribution. Direct measurement in the NIDS surveys implies a top 0.1 percent share below 10 percent, i.e., more than twice lower than most of the results obtained from rescaling or the mixed approach. This is due to the extremely poor coverage of nonpension financial assets

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in the NIDS: the total reported value of bonds and stock, two types of assets that are overwhelmingly concentrated at the top end of the wealth distribution, does not exceed 4 percent of macro totals in both waves of the survey (see supplementary online appendix table S4.2). Rescaling financial assets to balance sheet totals or capitalizing income flows corrects for this micro–macro discrepancy, moving the estimates closer to those obtained with our benchmark methodology.[15]

Thirdly, the survey-based mixed approach yields relatively close results across years and data sources: the top 10 percent share lies between 85 percent and 90 percent, and the top 1 percent is estimated to be between 50 percent and 60 percent in most cases. Most importantly, these estimates are very close to those obtained when combining surveys with PIT data: despite their tendency to underestimate top income inequality, surveys can still be usefully exploited to estimate wealth concentration using the mixed approach. A careful look at the particular structure of capital income concentration can help solve this apparent paradox. The relative consistency between the two sources is mainly due to the fact that both in the surveys and the tax data, financial incomes (interest, dividends, and rental income) are extremely concentrated, so that both sources imply attributing a substantial share of wealth—and in particular of tenant-occupied housing, bonds, and shares—to the top 0.1 percent of the distribution.

In summary, our results point to the key significance of bridging the micro–macro gap. Because surveys tend to omit the bulk of financial assets, studies solely relying on self-reported household wealth are likely to very strongly underestimate top wealth inequality. By contrast, capitalizing income flows to match macro totals can prove to be a more reliable methodology, even in the absence of income tax microdata. This opens new avenues for estimating wealth inequality in other emerging countries, where tax microdata might not be available yet where surveys collecting data on income can be usefully combined with data from national accounts.

Debts, Housing Wealth, and Equivalent Scales

We conclude this paper by briefly discussing three sources of concern related to the mismeasurement of household debt, the underestimation of total housing wealth, and the distribution of wealth within households.

Mismeasurement of Household Debt. One concern with our estimates is that debt is self-reported in household surveys. By rescaling reported debts to macro totals, we might overestimate the number of households with negative net worth, especially given that surveys tend to only capture a small fraction of private debt (see supplementary online appendix table S4.3). In order to evaluate the potential significance of this bias, we compare the evolution of household net worth inequality with that of household assets inequality (excluding debts) in supplementary online appendix fig. S4.14.

Two key results emerge from this comparison. First, excluding debt systematically reduces wealth inequality, but only moderately: the top 10 percent have owned a consistent 80 percent of assets and the top 1 percent about 45 percent of assets since 1993. Secondly, debt dynamics appear to drive virtually all fluctuations in wealth inequality over time: wealth concentration has followed ups and downs, while the concentration of assets has remained remarkably stable. This points to the role of credit dynamics in accounting for short-run trends in wealth disparities. The rise and fall of wealth inequality visible in our series before and after the 2007–2008 financial crisis, in particular, coincides with the mortgage credit boom and bust (see supplementary online appendix fig. S4.5).

15 Also notice that wealth inequality between the top 10 percent and the bottom 90 percent is significantly larger under the rescaling approach than when relying on the mixed approach. This is essentially due to the fact that scaling up debts to balance sheet totals creates a large number of households with strongly negative net worth (the bottom 50 percent goes down by several percentage points), especially in the NIDS where assets and liabilities suffer from important underreporting issues.

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Underestimation of Housing Wealth. A second concern relates to the aggregate value of housing wealth in South Africa. Indeed, housing appears to be the only asset class for which reported values in surveys are substantially *higher* than in balance sheet totals (see supplementary online appendix table S4.2). Whether this inconsistency arises from survey respondents overestimating the value of their home or from the SARB underestimating housing wealth remains an open question.[16] For consistency and comparability with existing studies, we choose to rely on SARB statistics. However, we report in the supplementary online appendix, series in which we assume that total housing wealth is underestimated by a factor of 2 (see figs S4.12 and S4.13). Unsurprisingly, as housing is one of the least unequally distributed assets in South Africa, increasing its average value reduces wealth inequality. Yet, because all assets are strongly concentrated at the top end, including housing (see table 3), it affects our main results only moderately, with the top 10 percent share still reaching about 80 percent and the top 1 percent about 40 percent.

Equivalence Scales. Lastly, one might be concerned that the equivalence scale used in this paper—allocating wealth components directly to individuals, and therefore not accounting for wealth sharing within households—may lead to overestimating wealth inequality. It might also lead to overstating wealth inequality more in South Africa than in countries such as France, given that multigenerational households and intrafamilial sharing agreements might be more common in the former than in the latter.

We investigate this concern in supplementary online appendix figs S4.10 and S4.11, which compare our "individual" series to that obtained when splitting wealth equally among all household members ("per capita" series), or among all adult household members ("broad equal-split" series). We find that changes in equivalence scales only moderately affect wealth inequality, which is highest in the individual series and lowest in the broad equal-split series. The top 10 percent share exceeds 80 percent, and the top 1 percent share 45 percent, in all three specifications.

6. Conclusion

This paper systematically estimated the distribution of household wealth in South Africa since 1993 by combining all relevant macro and microdata sources. Our results have revealed unparalleled levels of wealth concentration, with the top 1 percent owning a higher share of wealth than the bottom 99 percent. These extreme inequalities have remained remarkably stable since the end of the apartheid regime, despite the significant economic growth and the major social transformations that the country has undergone since then. They extend to all forms of assets, from housing to financial capital, which are consistently held by individuals located at the top end.

Methodologically, our results point to the substantial limitations of wealth surveys, which vastly underestimate financial assets and are therefore incapable of properly measuring wealth inequality within the top 10 percent. Instead, we have shown that bridging the micro–macro gap by capitalizing relevant income flows, even in the absence of tax microdata, can yield more consistent and meaningful estimates of the wealth distribution. This comes as good news for researchers aiming at tracking the dynamics of wealth concentration in countries where tax microdata might not be accessible, yet where household income surveys and macroeconomic balance sheets exist and can be combined.

We see at least two avenues for future research. First, our estimates of wealth inequality could be refined if better information on dividends and income received through unit trusts were made available to researchers (see the discussion in supplementary online appendix S3). Information on these forms of income are collected on a regular basis by the South African Revenue Service, but are not yet accessible.

16 Notice that this issue is not specific to South Africa—in the United States too, survey values have been found to be higher than in balance sheets. Which source of information provides the most accurate estimate of the market value of housing wealth remains debated (Blanchet 2016; Henriques and Hsu 2014; Dettling et al. 2015).

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We hope that access to these data sources will enable future studies to have a more granular picture of the composition of wealth and its dynamics at the very top of the distribution.

Secondly, our findings on the stability of wealth inequality since 1993 call for further research on the dynamics and weight of inherited wealth relative to that of newly created and accumulated wealth in the post-apartheid era. This would likely require combining other complementary data sources—such as estate duty data, credit data, or panel data on income and savings—and modeling the joint dynamics of savings, inter-generational transmission, and household debt.

Data Availability

The derived data generated in this research are available in the article and in its online supplementary material. The household surveys used in this article are available from DataFirst, at https://www.datafirst.uct.ac.za/. The macroeconomic data are available from the South African Reserve Bank website, at https://www.resbank.co.za/. The tax microdata were accessed from the South African Revenue Service data lab and are not publicly available.

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