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JEL Codes: D31, N36, E01.
Keywords: Wealth Distribution, Brazil.

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Wealth Inequality in Brazil

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Abstract

This note provides novel estimates of wealth distribution in Brazil from 2006 to 2021, combining administrative and survey data. The estimations indicate that the wealthiest 1% of the population held 44.8% of the total wealth in 2006 and 46.8% in 2021. The increase was steeper for the top 0.01%, with the wealth share rising from 12.2% to 18%. Financial wealth is significantly more concentrated than real estate and becomes relatively more important as we move up the distribution. In the top 0.1%, financial wealth accounts for about 80% of reported wealth, while real estate represents no more than 15%. The greater relative importance of financial wealth at the very top, combined with the faster growth of financial wealth observed over the period, potentially explains the concentration trend.

Keywords – Wealth Distribution, Brazil

JEL Codes – D31, N36, E01

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1 Introduction

Despite extensive discussions on Brazil's wealth inequality, there is almost no knowledge about wealth distribution and its recent evolution in the country. This lack of information impoverishes public debate, inhibits international comparisons, and can impact policy decisions. This note aims to fill this gap by presenting new estimations of Brazil's wealth distribution from 2006 to 2021.

The primary data source consists of tax tabulations derived from tax returns. Although Brazil does not impose a wealth tax, the country's federal tax authority requires the reporting of assets and debts in the Personal Income Tax (PIT) returns.[1] As the PIT data only covers a subset of the population, survey data is used to supplement the analysis. The procedure is to use administrative data for the top of the distribution and estimate the share of wealth not covered in the PIT using the capital income distribution in survey data.

On aggregate, the average wealth reported in tax returns increased from R$147,000 in 2006 to R$577,000 in 2021, corresponding to an average annual growth rate of 9.5%. The growth rate of the average reported wealth exceeded the inflation rate, which averaged 5.8% during the period. It was also higher than the nominal GDP growth and the average basic interest rates, which averaged 9.1% and 9.3%, respectively. Analyzing the evolution by wealth class, we observe that financial wealth experienced stronger growth, with an average annual growth rate of 10.3%, while real estate grew at an annual rate of 8.0%.

The estimations of the wealth distribution combining tax tabulations and survey data reveal a high level of concentration. The wealthiest 1% of the population held approximately

[1] Brazil imposes property and inheritance taxes at the subnational level. These taxes do use the PIT returns directly for tax collection.

44.8% of the total wealth in 2006 and 46.8% in 2021. The increase was entirely driven by the increased wealth share of the top 0.01%, which rose from 12.2% to 18% of the total wealth. The data on reported wealth highlights the growing significance of financial wealth compared to real estate as we move up the distribution. Among the middle 40% of declarants, those between the 50th and 90th percentiles, real estate accounts for about 57% of reported wealth, while financial wealth represents 27%. The share of financial wealth grows up along the distribution reaching about 80% of reported assets in the top 0.1%, while real estate represents no more than 15%. The shift towards financial wealth at the top of the distribution, combined with the higher growth rates of financial wealth, helps explain the rising wealth concentration during the period.

These findings contribute to the literature on global wealth distribution (Davies et al. 2017; Zucman 2019; Bauluz et al. 2021; Chancel et al. 2022). We contribute to this literature by building wealth estimates using administrative wealth data for a major developing country not covered thus far. Specifically, we contribute to the strand of the literature that focuses on Latin America (Londoño-Vélez and Ávila-Mahecha 2021; Rosa 2022; Ministerio de Hacienda de Chile 2022; Carranza et al. 2023; Gandelman and Lluberas 2023). As discussed by Carranza et al. (2023), there are a few reliable measures of wealth distribution in Latin America. Londoño-Vélez and Ávila-Mahecha (2021) estimates that the top 1% held 40.2% of Colombia's wealth in 2017, Ministerio de Hacienda de Chile (2022) estimates that the top 1% held 37% of Chile's wealth in 2019, and Rosa (2022) preferred estimation for the top 1% share in Uruguay is 39.2% in 2016. The estimates for Brazil indicate a higher level of wealth inequality, although comparing these figures is not straightforward as methods and definitions differ due to data availability. Furthermore, the estimates point to higher wealth inequality

than that of the US (Saez and Zucman 2016; Smith et al. 2022), which is the most unequal developed country with available estimations (Chancel et al. 2022).

Finally, it is important to acknowledge the limitations of these results. First, reported wealth in tax data may not accurately reflect market value, as many assets are reported at acquisition value. This limitation may affect the distributional results to the extent that the relationship between reported and market-value wealth varies across the distribution. Second, the use of survey data to incorporate non-tax filers relies on assumptions about the ability of the survey data to approximate the division of wealth between those who fill or do not fill the PIT. Third, the analysis does not fully incorporate national accounts data, which may impact the estimations. Despite these limitations, we believe the results represent an essential first step in estimating Brazil's wealth distribution and contribute to the ongoing debate on this topic.

The remainder of the note is organized as follows. Section 2 describes the data, its coverage and definitions. Section 3 presents the wealth distribution among tax filers. Section 4 presents the procedure and the estimations for the population-wide wealth distribution estimates.

2 Data

Brazil's federal tax authority requires reporting assets and debts in PIT returns, called *Declaração de Imposto de Renda das Pessoas Físicas* (DIRPF). The PIT wealth reporting mainly serves for monitoring purposes, as Brazil does not levy a wealth tax. Property, inheritance, and gift taxes are imposed at the subnational level. While the subnational tax

authorities can exchange information with the federal tax authority, these taxes are not dependent on the PIT returns for tax collection. The wealth is self-reported, but the tax authority can cross-check information with banks and property registers.

This note uses tax tabulations constructed based on the PIT returns. These tabulations are ordered based on total reported wealth and cover the years between 2006 and 2021. They are divided into centiles, and at the top of the distribution, the top 1% and the top 0.1% are broken down into deciles. This database requires two main explanations.

The first main explanation relates to population coverage. The PIT is not mandatory for all individuals. The primary requirement for filing tax returns is having an income above a minimum threshold during the year, R$28,559.70 in 2021, for example. Other criteria, irrespective of income, include possessing a certain value in assets, R$300,000 in 2021, or directly holding stocks. Figure 1 shows that during the analyzed period, the proportion of tax filers relative to the adult population, defined as those above 20 years old, ranged from 20% to 23.5%, showing an increasing trend. This upward trend can be attributed to a real reduction of the minimum threshold required to file taxes given that the threshold increased substantially less than inflation. Couples have the option to file taxes jointly. However, this choice is often not advantageous from a fiscal perspective when both spouses have moderately high taxable income. This feature supports interpreting the tax returns as an individual declaration.

On average, 65% of tax filers report having non-zero wealth, and this percentage remains relatively consistent over time. There are several reasons why individuals may report zero wealth. First, some individuals genuinely possess no wealth, and those with bank deposits below a very low threshold, R$140 in 2021, are not required to disclose such values. Second,

in cases when couples file tax returns separately, they have the option to declare all joint assets in the tax return of only one spouse. This choice does not provide any particular fiscal advantage but may be chosen for practical reasons. Consequently, the concentration of reported wealth may overstate the concentration of wealth among declarants, as a portion of this value should be divided between couples.

The portion of the population that both files taxes and reports non-zero wealth varies between 12.3% and 15.3% throughout the period. This group is the focus of the analysis. Given the criteria for tax filing, it is reasonable to suppose that this group mainly comprises wealthier individuals in Brazil. This interpretation impacts how one may extrapolate from the wealth concentration in tax returns to the overall wealth distribution in the population. We discuss this consideration further during the presentation of our analysis.

The second main explanation pertains to the reported values. For most assets, these values do not necessarily reflect market value. Housing, buildings, and land are reported based on acquisition value. This value does not have to be updated in real or nominal terms until the property is sold. For financial assets, the situation is more varied. Stocks are also reported based on acquisition value. Closely-held companies are reported based on share capital, which is a component of book value. Funds are mostly reported with a rule that closely follows market value. Cash and cash accounts are reported at market value.

The reported wealth distribution is representative of the underlying market-value wealth distribution to the extent that the relationship between reported and market-value wealth does not vary along the wealth distribution. The disparity between market-value and reported value is likely to be more acute for real estate, as it is reported based on acquisition value. The relationship may vary, for example, if wealthier individuals purchase properties more

frequently, bringing reported wealth closer to market value for this group. It is possible, however, that wealthier individuals invest in properties that experience greater appreciation over time, resulting in a larger disparity between reported wealth and market-value wealth. It is not possible to define the direction of this relationship based solely on the reporting rules. The estimations in this note implicitly assume that the relationship between reported and market-value wealth does not vary along the wealth distribution.

The reported wealth in the tax tabulations is between net and gross wealth. Reported asset values are mostly net of debt. For instance, an individual who takes a mortgage to buy a house should report only the part of the mortgage that they have already paid, in addition to down payments made without the mortgage, as the value of the house. The same applies to vehicles. However, other forms of bank or personal debt should be declared as debt, and the tabulations do not take into account these debts to rank individuals. The distribution of reported wealth underestimates net wealth to the extent that lower-wealth groups have proportionally more debt. We show later that the data available points in this direction, indicating that the distribution of net wealth is more concentrated than the reported wealth distribution.

The analysis uses other data sources to complement the information from the tax data. Survey data, national accounts data, and population data from the Instituto Brasileiro de Geografia e Estatística (IBGE), Brazil's statistical office, are used to estimate the wealth distribution in the adult population. This note also uses inflation and interest rate data from Brazil's Central Bank to benchmark results on the growth rate of wealth. Finally, the analysis uses the Forbes Brazil billionaires list from 2006 to 2021 to compare with the top shares observed in the tax data.

3 Reported Wealth

3.1 Aggregated Reported Wealth

This section starts by putting the aggregate reported wealth into perspective. Figure 2 illustrates the distribution of reported wealth as a percentage of GDP, broken down into four main categories. These four categories are financial wealth, which includes stocks, closely held companies, investment funds, bonds, and other forms of financial assets; real estate, which includes housing, land, and other buildings; movables, which include vehicles, boats, and other movable assets; and others, which is a miscellaneous category that includes assets not classified elsewhere. This division follows the classification of the tax authority.

Several noteworthy observations can be made from this figure. First, the proportion of total reported wealth relative to GDP shows an upward trend. In 2006, total reported wealth accounted for 93% of GDP, rising to 152% by 2021. Second, it comes as no surprise that real estate and financial assets dominate the overall reported wealth composition, accounting for more than 85% of the total. Third, financial assets experienced a more rapid growth rate compared to real estate. In 2006, the value of reported financial assets corresponded to 40.5% of GDP, while real estate accounted for 42%. By 2021, reported financial wealth increased to 74% of GDP, whereas real estate holdings evolved to 56%. This divergence in growth rates is reflected in a rising share of financial wealth within the total reported assets. The share of financial wealth increased from 45% to 48.5% over the period, while the share of real estate decreased from 43.5% to 37%.

Using the net private wealth estimates produced by Carranza et al. (2023), we calculate that the reported wealth represents around 50% of the net private wealth during the period.

This share is considerable, taking into account that the wealth is not reported at market value and that only a portion of the population files the PIT. The fact that reported wealth captures this significant part of the net private wealth increases confidence that the reported wealth distribution can well capture the market-value wealth distribution.

Next, we analyze the aggregate median and average wealth evolution. Figure 3 depicts a significant increase in the average reported wealth over the period, rising from R$147,000 to R$577,000. In contrast, the median reported wealth experienced slower growth, advancing from R$37,000 to R$123,000. In nominal terms, this translates into an annual growth rate of 9.5% for average wealth and 8.0% for median wealth. It is important to recall that these figures include the impact of inflation, as they are in nominal terms.

To provide context, Figure 4 compares these growth rates to the nominal GDP growth rate, the annual basic interest rate, and the annual consumer inflation rate. The solid lines present the yearly growth rate for the average and the median reported wealth. The dashed lines present the (geometric) average of nominal GDP, interest rates, and inflation over the period. Examining the temporal patterns, the growth rate of median reported wealth peaked in 2009 at over 20% before consistently declining each year, ultimately resulting in a nominal decrease in 2021. In contrast, the growth rate of average reported wealth demonstrated greater stability over the period, with a peak in 2009, and reaching its lowest point in 2018. The average annual growth rate of nominal GDP was 9.1%, the average annual interest rate was 9.3%, and the average annual inflation rate was 5.8%. Both average and median reported wealth increased more than inflation, but the median wealth lagged behind nominal GDP growth and the average interest rate. On the other hand, average wealth outpaced nominal GDP growth but still fell short of the interest rate. It is worth pointing out that the median

is probably influenced by the increasing number of tax filers over the period, which can lead to a reduction in its growth rate if the new tax filers are less wealthy on average.

When we break the average growth rate down by wealth type, a clear division appears. Figure 5 presents the annual growth rates of the average financial reported wealth and real estate wealth. It also presents the annual basic interest rate, which benchmarks many financial investments. The average financial wealth grew at an average annual rate of 10.3%, while the average real estate wealth grew at a rate of 8.0%. The growth rate of reported financial wealth corresponded to a return of 111% of the basic interest rate during the period.

3.2 Reported Wealth Distribution

This part describes the distribution of reported wealth. It divides tax filers into four distinct groups, ranked based on their reported wealth. It is important to note that these groups exclusively consist of individuals who reported non-zero wealth in their tax returns. The bottom 50% group comprises tax filers with the lowest reported wealth each year, while the middle 40% represents taxpayers positioned between the 50th and 90th percentiles. Moving up the scale, the top 10%-1% category includes individuals within the 90th to 99th percentiles, while the top 1% is the highest centile.

Figure 6 illustrates the distribution of reported wealth among the four groups described. The bottom 50% of declarants hold a very small share of the total reported wealth, ranging between 3.5% and 4.8% throughout the period. The middle 40% group experienced a clear decline, with their share decreasing from 28.3% in 2006 to 24.2% in 2021. The top 10% to 1% followed a comparable trend, decreasing from 32.2% to 28.3%. These three groups combined saw a reduction of 8.8 percentage points in their share of reported wealth. This reduction

was offset by an increase in the top 1% share, which rose from 35.2% in 2006 to 44% in 2021.

Figure 7 further breaks down the top 1% into three subgroups: the top 1% to 0.1%, the top 0.1% to 0.01%, and the top 0.01%. The sum of the reported wealth share of these three groups makes up the top 1% share. The top 1% to 0.1% accounted for 16.2% of reported wealth in both 2006 and 2021. The top 0.1% to 0.01% accounted for 8.9% in 2006 and increased to 10.4% in 2021. The top 0.01% of declarants, which on average corresponded to 1803 individuals over the period, held 10.0% of the total reported wealth in 2006 and increased to 17.3% in 2021. Therefore, nearly all the increase in the top 1% comes from a rise in the share of the top 0.01%. It is important to note that the share of the top 0.01% is more volatile due to its small number of individuals, which explains the bumps in this group's wealth share over the years.

Figure 9 replicates the previous exercise for real estate wealth, and Figure 8 for financial wealth. These figures reveal a significant disparity: reported financial wealth is much more concentrated compared to real estate wealth. The top 1% hold between 55% and 63% of the reported financial wealth, while their ownership in total real estate wealth amounts to about 21%. The bottom 50% have a similarly small share of both asset classes. The main groups that have an increase in their shares in real estate wealth compared to financial wealth are the middle 40% and the top 10%-1% group. The middle 40% have around 38% of real estate but only 15% of financial wealth, and the top 10%-1% have about 39% of real estate but only 24% of financial wealth. Figure 11 and Figure 10 zoom the distribution of financial wealth inside the top 1% for respectively financial and real estate wealth. They show that the top 0.01% holds alone between 19% and 27% of the reported financial wealth, while it holds no more than 5% of real estate wealth.

The relative importance of each wealth class varies considerably along the reported wealth distribution. Figure 12 compares the shares of each wealth class within each group of the wealth distribution. Since the pattern is very similar across the years, we present an average over all years. This figure shows that the bottom 50% has, on average, similar amounts of movable, real estate, and financial assets, representing respectively 34%, 28%, and 36%. In the middle 40% group, real estate becomes more significant, accounting for an average of 57% of reported assets, while movable assets decrease to 14%. The distribution pattern for the top 10%-1% group resembles that of the middle 40%. Housing emerges as the primary asset, representing 52% of total wealth, while movables become less prominent, accounting for only 6%. Financial wealth experiences an increase in its share passing from 27% in the middle 40% to 39% in the top 10%-1%. This trend of increasing importance for financial wealth continues within the top 1%-0.1% group, becoming the dominant wealth class as it reaches 60% of total reported wealth. The share of housing decreases to 33%. This pattern persists for the top 0.1%-0.01% and the top 0.01% groups, where financial wealth comprises 80% of their total reported wealth and real estate less than 15%.

It is interesting to note that the greater importance of financial wealth at the top of the distribution combined with the higher growth rates of financial wealth can explain the increasing concentration of reported wealth observed in the period. The combination of these two factors highlights the importance of understanding the growth drivers for each wealth class in order to explain changes in the wealth distribution.

Figure 13 presents the average share of reported debt over reported wealth for the period studied. It shows that debt decreases across the wealth distribution. The bottom 50% have, on average, debts accounting for 27.7% of the reported wealth. This figure decreases to 11.8%

for the middle 40% and 6.2% for the top 10%-1%. At the very top, debts reach only 4.1% of reported wealth for the top 0.01%. These shares indicate that the results for net wealth are more concentrated than the ones presented for reported wealth.

Table I presents in monetary terms the average reported wealth for each group in 2021. This table provides a more tangible understanding of the previous shares. The average individual in the bottom 50% has a total reported wealth of R$39,000, divided into R$11,000 of real estate, R$14,000 of movables, R$14,000 of financial assets, and R$1,000 from other sources. The typical individual in the middle 40% had nine times more reported wealth than those in the bottom 50%. On average, they had a house with a reported value of R$199,000, a car worth R$42,000, and R$94,000 in financial assets. Moving up to the top 10%-1%, the average reported wealth reaches R$1.8 million, with R$925,000 from real estate. The top 1%-0.1% surpasses an average threshold of R$10 million, with R$6.1 million in financial assets and R$3.2 million in real estate. These values continue to increase steadily for the top 0.1%-0.01%, reaching R$67 million, of which R$51 million are financial assets. The very top of the distribution gets very close to the billion Reais mark, reporting an average wealth of R$997 million, with R$749 million coming from financial assets.

4 Wealth Distribution

One main question is what we can learn about the distribution of wealth in the whole adult population by looking at wealth distribution in tax returns. It is important to recall that the figures discussed so far only represent how wealth is distributed among people who reported having some wealth on their tax returns. This group makes up between 12.3% and 15.3% of

the adult population during that period. This section presents an approach to estimate the wealth distribution in the whole adult population using tax tabulations and survey data.

4.1 Methodology

The main challenge to tackle is estimating the wealth share of non-tax filers. Brazil does not have a survey investigating wealth, so we cannot estimate it directly. Nevertheless, there is survey data on capital income. We can use information on the share of capital income going to tax filers and non-tax filers to infer how much wealth is not captured in the tax returns. To estimate the capital income division between tax filers and non-tax filers, we use the Continuous National Household Sample Survey (PNADC). This survey provides comprehensive information on earnings, occupation, formality status, and household characteristics.

The first step is to define which survey respondents fill the PIT. The main criterion for determining if an individual must file taxes is their earnings. However, a significant number of workers operate in the informal sector, so they may not fill in tax returns even if they gain more than the minimum threshold. To address this, we combine wage information with occupation, formality status, and contributions to the pension system.

When considering reported income, we include earnings from formal jobs, jobs that contribute to the pension system, and statutory public positions. Both primary and secondary job incomes are taken into account, as we aim to include all verifiable job earnings. Additionally, we include pensions and rents. We then compare this total reported income with the income threshold for tax filing. If an individual's income surpasses the threshold, they are required to file taxes. It's worth noting that Brazil's PIT has separate thresholds for tax-exempted income

and income subject to special tax regimes, which are mainly financial income. Consequently, some individuals may need to file tax returns even if their taxable income is low. To address this, we also consider individuals as tax filers if their survey-based financial income exceeds the threshold for tax-exempted income and income subject to special taxation. This procedure produces reasonable results. On average, over the years, it yields a number of taxpayers that is 14% higher than the effective number of taxpayers. For instance, in 2018, it indicates that 33.5 million individuals should have filed PIT returns, compared to the actual number of tax returns filed, which was 30.5 million. One possible explanation for the difference is the under-reporting of taxable income in order to evade tax payment, which results in more people above the reporting threshold in the survey than the actual number reporting.

Once we have identified the set of tax filers in the survey, we need to determine their capital income. We define capital income as the sum of financial income, rental income, and the portion of job income that exceeds one minimum wage for business owners.[2] Unsurprisingly, tax filers predominantly receive the majority of this capital income, approximately 87%.

However, this capital income variable only captures distributed income. It does not account for owner-occupied housing, which represents a significant form of wealth, especially in the middle of the distribution. To address this, we use information on rents and all the available house characteristics to predict the imputed rental value of owner-occupied housing. We use the method XGBoost for the prediction. The distribution of imputed rents approximates the distribution of housing wealth between filers and non-filers. Tax filers capture a smaller share of imputed rents compared to survey capital income, ranging between

[2]We subtract one minimum wage from the job income of business owners to account for the labour share of gains.

58% and 63% over the years.

The final step involves combining the survey share of capital income with the imputed rents. To accurately reflect their relative importance, we scale these two components using national accounts data. This procedure is necessary because the predicted imputed rents align almost perfectly with aggregated imputed rents in the national accounts, while the survey-based capital incomes only account for approximately one-third of the capital income observed in the national accounts.[3] After re-weighting based on these proportions, we obtain that the share of total capital income going to tax filers is 71%. Naturally, this share falls between the share for survey capital income and the share for imputed rents, as it represents a weighted average between the two.

We implemented the described procedure for the years 2016 to 2019. The household survey was different before 2016, and the COVID pandemic limited the availability of information to estimate imputed rents after 2019. Thus, for the years without survey data, we used the average shares obtained from the available years. In practice, the share of capital income allocated to non-tax filers exhibited relatively stable patterns throughout the estimated period, which provides reassurance for the extrapolation.

This procedure is imperfect for several reasons. First, survey data do not capture all the capital income, and this problem is particularly acute at the top of the distribution. Second, the capital income distribution may not exactly reflect the wealth distribution. Third, we do not directly observe who files taxes, and the procedure used to identify this group in the survey is subject to imprecision. Despite these possible limitations, it is also worth mentioning that

[3]The imputed rents are in the Supply and Use table (*Tabela de Recursos e Usos*), and the capital income comes from Interest and Distributed income of corporations accruing to the household sector in the Integrated Economic Accounts (*Contas Econômicas Integradas*).

the approach is conservative given the available data. Survey income tends to underestimate capital income, especially at the higher end of the distribution. This underestimation may result in a smaller share of capital income attributed to tax filers than what this group possess.

In addition to the estimation procedure described, we also present upper and lower-bound estimations based on extreme scenarios. The first possibility is to assume that individuals who do not file taxes or report zero wealth effectively have no wealth. This case is extreme, as some individuals that do not report may still own a house or have some savings. Nevertheless, it is a useful exercise for establishing an upper bound on the national wealth distribution based on tax filer data. The second possibility is to assume that the distribution of non-zero tax filers is representative of the entire population. This case is also very unlikely as we know that tax filers are predominately among those at the top of the wealth distribution given the criteria to file taxes. So the tax returns mostly describe the top of the wealth distribution. Nevertheless, this hypothesis allows us to define a lower bound to the wealth distribution in the population.

4.2 Top 1%

Figure 14 illustrates the national wealth shares based on the three scenarios described earlier. Additionally, the figure presents the shares obtained through the regression method, which infers the wealth distribution from the income distribution, as reported in the World Inequality Database (WID). In the estimation that assumes zero wealth for non-filers, the share of the top 1% progresses from 63.1% in 2006 to 65.9% in 2021. This estimation provides an upper bound for the national wealth distribution. The opposite extreme case is the estimation assuming that the distribution among tax filers is representative. The shares are the same as

those presented for reported wealth distribution among tax filers with the top 1% rising from 35.2% in 2006 to 44% in 2021. This estimation provides a lower bound for the national wealth distribution. In the intermediary case, which uses survey data to infer the share of wealth among non-filers, the top 1% increases from 44.8% in 2006 to 46.8% in 2021. These shares closely align with those estimated using the regression method. The estimation incorporating survey data is our preferred estimation given the available data.

4.3 Top 0.01% and Forbes Billionaires

Figure 15 focuses on the very top of the distribution, presenting two groups: the top 0.01% of the population using the estimation method previously presented and the wealth share of billionaires listed in Forbes Brazil.

The Forbes Billionaires list aims to cover all billionaires in dollar terms. To construct the group of Brazilian residents, we use public information on which billionaires are Brazilian residents, as they are the ones who must file tax returns. The wealth share of Forbes billionaires is calculated by dividing Forbes' wealth by the total wealth reported in tax returns. It is important to note that Forbes and PIT reported wealth do not follow the same concept. Forbes estimates billionaire wealth based on market value, while reported wealth does not necessarily reflect market value, as discussed earlier. Despite these differences, comparing these two shares is interesting for a couple of reasons. First, it helps assess if the evolution of the two measures aligns. Second, it provides insight into the portion of wealth within this top 0.01% that comes from billionaires.

Figure 15 shows that the top 0.01% wealth share went up from 12.2% in 2006 to 18% in 2021. Forbes billionaires, a group that increased from 13 to 56 individuals between 2006

and 2021, possess a market-value wealth that evolved from 2.5% to 6% of the total reported wealth. The fact that the wealth shares of Forbes billionaires show a similar increasing trend reinforces the consistency of the overall analysis using reported wealth. It also highlights the concentration of wealth even at the very top of the distribution.

5 Conclusion

The estimates have certain limitations, and we discuss their implications in the body of the note. Three future improvements include better incorporating national accounts, refining the procedure to estimate the wealth share that is not covered in the PIT data, and equally dividing the reported wealth among couples.

According to our findings, the top 1% showed a steady increase in its wealth share between 2006 and 2021. The rise in the top 1% share primarily steamed from the growth in the top 0.01%. The greater relative importance of financial wealth at the very top of the distribution combined with the faster growth of financial wealth is a potential explanation for this trend. These results stress the need for further investigation into the drivers of financial and real estate wealth to gain a better understanding of wealth distribution and its determinants.

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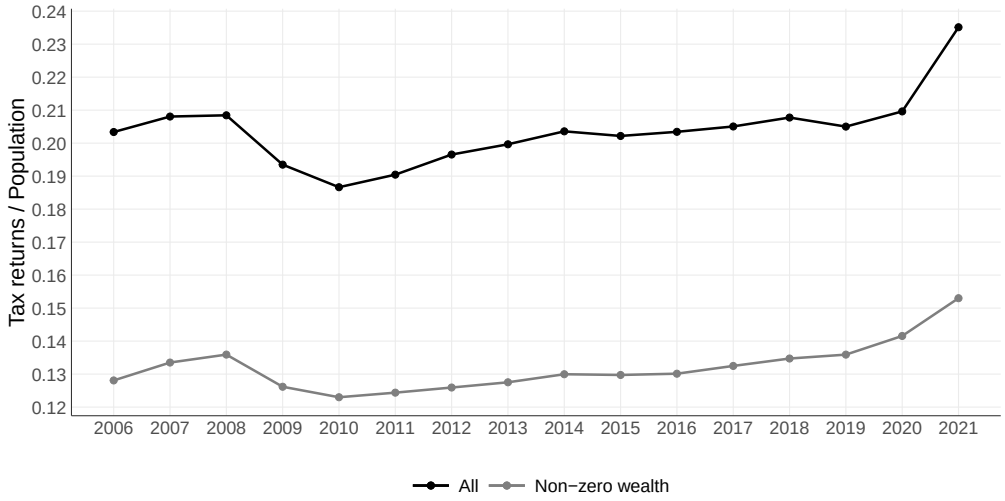
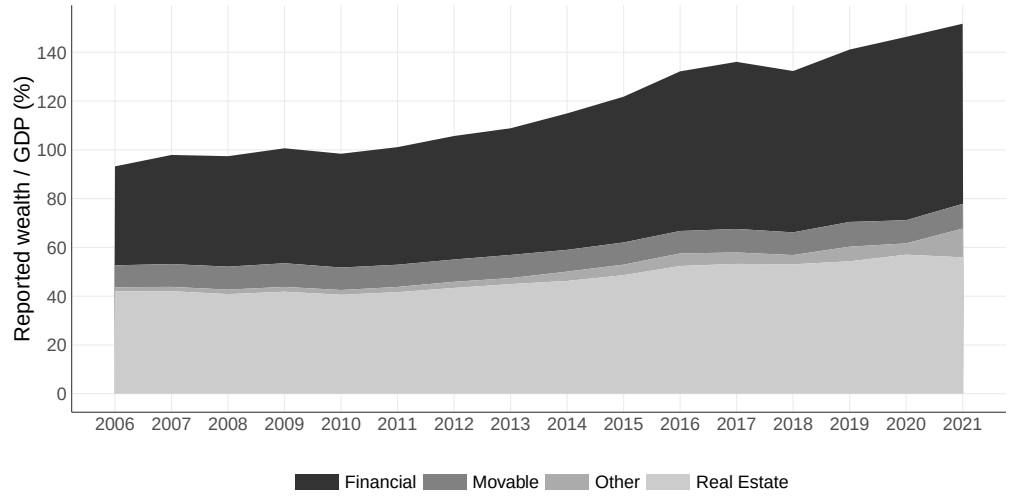
Figures and tables

Figure 1: Share of tax filers in the adult population, 2006-2021



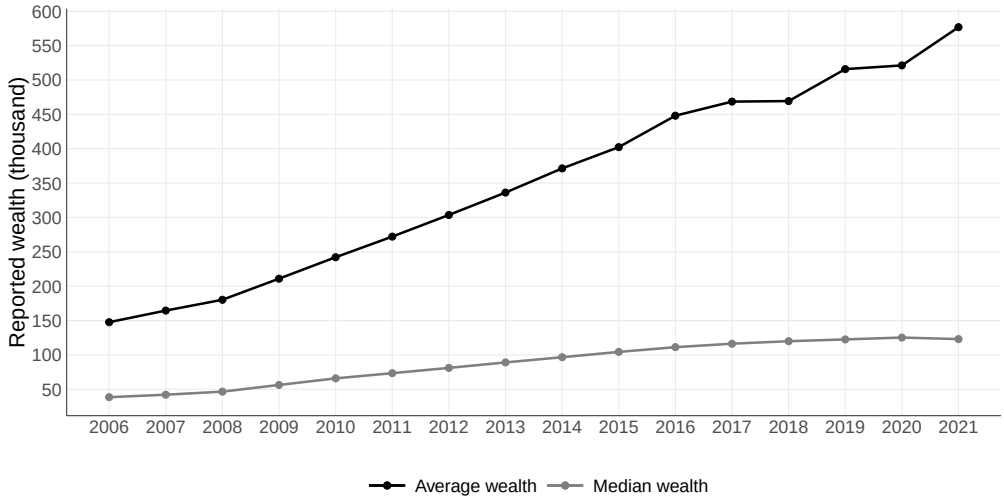
Source: Authors' computations combining tax tabulations and population data. *Interpretation:* In 2021, 23.5% of the adult population filed the PIT. In 2021, 15.2% of the adult population filed the PIT and reported non-zero wealth.

Figure 2: GDP share of reported wealth by wealth class, 2006-2021



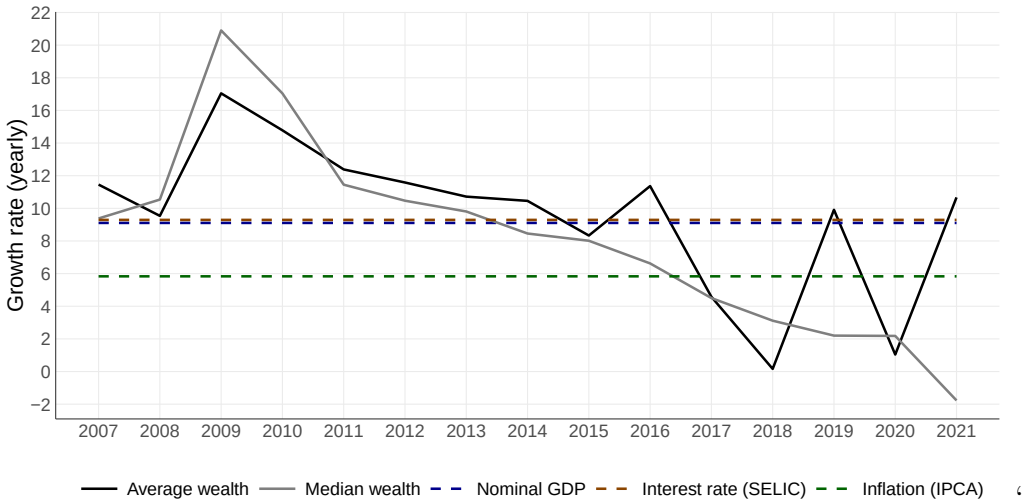
Source: Authors' computations combining tax tabulations and national accounts data.
Interpretation: In 2021, total reported wealth accounted for 152% of the GDP. Reported financial wealth corresponded to 74% of GDP, reported real estate corresponded to 56%, and movables and others wealth class jointly corresponded to 22% of GDP.

Figure 3: Average and median reported wealth, 2006-2021



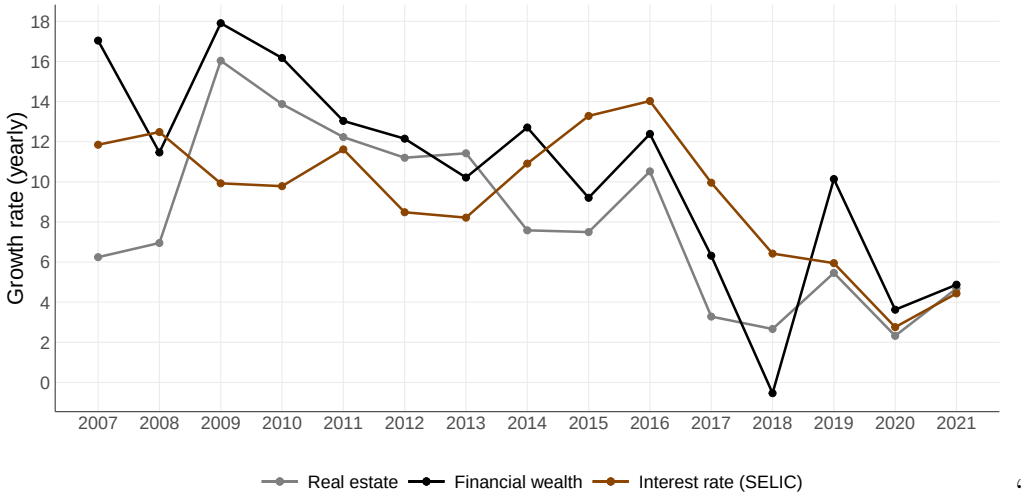
Source: Authors' computations using tax tabulation. *Interpretation:* In 2021, the average reported wealth was R$577,000, and the median reported wealth was R$123,000.

Figure 4: Reported wealth growth rates and macroeconomic indicators, 2006-2021



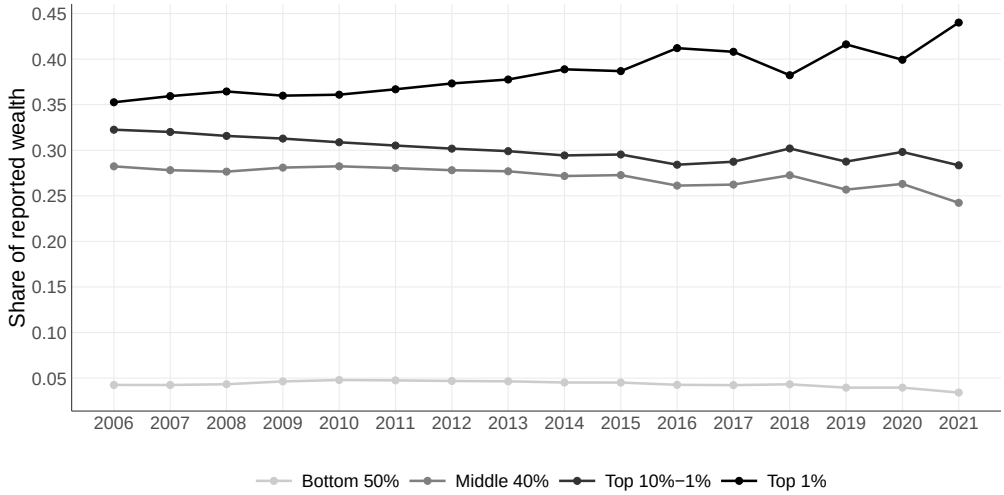
Source: Authors' computations combining tax tabulation, national accounts, and Central Bank data. *Interpretation:* In 2021, the average reported financial wealth grow by 4.9% and the median reported wealth decreased by 1.8%.

Figure 5: Reported wealth growth rates by wealth class, 2006-2021



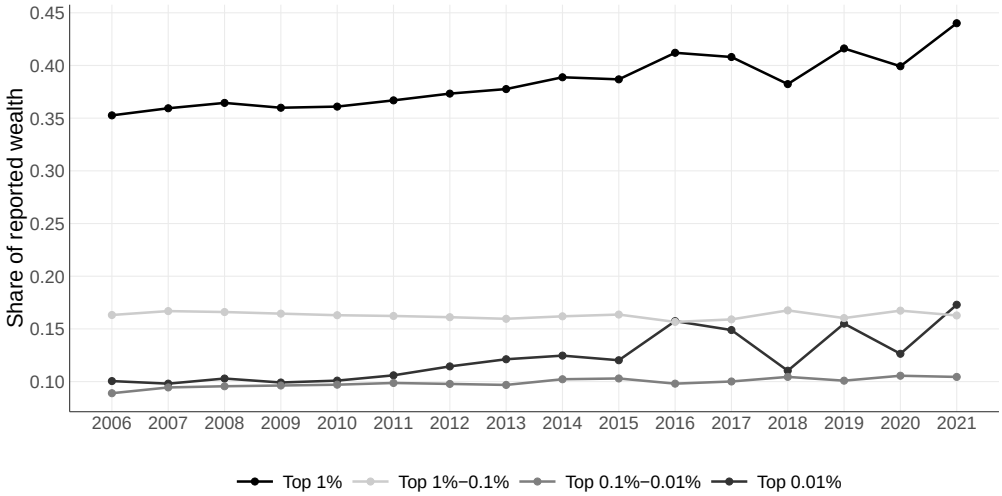
Source: Authors' computations combining tax tabulation, national accounts, and Central Bank data. *Interpretation:* In 2021, the average reported financial wealth grow by 4.9% and the average real estate wealth decreased by 4.7%.

Figure 6: Distribution of reported wealth, 2006-2021



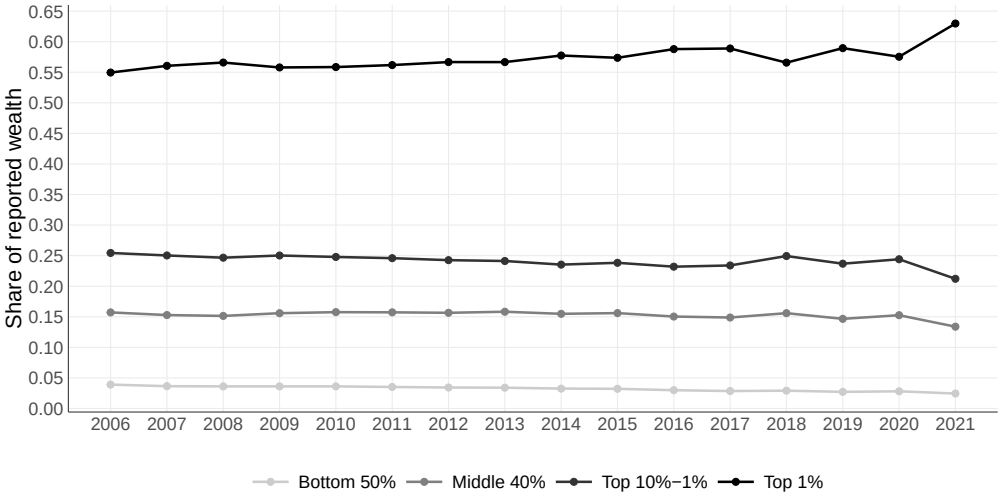
Source: Authors' computations using tax tabulation. *Interpretation:* In 2021, the top 1% of tax filers reporting non-zero wealth held 44% of the total reported wealth.

Figure 7: Distribution of reported wealth in the top 1%, 2006-2021



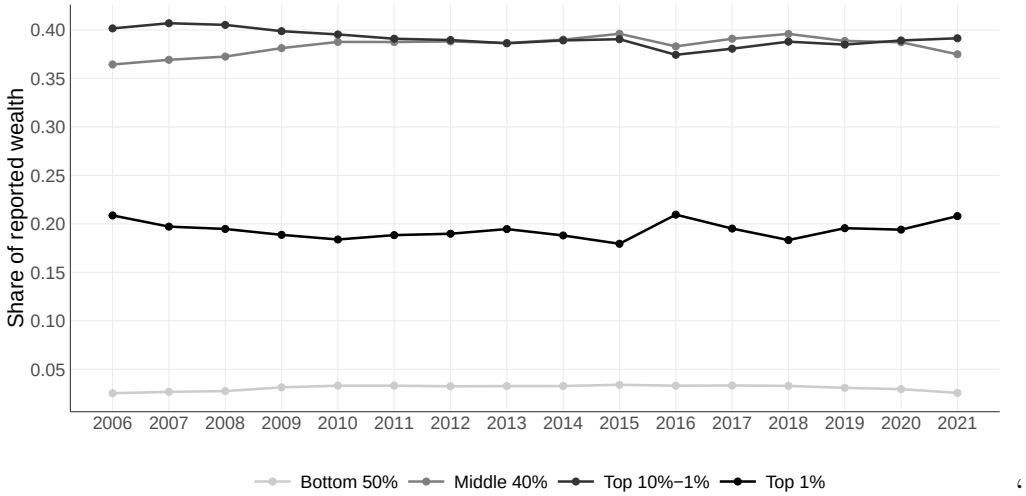
Source: Authors' computations using tax tabulation. *Interpretation:* In 2021, the top 0.01% of tax filers reporting non-zero wealth held 17.3% of the total reported wealth.

Figure 8: Distribution of reported financial wealth, 2006-2021



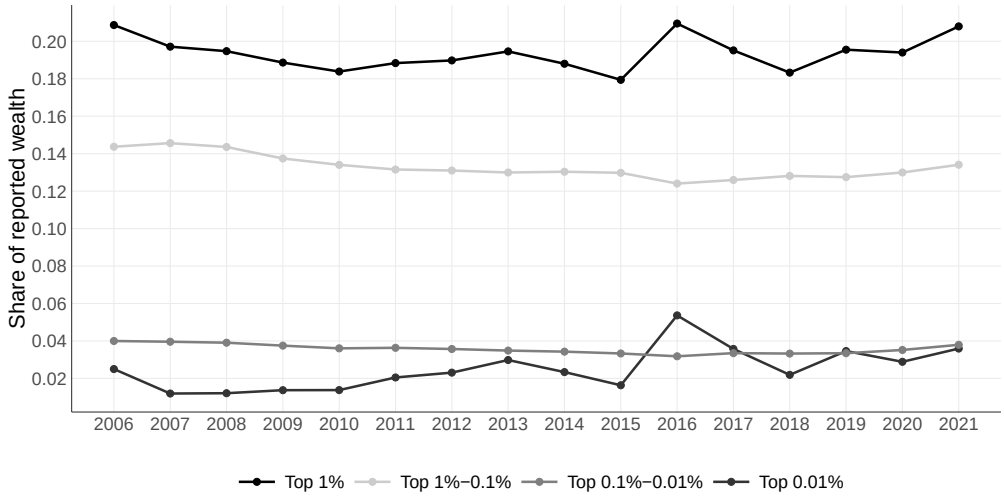
Source: Authors' computations using tax tabulation. *Interpretation:* In 2021, the top 1% of tax filers reporting non-zero wealth held 63.0% of the total reported financial wealth.

Figure 9: Distribution of reported real estate wealth, 2006-2021



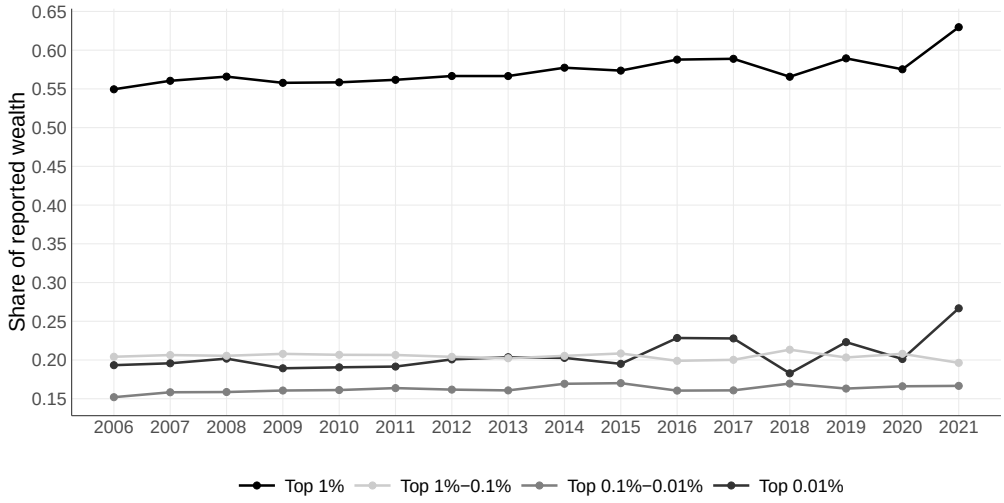
Source: Authors' computations using tax tabulation. *Interpretation:* In 2021, the top 1% of tax filers reporting non-zero wealth held 20.8% of the total reported real estate wealth.

Figure 10: Distribution of reported real estate wealth in the top 1%, 2006-2021



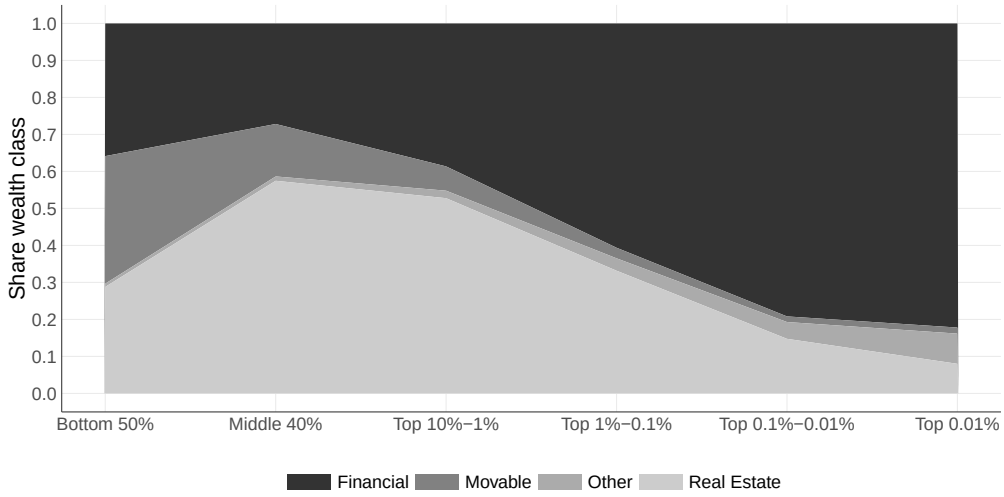
Source: Authors' computations using tax tabulation. *Interpretation:* In 2021, the top 0.01% of tax filers reporting non-zero wealth held 3.6% of the reported real estate wealth.

Figure 11: Distribution of reported financial wealth in the top 1%, 2006-2021



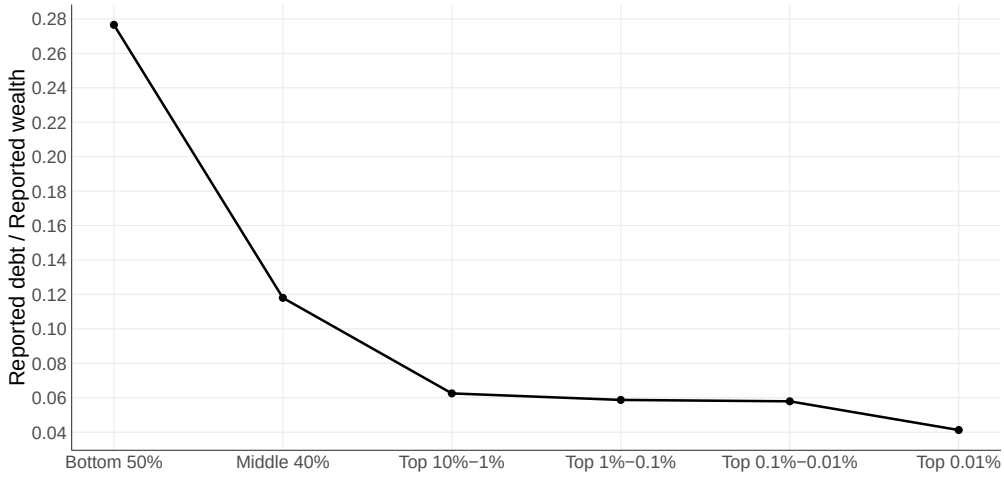
Source: Authors' computations using tax tabulation. *Interpretation:* In 2021, the top 0.01% of tax filers reporting non-zero wealth held 27.7% of the reported financial wealth.

Figure 12: Share of wealth classes along the wealth distribution, average 2006-2021



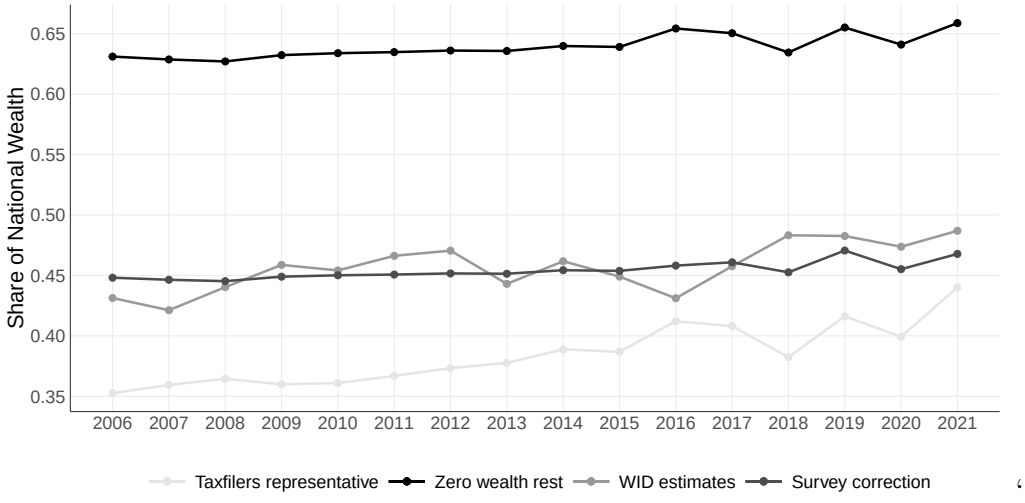
Source: Authors' computations using tax tabulation. *Interpretation:* On average between 2006 and 2021, real estate represented 28% of total reported wealth for the bottom 50% of tax filers reporting non-zero wealth.

Figure 13: Share of reported debt over reported wealth along the wealth distribution, average 2006-2021



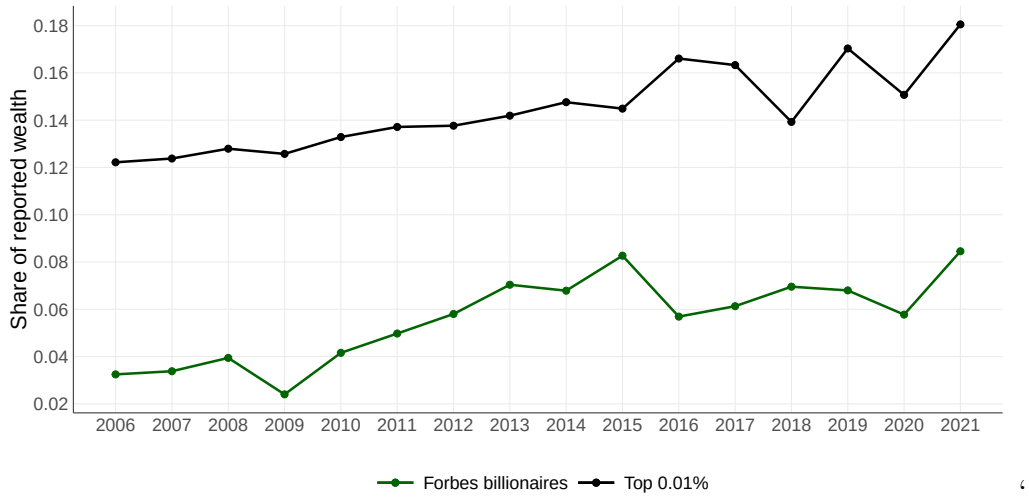
Source: Authors' computations using tax tabulation. *Interpretation:* On average, between 2006 and 2021, the reported debt reached 27.7% of total reported wealth for the bottom 50% of tax filers reporting non-zero wealth.

Figure 14: Top 1% wealth share, 2006-2021



Source: Authors' computations combining tax tabulations, survey, and national accounts. *Interpretation:* The survey-corrected estimation points that the top 1% wealthier adults held 46.8% of the total wealth in Brazil in 2021.

Figure 15: Top 0.1% and Forbes Billionaires wealth share, 2006-2021



Source: Authors' computations combining tax tabulations, survey, national accounts, and Forbes Billionaires list data. *Interpretation:* The survey-corrected estimation points that the top 0.01% wealthier adults held 18% of the total wealth in Brazil in 2021. Brazil's Forbes billionaires had a market-value wealth that accounted for 6% of the total reported wealth in 2006.

Table I: Average reported wealth per group and wealth class, 2021

Group (thousand)	Total wealth	Real estate	Movables	Financials	Others
Bottom 50%	39	11	14	14	1
Middle 40%	349	199	42	94	14
Top 10%-1%	1817	925	93	662	137
Top 1%-0.1%	10430	3167	225	6126	912
Top 0.1%-0.01%	66926	8962	872	51983	5110
Top 0.01%	997455	76400	38654	749008	133393

Source: Authors' computations using tax tabulation. *Interpretation:* In 2021, the top 0.01% of tax filers reporting non zero wealth reported on average R$749,008,000 of financial wealth.