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Poverty and inequality in Brazil in the short and long run

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Poverty and inequality in Brazil in the short and long run
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ACRONYMS

BPC: *Benefício de Prestação Continuada* (Continuous Cash Benefit)

BRL: Brazilian Real (ISO 4217 Currency Code)

DISOC: *Diretoria de Estudos e Políticas Sociais* (Directorate of Social Studies and Policies)

FGT: Foster-Greer-Thorbecke (poverty measures)

GDP: Gross Domestic Product

IBGE: *Instituto Brasileiro de Geografia e Estatística* (Brazilian Institute of Geography and Statistics)

IPCA: *Índice Nacional de Preços ao Consumidor Amplo* (Extended National Consumer Price Index)

IPEA: *Instituto de Pesquisa Econômica Aplicada* (Institute for Applied Economic Research)

PAB: *Programa Auxílio Brasil*

PBF: *Programa Bolsa Família*

PNAD: *Pesquisa Nacional por Amostra de Domicílios* (National Household Sample Survey)

PNADC: *Pesquisa Nacional por Amostra de Domicílios Contínua* (Continuous National Household Sample Survey)

PPP: Purchasing Power Parity

USD: United States Dollar (ISO 4217 Currency Code)

POVERTY AND INEQUALITY IN BRAZIL IN THE SHORT AND LONG RUN[1]

Pedro H. G. Ferreira de Souza and Marcos D. Hecksher

1 ABSTRACT

This Working Paper documents, decomposes, and analyses changes in the distribution of income in Brazil from 1995 to 2024, drawing on microdata from the Brazilian Institute of Geography and Statistics (IBGE) household surveys. By splicing PNAD and PNADC survey data, the study evaluates the long-term trajectory of per capita household income, the Gini coefficient, the Palma ratio, and poverty rates based on updated World Bank international poverty lines (USD3.00 and USD8.30 per day, using 2021 PPP factors). Income levels, inequality, and poverty indicators improved markedly over the long run. Mean income increased by approximately 70 per cent, the Gini coefficient declined by nearly 18 per cent, and the extreme poverty rate fell from 25 per cent to less than five per cent. However, progress was concentrated in two distinct periods: 2003–2014 and the post-pandemic recovery. Consequently, in 2024, social indicators reached their most favourable levels. Shapley-Shorrocks decomposition analyses indicate that recent distributional gains stemmed equally from labour market improvements and the expansion of social assistance transfers, such as the *Bolsa Família* Programme. Furthermore, Datt-Ravallion decompositions reveal that the rapid reduction in poverty since the pandemic's peak resulted from a virtuous combination of both mean income growth and reduced income inequality.

Keywords: income inequality; poverty; income distribution; cash transfers.

JEL: D31; H53; I32; I38

2 INTRODUCTION

Income distribution in Brazil underwent abrupt shifts in the early 2020s, characterised by significant instability in poverty and inequality indicators amid the turbulence generated by the COVID-19 pandemic (Neri and Hecksher, 2022; Souza, Osorio and Hecksher, 2022; Souza, 2024). The availability of data collected after the end of the health crisis allows for a reassessment of recent developments and the establishment of long-term comparisons that place the trajectory of poverty and inequality in Brazil in its proper historical perspective.

1. This Working Paper presents a translated and slightly modified version of Souza and Hecksher (2025). It has been specifically adapted for an international readership, incorporating a glossary of Brazil's social assistance and social security programmes alongside additional explanatory footnotes.

Accordingly, the objective of this note is to document, decompose, and analyse the changes in income distribution captured by household surveys in annual series from 1995 to 2024. Our analysis is divided into two parts.

First, we describe the long-term evolution of mean income, inequality, and poverty. By splicing the current PNADC series with those of the former PNAD, we extend the analysis back to 1995—the year in which household income data ceased to be distorted by the hyperinflation that preceded the Real Plan—thereby enabling more robust comparisons.

Second, we focus on the PNADC period, beginning in 2012, to quantify the contributions of specific determinants of recent changes and to address three questions: (i) what is the static effect of social assistance transfers in each year? (ii) how much did each income source contribute to changes in inequality and poverty? and (iii) to what extent was poverty affected by economic growth versus changes in income distribution in each period?

The results indicate that, over the long run, Brazil has experienced significant improvements. Over the three decades between 1995 and 2024, mean income increased by approximately 70 per cent, the Gini coefficient declined by nearly 18 per cent, and the extreme poverty rate fell from 25 per cent to less than 5 per cent in household surveys.

However, progress was non-linear, clustering in two well-defined periods: 2003–2014 and, more recently, the post-pandemic recovery between 2021 and 2024. By 2024, Brazil had reached the best results in the household-survey series for mean income, inequality, and poverty.

In the short run, our decompositions indicate that the improvement between 2021 and 2024 was driven equally by the recovery of the labour market and by the expansion of social assistance transfers,[2] the latter having become significantly more effective in reducing inequality and poverty.

Our analysis relies entirely on household survey data, which are subject to well-documented limitations globally. For instance, these surveys systematically encounter challenges in accurately capturing the income of own-account workers and employers, social assistance transfers and—most notably—capital and financial income, alongside other irregularly received earnings.

In Brazil, income concentration at the top is substantially higher in tax data and follows a trajectory distinct from that revealed by household surveys (De Rosa, Flores and Morgan, 2024; Medeiros, Souza and Castro, 2015a, 2015b; Souza, 2018a, 2018b). At the same time, social assistance transfers from the Continuous Cash Benefit (*Benefício de Prestação Continuada*—BPC), the *Bolsa Família* Programme (PBF), and similar schemes are also underestimated in both the PNAD and PNADC (Paiva, Sousa and Nunes, 2020; Rocha, 2008; Soares et al., 2007; Souza and Bruce, 2022).

Due to data limitations and the absence of universally accepted adjustment methodologies, we do not apply corrections to address these issues. All reported results should therefore be interpreted with this caveat.

Our estimates incorporate two recent methodological revisions: the update of the World Bank's international poverty lines, recalculated using 2021 purchasing power parity (PPP) factors (Foster et al., 2025), and the reweighting of the entire microdata series of the

2. As of 2024, the informality rate remains near 39 per cent (IBGE 2024), which underscores the critical role of non-contributory social assistance programmes—such as the *Bolsa Família*—for households without access to contributory social security (Corseuil et al. 2022)

Continuous National Household Sample Survey (PNADC) based on population estimates derived from the 2022 Census (IBGE, 2025).

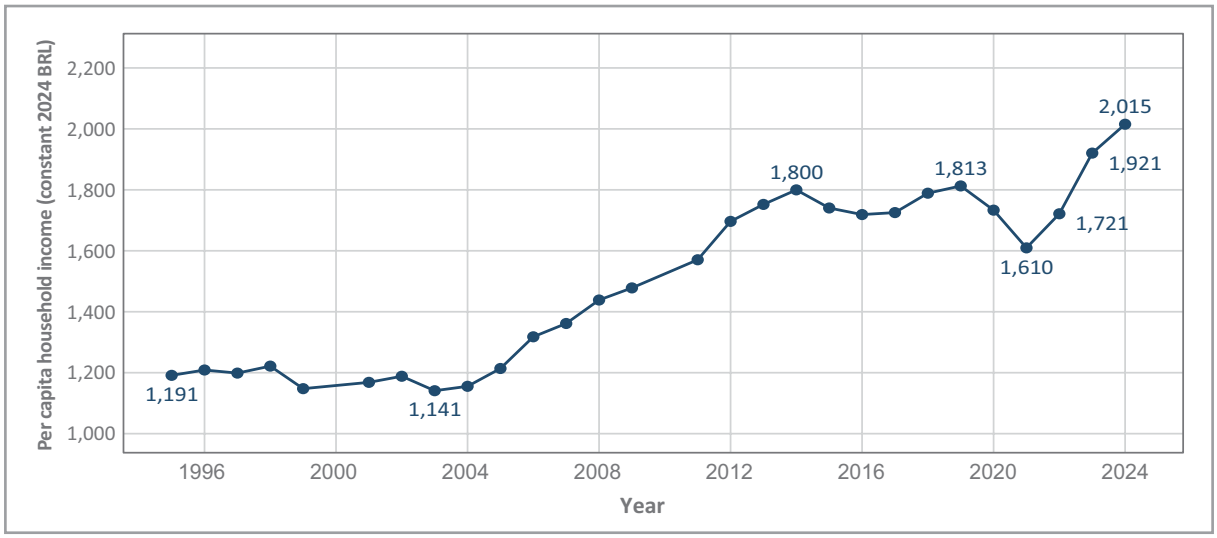
To facilitate readability, these and other methodological details are presented in the Appendix, which describes the data sources, variable construction procedures, time-series linking methods, poverty lines, and the formulas used to compute indicators and decompositions.

3 INCOME, INEQUALITY AND POVERTY FROM 1995 TO 2024

The first time a large sample of Brazilians reported their incomes to the IBGE in *reais* occurred three decades ago. In 1994, budgetary constraints precluded the implementation of the first PNAD under the new currency; however, when the survey was fielded the following year, 12-month cumulative inflation had already been reduced from four digits to two. Even more so than prices, nominal incomes had become considerably more stable, predictable and easier to report to enumerators.

Figure 1 presents the evolution of per capita household income, expressed in constant 2024 prices, by splicing the former PNAD series with the current PNADC. Real growth in mean household per capita income between 1995 and 2024 was nearly 70 per cent, implying an average annual growth rate of 1.8 per cent—a pace exceeding that of per capita Gross Domestic Product (GDP) (1.3 per cent per year).[3]

FIGURE 1. Per capita household income—Brazil, 1995–2024 (constant 2024 BRL)



Source: Authors' elaboration based on PNAD (1995–2012) and PNADC (2012–2024) microdata. See the Appendix for further information.

However, this growth was not uniform across the period. In 1995, mean income was BRL1,191 per month per inhabitant, a value that changed little in the initial years of the new

3. Information on per capita GDP was extracted from the Central Bank website and covers the period between 1996 and 2024. Available at: http://www.bcb.gov.br. Accessed 22 September 2025.

currency as the country endured a series of macroeconomic crises. In 2003, the income of the 'average Brazilian' was four per cent lower than in 1995. From that point onward, however, the country experienced 11 consecutive years of real growth in per capita household income. This accumulated to a 58 per cent increase—equivalent to an average of 4.2 per cent per year—reaching BRL1,800 in 2014. Approximately 80 per cent of the overall increase in per capita household income between 1995 and 2024 occurred in the interval from 2003 to 2014.

The subsequent period was characterised by multiple crises. The severe recession of 2014–2016 reduced mean income by 4.5 per cent, and the sluggish recovery in the second half of the decade was only sufficient to restore it to the previous baseline. The pandemic then induced further income shocks; by 2021, per capita household income had fallen to its lowest level in a decade.

Finally, the indicator recovered during the three-year period of highest growth in mean purchasing power since the Real Plan, registering a cumulative increase of over 25 per cent—or 7.8 per cent per year—between 2021 and 2024. In the latter year, mean income reached a historical peak (BRL2,015 per person, in constant 2024 prices). The recovery of mean income in recent years tracked that of per capita GDP, which once again outperformed the global average in 2023 and 2024, a phenomenon not observed since 2013.[4]

Figures 2 and 3 display the evolution of income inequality in household surveys according to the Gini coefficient and the Palma ratio, respectively. In both instances, higher values denote greater inequality. The Gini coefficient ranges from zero (perfect equality) to 100 (absolute concentration), while the Palma ratio is defined as the income share held by the richest 10 per cent divided by that of the poorest 40 per cent.[5]

The results reveal similar patterns, exhibiting a high correlation between the inequality trajectory and the economic cycles previously discussed: stagnation in the 1990s, rapid improvements in the 2000s, an inflection and reversal between the recession of the 2010s and the COVID-19 pandemic, and, finally, a renewed period of progress since 2021.

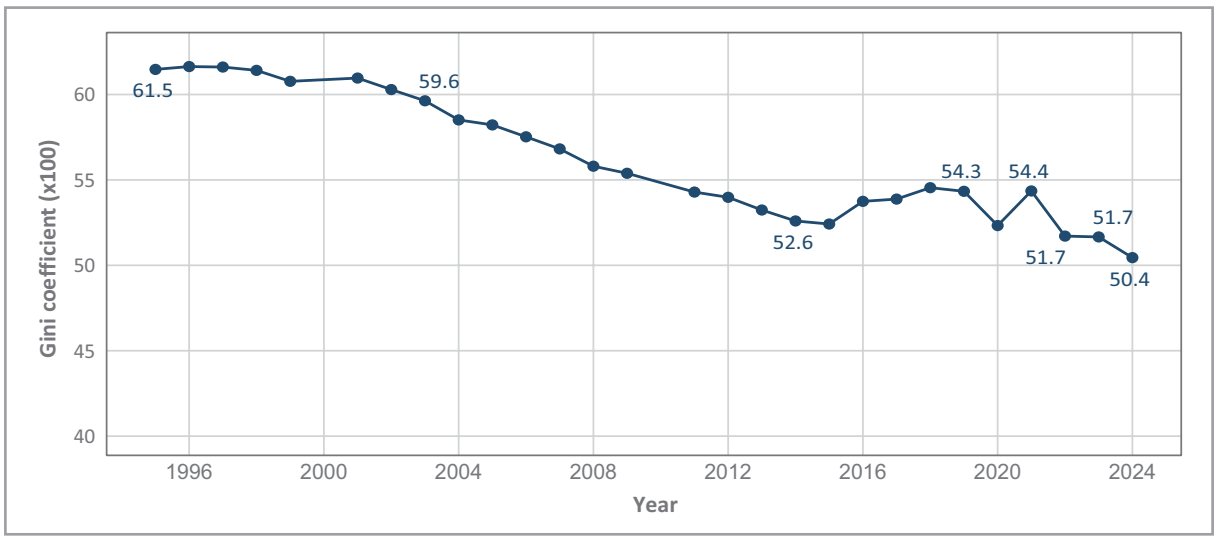
Specifically, both the Gini coefficient and the Palma ratio remained relatively stable, with a slight downward trend, in the second half of the 1990s, but began to decline more distinctly as early as 2002, preceding the onset of economic recovery. From that point onward, both metrics fell continuously year on year, without any rebound, until 2015, registering a sequence of 14 consecutive years of reduction during a period of economic expansion. The Gini coefficient recorded a cumulative decline of 8.5 points (14 per cent) since 2001, while the Palma ratio fell by 2.5 points (40 per cent). Although Brazil remained among the world's most unequal nations, these were substantial reductions, unprecedented in national household surveys and rare globally, though also observed in other Latin American countries during the same period (Barros et al. 2006; Gasparini and Lustig 2011; Soares 2008).[6]

4. Data compiled by the World Bank. Available at: https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?end=2024&locations=BR-1W&start=1995 (Accessed 23 March 2026). Because the original dataset only provides absolute levels for GDP per capita, PPP (constant 2021 international $), the growth rates discussed here were calculated independently by the author.

5. For further information, see section A5 of the Appendix.

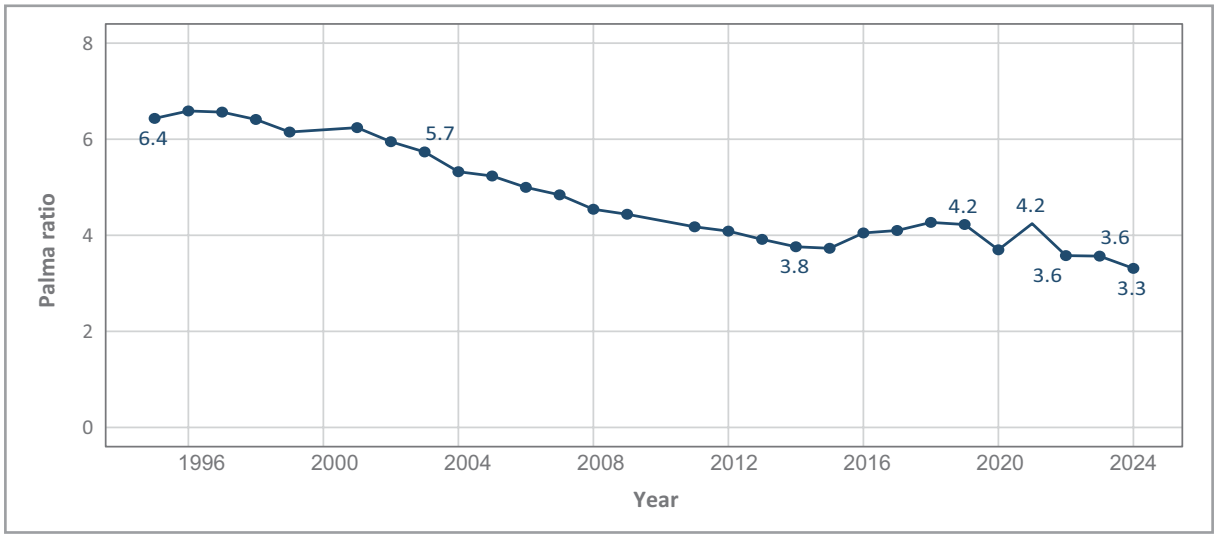
6. Studies based on tax data have reached less optimistic conclusions, pointing to stability in income concentration at the top and modest or non-existent reductions in synthetic measures such as the Gini coefficient (De Rosa, Flores and Morgan 2024; Medeiros, Souza and Castro 2015a, 2015b; Souza 2018a, 2018b).

FIGURE 2. Gini coefficient—Brazil, 1995–2024



Source: Authors' elaboration based on PNAD (1995–2012) and PNADC (2012–2024) microdata. See the Appendix for further information.

FIGURE 3. Palma ratio—Brazil, 1995–2024



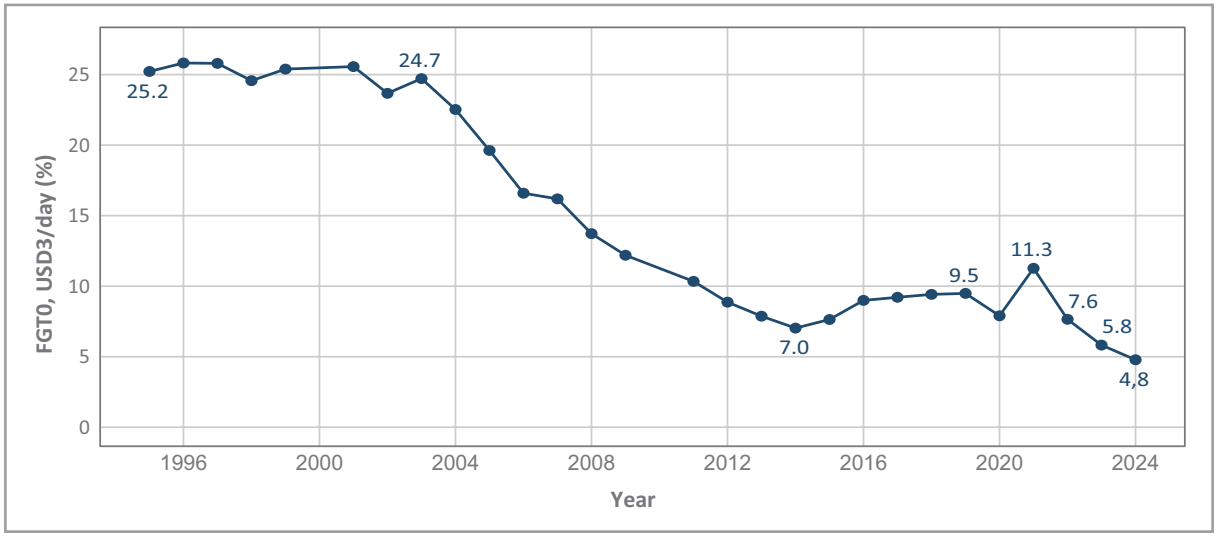
Source: Authors' elaboration based on PNAD (1995–2012) and PNADC (2012–2024) microdata. See the Appendix for further information.

This movement was reversed during the subsequent crises. Between 2018 and 2021, both inequality measures reverted to early 2010s levels. The notable exception during this period was the pandemic year of 2020, when the initial and most generous round of the Emergency Aid (*Auxílio Emergencial*—AE) temporarily drove the Gini coefficient and the Palma ratio to their lowest levels recorded up to that point. However, the abrupt reduction in transfers in 2021 completely offset the decline in inequality experienced the previous year.

Once again, the resumption of growth was accompanied by a reduction in inequality, which reached new historical lows in 2024. As detailed in the subsequent section, the labour market recovery and the expansion of social assistance transfers contributed to declines of

seven per cent and 22 per cent in the Gini coefficient and the Palma ratio, respectively, in just three years. Unlike mean income, which grew most in 2023, the greatest gains against inequality occurred in 2022 and 2024, with the indices remaining stable in 2023.

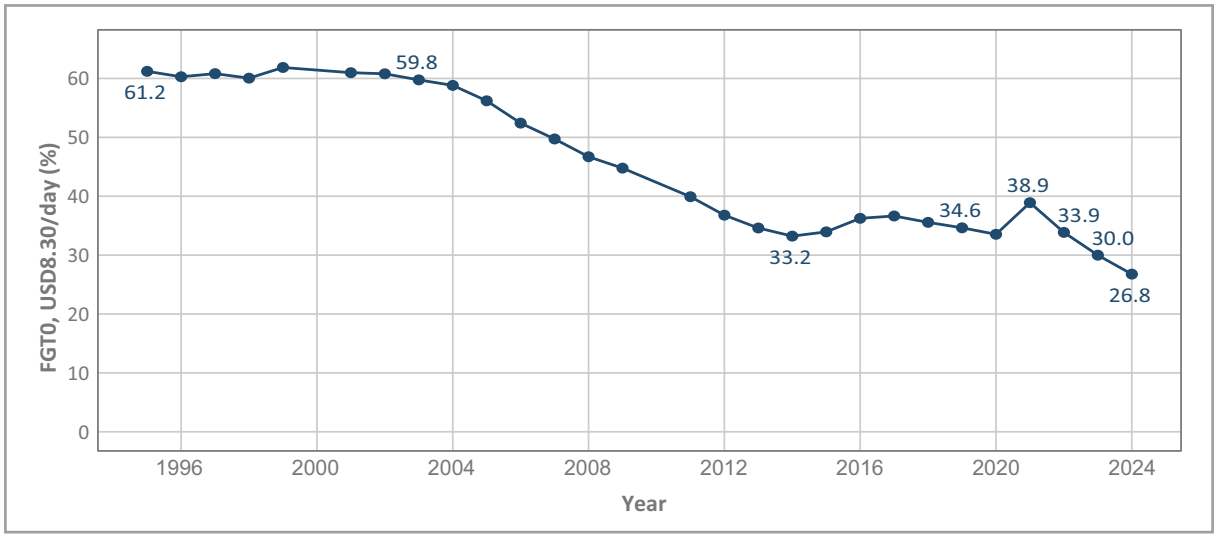
FIGURE 4. Extreme poverty rate for the USD3.00/day line—Brazil, 1995–2024



Note: The extreme poverty line of USD3.00 per person per day, using 2021 PPP factors, corresponds to BRL267 per person per month in average 2024 prices. See the Appendix for further information.

Source: Authors' elaboration based on PNAD (1995–2012) and PNADC (2012–2024) microdata. See the Appendix for further information.

FIGURE 5. Poverty rate for the USD8.30/day line—Brazil, 1995–2024



Note: The poverty line of USD8.30 per person per day, using 2021 PPP factors, corresponds to BRL738 per person per month in average 2024 prices. See the Appendix for further information.

Source: Authors' elaboration based on PNAD (1995–2012) and PNADC (2012–2024) microdata. See the Appendix for further information.

The recent combination of economic growth and reduced inequality produced considerable progress against poverty, which reached the lowest level in the historical series

in 2024. Figures 4 and 5 report the trajectory of the poverty headcount ratio for two poverty lines calculated by the World Bank and frequently used in cross-country comparisons. For simplicity, we refer to the USD3.00 per person per day line (Figure 4) as the 'extreme poverty' line, as it reflects the national standards of the world's poorest countries. The USD8.30 per person per day line adopts upper-middle-income countries (including Brazil) as a benchmark and is characterised here as the 'poverty line'. These lines correspond, respectively, to BRL267 and BRL738 per person per month in average 2024 prices. As noted, both lines, along with the intermediate USD4.20 per day line, were updated in mid-2025, incorporating 2021 PPP factors (Foster et al. 2025).[7]

Poverty estimates replicate previous patterns, alternating between periods of stagnation (or even setbacks) and progress. In the mid-1990s, 25 per cent of the population lived in extreme poverty and over 60 per cent were poor, percentages that remained stable until 2003. In the 11 years between 2003 and 2014, which combined mean income growth with falling inequality, these rates declined continuously. The extreme poverty rate decreased by 17.7 percentage points (p.p.), from 24.7 per cent to 7.0 per cent, while the poverty headcount ratio retreated by 26.5 p.p., from 59.8 per cent to 33.2 per cent.

The reversal of this trajectory in the 2015–2021 period was more dramatic for extreme poverty, which rose by more than four p.p., reflecting the disproportionate impact of the macroeconomic crises on the poorest of the poor (Souza, Hecksher and Osorio 2022). In any case, by 2021, both rates had returned to levels similar to those observed 10 years prior.

Conversely, poverty plummeted with the recovery from the pandemic's nadir, registering historical lows in 2024. Extreme poverty decreased by 6.5 p.p. and poverty by over 12 p.p.; in both cases, the improvement was particularly robust at the onset of the recovery but persisted at a significant pace through the end of the series. In 2024, PNADC data indicated that 4.8 per cent of Brazilians lived in households with an income below BRL267 per person per month, and 26.8 per cent lived in households with an income of less than BRL738 per person per month.

4 DETERMINANTS OF RECENT CHANGES ON INEQUALITY AND POVERTY IN BRAZIL

As demonstrated in Section 2, recent years have seen major advances in social indicators following periods of stagnation or setbacks. In this section, we employ a series of comparisons and decompositions to elucidate changes in the income distribution and poverty as captured by household surveys.

The most significant development in Brazilian social assistance policy in recent years was the unprecedented expansion of social assistance transfers during and after the pandemic. Between 2019 and 2024, transfers from the PBF and BPC[8] grew by 135 per cent in real terms. In relative terms, these expenditures increased from 1.2 per cent to 2.3 per cent of GDP.

7. For further information, see section A4 of the Appendix. Results for the USD4.20 per day line, as well as estimates for FGT(1) and FGT(2) indicators, were omitted for reasons of space.

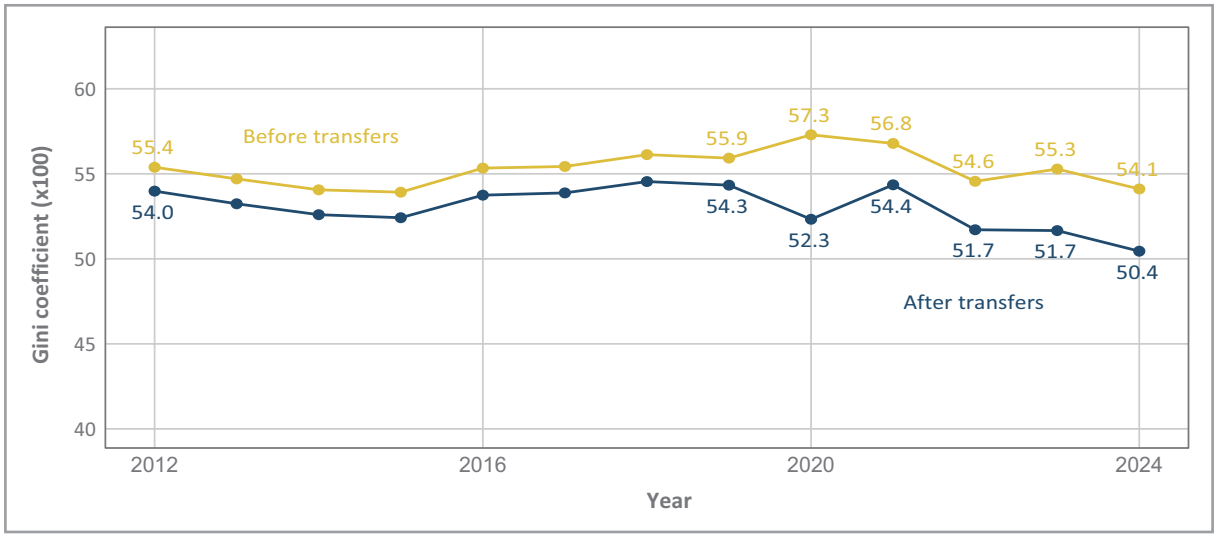
8. In Brazil, several social protection benefits, including the BPC and the floor for social security pensions (both urban and rural), are constitutionally linked to the federal minimum wage. Consequently, the real value of these transfers is directly determined by the national minimum wage appreciation policy (Barbosa et al. 2020)

A standard first-order fiscal incidence analysis provides a static approximation of the programmes' annual impact by comparing indicators before and after the disbursement of these transfers.[9] Figures 6 and 7 present estimates for the Gini coefficient and the extreme poverty rate (USD3.00 per day, 2021 PPP), respectively. The post-transfer values are identical to those in the previous section, while the pre-transfer figures are calculated based on per capita household income excluding benefits from the BPC, PBF, *Auxílio Brasil* Programme (PAB), and AE.

In the annual static comparisons, the effects of these transfers have increased substantially since 2020, in both absolute and relative terms. Over the 2023–2024 period, the reduction in inequality and extreme poverty following the inclusion of transfers was more than double the average observed in the 2010s. It is no coincidence that these two years presented the best figures in the historical series—excluding the atypical year of 2020, when the AE exceptionally raised social assistance transfers to 4.6 per cent of GDP.[10]

Figure 6 shows that the relative effect of transfers on the Gini coefficient doubled. Between 2012 and 2019, the inclusion of transfers reduced the Gini coefficient by only 1.5 points on average (approximately three per cent); this reduction reached 3.7 points (nearly seven per cent) in 2024. Consequently, the pre- and post-transfer series have diverged. While post-transfer Gini coefficients indicate a significant reduction in inequality since 2021—reaching the lowest value in the PNADC historical series—pre-transfer results point to fluctuations around the same level since 2012.

FIGURE 6. Gini coefficient before and after social assistance transfers—Brazil, 2012–2024



Source: Authors' elaboration based on PNADC (2012–2024) microdata. Note: Social assistance transfers include the BPC, PBF, PAB, and the 2020 and 2021 AE. See the Appendix for further information.

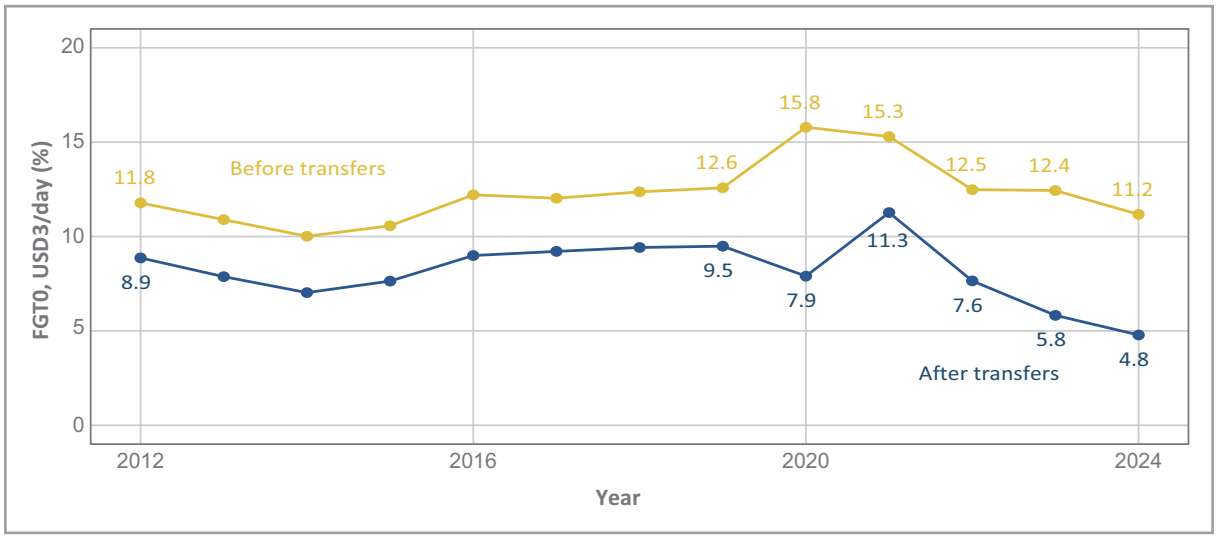
Figure 7 yields substantively identical results for the extreme poverty rate—the relative effect of transfers doubled. The mean difference between the series jumped from

9. The comparison should be interpreted as descriptive rather than causal. The income distribution "before transfers" constitutes a valid counterfactual for what would be observed if benefits did not exist or were extinguished only under very strong assumptions, such as the complete absence of labour supply effects in beneficiary families and the non-existence of externalities affecting the incomes of other families.

10. Regarding the effects of Emergency Aid on poverty, see Souza, Hecksher and Osorio (2022).

approximately 3 p.p. in the 2010s to 6.6 p.p. in 2023 and 6.4 p.p. in 2024. Only the 2020 figures, bolstered by the AE, were superior to those of the last two years. As with the Gini coefficient, the growing static effect of transfers generated a decoupling of the series. Extreme poverty based on post-transfer income has plummeted by 6.5 p.p. since 2021, reaching a historical minimum in 2024. Even starting from a much higher baseline, extreme poverty estimated for pre-transfer income declined by only 4 p.p., with the majority of this retreat concentrated in the 2021–2022 period, as the country surmounted the worst of the pandemic.

FIGURE 7. Extreme poverty rate for the USD3.00/day line before and after social assistance transfers—Brazil, 2012–2024



Note: The extreme poverty line of USD3.00 per person per day, using 2021 PPP factors, corresponds to BRL267 per person per month in average 2024 prices. Social assistance transfers include the BPC, PBF, PAB, and the 2020 and 2021 AE. See the Appendix for further information.

Source: Authors' elaboration based on PNADC (2012–2024) microdata.

Tables 1 and 2 deepen the analysis via decompositions of the variation in inequality and extreme poverty between two points in time. Both tables present results from Shapley-Shorrocks decompositions, apportioning variations in the Gini coefficient and poverty rate among four income sources (labour, social security, social assistance, and other income). These decompositions serve a descriptive rather than causal purpose, as they are calculated from mechanically generated counterfactuals where changes in income sources occur sequentially (Azevedo, Inchauste and Sanfelice 2013).[11] We report results for periods before (2012–2014 and 2014–2019), during (2019–2021), and after (2021–2024) the COVID-19 pandemic, as well as the variation observed over the last period (2023–2024).

Post-pandemic progress is associated with a tightening of the labour market—which resumed its decisive contribution to inequality and poverty reduction—and the expansion of social assistance transfers. However, as the PBF expansion cycle concluded, the dynamic contribution of social assistance lost momentum over the 2023–2024 period, reflecting only

11. For further information, see section A6 of the Appendix.

marginal changes in targeting[12] and, primarily, the more recent expansion of the BPC, whose transfers are unfortunately poorly captured by the PNADC.

Table 1 shows that changes in labour earnings and social assistance transfers are associated with, respectively, 49 per cent and 44 per cent of the 3.9-point drop in the Gini coefficient between 2021 and 2024. Social security benefits and other income played only a residual role. This pattern shifts if we examine only the final period: about half of the 1.2-point reduction in the Gini coefficient remains associated with the labour market, but the contribution of social assistance transfers was much smaller (-0.2 points, or 16 per cent of the decline), lagging behind social security benefits (-0.3 points, or 22 per cent).

These positive labour market effects contrast with previous years, as seen in the 2014–2019 and 2019–2021 periods, when labour earnings exerted upward pressure on the Gini coefficient. Inequality did not worsen further only because these contributions were attenuated by social benefits, particularly in the 2019–2021 period. In the 2012–2014 period, marking the end of the 2000s expansion cycle, the labour market also contributed to reducing the Gini coefficient, albeit at a slower pace than in recent years, when this trend was amplified by the post-pandemic recovery.

TABLE 1. Shapley-Shorrocks decomposition of changes in the Gini coefficient by income source—Brazil, 2012–2024

Period	Gini Coefficient (x100)		Change (Gini points)				
	Initial	Final	Total	Labour earnings	Social assistance transfers	Social security benefits	Other income
2012–2014	54.0	52.6	-1.4	-0.6	-0.1	-0.1	-0.6
2014–2019	52.6	54.3	1.7	1.0	0.0	0.3	0.4
2019–2021	54.3	54.4	0.0	1.0	-0.5	-0.4	-0.1
2021–2024	54.4	50.4	-3.9	-1.9	-1.7	-0.3	0.1
2023–2024	51.7	50.4	-1.2	-0.6	-0.2	-0.3	-0.1

Note: Decomposition calculated using the Shapley-Shorrocks method. Social assistance transfers include the BPC, PBF, PAB, and the 2020 and 2021 AE. See the Appendix for further information.

Source: Authors' elaboration based on PNADC microdata for 2012, 2014, 2019, 2021, 2023, and 2024.

Table 2 reports results for the extreme poverty rate (USD3.00 per day, 2021 PPP). Once again, the labour market and social assistance transfers were dominant. The pattern is identical to that of the Gini coefficient between 2021 and 2024: the labour market and social assistance contributed 48 per cent and 44 per cent, respectively, to the 6.5 p.p. reduction in extreme poverty. In the 2023–2024 period, labour income was even more critical, contributing to nearly three-quarters of the 1 p.p. decline, with social assistance accounting for almost all of the remainder. The influence of social security benefits and other income on extreme poverty was negligible in the post-pandemic period.

A rapid economic recovery has enabled recent reductions in extreme poverty and inequality in household surveys at a pace exceeding that of the 2003–2015 period (Souza 2024). The labour market was the primary engine of these advances, but the contribution of expanded

12. Targeting for most social assistance programmes in Brazil is managed through the *Cadastro Único* (Single Registry), a centralized administrative database that identifies and characterizes low-income families. It serves as the primary gateway for the *Bolsa Família* and over 30 other federal social programmes (Paiva, Sousa, and Nunes 2020).

social assistance transfers was nearly as important, reaching unprecedented levels. According to estimates by Souza (2024), the expansion of the PBF and BPC contributed to approximately 20 per cent of the reduction in the Gini coefficient and the poverty rate between 2003 and 2015—slightly less than half the percentages estimated for the 2021–2024 period.

TABLE 2. Shapley-Shorrocks decomposition of changes in the extreme poverty rate (USD3.00/day) by income source—Brazil, 2012–2024

Period	Poverty rate (%)		Change (p.p.)				
	Initial	Final	Total	Labour earnings	Social assistance transfers	Social security benefits	Other income
2012–2014	8.9	7.0	-1.8	-1.5	-0.2	0.0	-0.2
2014–2019	7.0	9.5	2.5	2.1	0.0	0.2	0.1
2019–2021	9.5	11.3	1.8	2.1	-1.0	0.5	0.1
2021–2024	11.3	4.8	-6.5	-3.1	-2.9	-0.2	-0.3
2023–2024	5.8	4.8	-1.0	-0.8	-0.3	0.0	-0.1

Note: Decomposition calculated using the Shapley-Shorrocks method. The extreme poverty line of USD3.00 per person per day, using 2021 PPP factors, corresponds to BRL267 per person per month in average 2024 prices. Social assistance transfers include the BPC, PBF, PAB, and the 2020 and 2021 AE. See the Appendix for further information.

Source: Authors' elaboration based on PNADC microdata for 2012, 2014, 2019, 2021, 2023, and 2024.

Finally, Table 3 decomposes variations in the poverty rate into growth and redistribution components, following Datt and Ravallion (1992). The growth effect isolates the contribution of changes in mean income (holding the distribution constant), while the redistribution effect captures changes associated with inequality (holding mean income constant).[13] The selected periods match those in Tables 1 and 2.

TABLE 3. Decomposition of the change in the poverty rate for the $3 and $8.30 per person per day poverty lines—Brazil, 2012–2024

Period	PPC line	*z*	fgt_t0	fgt_t1	delta	Growth	Redistribution
2012–2014	USD3/dia	267	8.9	7.0	-1.8	-0.7	-1.1
2014–2019	USD3/dia	267	7.0	9.5	2.5	0.0	2.5
2019–2021	USD3/dia	267	9.5	11.3	1.8	1.3	0.5
2021–2024	USD3/dia	267	11.3	4.8	-6.5	-2.4	-4.1
2023–2024	USD3/dia	267	5.8	4.8	-1.0	-0.4	-0.6
2012–2014	USD8.3/dia	738	36.8	33.2	-3.6	-2.1	-1.5
2014–2019	USD8.3/dia	738	33.2	34.6	1.4	-0.3	1.7
2019–2021	USD8.3/dia	738	34.6	38.9	4.3	4.2	0.0
2021–2024	USD8.3/dia	738	38.9	26.8	-12.1	-8.4	-3.7
2023–2024	USD8.3/dia	738	30.0	26.8	-3.2	-1.6	-1.6

Note: The decomposition was calculated using the method of Datt and Ravallion (1992), with the application of the Shapley value to eliminate the residual term (Shorrocks, 2013). The poverty lines of $3 and $8.30 per person per day, using the 2021 PPP conversion factor, are equivalent to R$ 267 and R$ 738 per person per month, respectively, at average 2024 prices. See the Appendix for further information.

Source: Author's elaboration based on the PNADC microdata for 2012, 2014, 2019, 2021, 2023, and 2024.

13. For further information, see section A6 of the Appendix.

For both poverty lines, the rapid reduction in poverty since the peak of the pandemic stemmed from a virtuous combination of both effects: mean income growth and reduced income inequality between 2021 and 2024.

For the lower poverty line, the redistribution effect was predominant, accounting for 60 per cent or more of the decline in extreme poverty over both the 2021–2024 and 2023–2024 periods, mirroring the 2012–2014 period. In the second half of the 2010s, the pattern was distinct: the 2.5 p.p. increase in extreme poverty between 2014 and 2019 stemmed entirely from a deteriorating income distribution. Both components contributed to the rise of nearly 2 p.p. between 2019 and 2021, but the decline in mean income was far more significant than the redistribution effect.

Results for the higher poverty line are qualitatively similar, though less sensitive to recent distributional shifts. Variations in mean income were much more decisive for both the poverty increase between 2019 and 2021 and the subsequent fall between 2021 and 2024. In other periods, including 2023–2024, relative contributions are closer to those estimated for extreme poverty, with a greater influence from the redistribution effect.

5 CONCLUDING REMARKS

In 2024, Brazil achieved the most favourable outcomes for mean income, inequality, and poverty in the historical series of household surveys. Since the Real Plan, real per capita income has grown by nearly 70 per cent, inequality has fallen by 18 per cent or more (depending on the metric), and the extreme poverty and poverty rates have retreated by 20 and 34 p.p., respectively.

Nevertheless, the trajectory over the last three decades has been turbulent, with the bulk of gains concentrated in the 2003–2015 period and, more recently, during the economic recovery from the pandemic's nadir. Indeed, between 2021 and 2024, indicators of income, inequality, and poverty improved at a faster pace than the average observed between the turn of the century and the recession of the 2010s. The reversal of pandemic-induced losses propelled this process, yet the recovery extended well beyond mere rebound.

Labour market tightening and the expansion of social assistance transfers were equally instrumental to these highly favourable outcomes in recent years. Regarding the former, there was a complete reversal of the trend observed in the late 2010s and during the pandemic, when the labour market exacerbated inequality and poverty. Regarding the latter, the increase in social assistance spending—promoted by the AE, consolidated by the PAB, and institutionalized on a broader, permanent scale by the new PBF—resulted in far stronger redistributive effects than the original PBF. Recent BPC growth also contributed, albeit to a lesser degree, to the reduction of inequality and poverty.

Given this, the pace of improvement in social indicators is likely to moderate in the coming years, as the recent cycle of expanding social assistance transfers has concluded. Moving forward, advances will likely depend even more heavily on the labour market.

All results presented here are derived from household surveys, which are the primary source for monitoring annual income distribution but possess well-known limitations. On the one hand, household surveys globally tend to underestimate the amounts transferred by social assistance benefits, a phenomenon also present in Brazil. On the other hand, these

surveys severely underestimate the incomes of the affluent. We performed no adjustments to mitigate these issues due to a lack of data and universally accepted econometric methods. Improving the measurement of income distribution remains a pressing challenge, not only for Brazil but globally.

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ANNEX 1—GLOSSARY OF BRAZIL'S CONTRIBUTORY AND NON-CONTRIBUTORY SOCIAL PROTECTION PROGRAMMES

I.SOCIAL ASSISTANCE (ASSISTÊNCIA SOCIAL)

Non-contributory policies aimed at the most vulnerable segments of the Brazilian population. These are civil rights guaranteed by the 1988 Federal Constitution to those in need, regardless of previous contributions to the social security system.

- **BPC (*Benefício de Prestação Continuada*):** The Continuous Cash Benefit is a constitutional right regulated by the Organic Law on Social Assistance (*LOAS*). It provides a monthly benefit of exactly one minimum wage to elderly persons (aged 65 or older) and people with disabilities who have a long-term physical, mental, intellectual, or sensory impairment that prevents them from participating fully and effectively in society on an equal basis with others. To qualify, the per capita household income must be less than one-quarter of the current minimum wage.
- **PBF (*Programa Bolsa Família*) and PAB (*Programa Auxílio Brasil*)** The *Bolsa Família* is a conditional cash transfer (CCT) programme designed to provide immediate poverty relief while breaking the intergenerational cycle of poverty through conditionality requirements in health (vaccination and prenatal care) and education (school attendance). In late 2021, it was replaced by the *Auxílio Brasil* (PAB), which redesigned the benefit tranches and increased the average transfer amount. The programme was reinstated as *Bolsa Família* in 2023 with a renewed focus on large families and updated targeting.
- **Emergency Aid (*Auxílio Emergencial*):** An unconditional, temporary cash transfer launched in April 2020 to mitigate the economic shock of the COVID-19 pandemic. It targeted informal workers, the self-employed, and beneficiaries of the *Bolsa Família*. Due to its massive scale and high benefit values (initially BRL600 per month), it played a decisive role in preventing a spike in poverty during the most acute phase of the health crisis.

II.SOCIAL SECURITY (*PREVIDÊNCIA SOCIAL*)

A contributory system designed to replace labour income for workers who have lost their productive capacity due to age, illness, disability, or death.

- **General and Special Regimes (*RGPS* and *RPPS*):** The Social Security system is divided into the General Regime (*RGPS*), which covers private-sector workers and is managed by the National Social Security Institute (INSS), and the Special Regimes (*RPPS*), which provide pensions for career public servants at the federal, state, and municipal levels. These benefits are fundamental to the income of the elderly and represent a significant portion of total household transfers in Brazil.
- **Rural Pension (*Previdência Rural*):** A hybrid system within the Social Security framework that ensures a minimum wage to rural workers, subsistence farmers, and small-scale fishers. While it is technically a contributory system, its rules are adapted to the seasonal and informal nature of rural work, often allowing for benefits based on years of documented rural activity rather than monthly cash contributions. It is considered one of the most effective tools for poverty reduction in Brazil's rural interior.

ANNEX 2—METHODOLOGICAL APPENDIX

A1. DATA SOURCES

All data are derived from the former National Household Sample Survey (PNAD) and the current Continuous National Household Sample Survey (PNADC), conducted by the IBGE. For the PNAD, we employed annual data from 1995 to 2012, excluding years in which the survey was not fielded. For the PNADC, we used data from the annual release of the 1st visit for 2012–2019 and 2023–2024, and the 5th visit for 2020–2022 (IBGE 2025a). All analyses of the PNADC historical series employ expansion factors (sampling weights) reweighted in mid-2025 (IBGE 2025b).

A2. VARIABLE CONSTRUCTION

Our primary variable of interest is per capita household income. To enhance comparability with the PNAD, we adopted habitual labour income and actual (*efetivo*) income from other sources in the PNADC.

To simplify the decompositions, income components were aggregated into four categories: i) labour; ii) social assistance (BPC, PBF, PAB, and Emergency Aid); iii) social security; and iv) other income. Income associated with "other social programmes" was classified as "other income" for the periods 2012–2019 and 2022–2024, and as "social assistance" in 2020 and 2021, given that declared values in these years correspond almost exclusively to Emergency Aid transfers.

Incomes were deflated to constant 2024 prices using the Extended National Consumer Price Index (IPCA)[14] aggregated nationally. In the PNAD, deflation was performed after centering the IPCA on 1 October of each year (Corseuil and Foguel 2002). In the PNADC, we used the arithmetic mean of the national IPCA for each quarter.

A3. SERIES SPLICING

CHART A1. Adjustment factors for splicing the time series presented in the text

Graph	Variable	Adjustment factor
1	Per capita household income	1.0069
2	Gini coefficient	1.0263
3	Palma ratio	1.0847
4	Poverty rate for the USD3.00/day line	1.1083
5	Poverty rate for the USD8.30/day line	1.0364

Source: Authors' elaboration based on 2012 PNAD and 2012 PNADC microdata.

Results from the former PNAD and the PNADC are proximate but not perfectly compatible. To facilitate presentation, we spliced the two series following the adjustment implemented

14. The Extended National Consumer Price Index (IPCA) is the official measure used by the Central Bank of Brazil for its inflation-targeting framework. It covers urban households with monthly incomes ranging from 1 to 40 minimum wages, making it the standard deflator for assessing real changes in national household purchasing power (Corseuil and Foguel 2002).

in Souza (2024). PNADC estimates were unaltered; however, for each statistic of interest i, the entire PNAD series was multiplied by the adjustment factor necessary to align the two distributions in 2012—i.e., $f(i) = i(2012, PNADC) / i(2012, PNAD)$. Chart A1 describes the adjustment factors for the series presented in Graphs 1 through 5.

CHART A2. Poverty lines estimated by the World Bank

Type	Old values		Revised values		Change
	(A) Daily value (2017 PPP)	**(B)** Monthly value (2024 BRL)	**(C)** Daily value (2021 PPP)	**(D)** Monthly value (2024 BRL)	D / B (%)
Low-income countries	2.15	218	3.00	267	22
Lower-middle-income countries	3.65	371	4.20	373	1
Upper-middle-income countries	6.85	695	8.30	738	6

Note: Daily values in international dollars were converted to Brazilian reais using the PPP factors estimated for Brazil and the cumulative IPCA between the PPP factor reference date and 2024.

Source: Authors' elaboration based on Foster et al. (2025).

A4. POVERTY LINES

We adopted international lines estimated by the World Bank as a baseline. The most recent revision of these lines occurred in June 2025, incorporating purchasing power parity (PPP) factors for 2021 and updating the national poverty lines serving as the basis for calculations (Foster et al. 2025).

Chart A2 compares the new values with the previous version based on 2017 PPP factors. The revision primarily affected the lowest international line, which increased by 22 per cent compared to the prior version. The other two lines were minimally affected in real terms. In the text, for brevity, we present results only for the USD3.00 per day and USD8.30 per day lines.

A5. INDICATORS

A5.1. Inequality

The primary inequality measure cited is the Gini coefficient, which ranges from zero (perfect equality) to one (maximum inequality), corresponding to twice the area between the Lorenz curve and the line of perfect equality. To facilitate exposition, we present the Gini coefficient multiplied by 100. Formally:

$$G = 1 - 2\int_0^1 L(p)dp$$

Where $L(p)$ is the Lorenz curve, representing the cumulative fraction of income appropriated by the p poorest per cent of the population, with $p \in [0,1]$.

As the Gini coefficient is relatively insensitive to changes at the distribution extremes, we also document the evolution of the Palma ratio, defined as the ratio between the income share of the richest 10 per cent (S_{90-100}) and that of the poorest 40 per cent (S_{0-40}). Formally:

$$Palma = \frac{S_{90-100}}{S_{0-40}}$$

The Palma ratio is named after Chilean economist José Gabriel Palma, who posited that the majority of cross-country differences stem from the shares appropriated by the richest 10 per cent and the poorest 40 per cent (Palma 2011).

A5.2. Poverty

The sole poverty measure analysed in the text is the headcount ratio—the fraction of the population with per capita household income below the poverty line—corresponding to the Foster, Greer, and Thorbecke (1984) measure with parameter $\alpha = 0$. Formally:

$$FGT(\alpha) = \frac{1}{N}\sum_{i=1}^{q}\left(\frac{z - y_i}{z}\right)^{\alpha}, \text{para } \alpha \geq 0$$

Where N is the population size, q is the number of individuals below the poverty line, z is the poverty line value, y_i is the per capita household income of individual i, and $\alpha \geq 0$ is the poverty aversion parameter. As with the Gini coefficient, we present poverty indicators multiplied by 100.

A6. DECOMPOSITIONS

A6.1. Decompositions by Income Source

Changes in inequality and poverty were decomposed by income source using the Shapley-Shorrocks method (Azevedo et al. 2012; Azevedo et al. 2013; Sastre and Trannoy 2002; Shorrocks 2013). Estimates were generated via microsimulations, aggregating microdata into ten-thousandths. The marginal contribution of each income source is equivalent to the expected value of marginal contributions considering all possible sequences. Formally, consider the $\mathbf{X}^{(t)} = \left[x_{ij}^{(t)}\right]$, describing the income distribution in period t for a set of $N = \{1, \ldots, i, \ldots n\}$ individuals with income composed of a set $K = \{1, \ldots, j, \ldots k\}$ of sources. The total income vector in period t is:

$$\mathbf{y}(S) = \mathbf{y}^{(0)} + \sum\nolimits_{j \in S} \Delta \mathbf{x}_j$$

For two periods, $t \in \{0,1\}$, the vector of total income change is:

$$\Delta \mathbf{y} = \mathbf{y}^{(1)} - \mathbf{y}^{(0)} = \sum\nolimits_{j=1}^{K} \Delta \mathbf{x}_j$$

Let S be a subset of income sources, with $S \in 2^K$. The counterfactual $y(S)$ is the income vector where only sources included in S vary between $t = 0$ and $t = 1$:

$$\mathbf{y}(S) = \mathbf{y}^{(0)} + \sum_{j \in S} \Delta \mathbf{x}_j$$

By definition, $\mathbf{y}(\emptyset) = \mathbf{y}^{(0)}$ and $\mathbf{y}(K) = \mathbf{y}^{(1)}$. Let $I(.)$ be any inequality, poverty, or welfare indicator; the variation across the two periods is:

$$\Delta I = I\left(\mathbf{y}^{(1)}\right) - I\left(\mathbf{y}^{(0)}\right)$$

The decomposition expresses ΔI as the sum of expected marginal contributions from changes in each source — i.e., $\Delta I = \sum_{j=1}^{K} \Delta I_j$ — where the contribution of source j is given by:

$$\Delta I_j = \sum_{S \subseteq K, j \in S} \omega(S; j) \Delta_j(S) = \sum_{S \subseteq K, j \in S} \frac{(|S| - 1)!\,(|K| - |S|)!}{|K|!} \left[I\left(\mathbf{y}(S)\right) - I\left(\mathbf{y}(S - \{j\})\right)\right]$$

The first term, $\omega(S; j)$, can be interpreted as the "Shapley weight", reflecting the fact that not all subsets S are equally probable. The second term, $\Delta_j(S)$, is the marginal contribution of source j to subset S.

A6.2. Datt-Ravallion Decomposition

The decomposition of poverty rate changes presented in Table 3 was originally proposed by Datt and Ravallion (1992). The original formulation separated poverty changes into three components: the growth effect (changes due to mean income), the redistribution effect (changes due to inequality), and a residual resulting from the interaction of the two. In the text, we employ the Shapley value, as suggested by Shorrocks (2013), to eliminate this residual term.

Let $P(\mu, L; z)$ be the function calculating a poverty measure for a distribution with mean μ and Lorenz curve L, given poverty line z. Considering two periods, $t \in \{0,1\}$, the total poverty variation is:

$$\Delta P = P\left(\mu^{(1)}, L^{(1)}; z\right) - P\left(\mu^{(0)}, L^{(0)}, z\right)$$

The Datt-Ravallion decomposition applying the Shapley value separates the variation ΔP into two components: the growth effect ΔP_g and the redistribution effect ΔP_r. Formally:

$$\Delta P = \Delta P_g + \Delta P_r$$

Omitting parameter z for brevity, the components are defined as:

$$\Delta P_g = \frac{1}{2}\left\{\left(P\left(\mu^{(1)}, L^{(1)}\right) - P\left(\mu^{(0)}, L^{(1)}\right)\right) + \left(P\left(\mu^{(1)}, L^{(0)}\right) - P\left(\mu^{(0)}, L^{(0)}\right)\right)\right\}$$

$$\Delta P_r = \frac{1}{2}\left\{\left(P\left(\mu^{(1)}, L^{(1)}\right) - P\left(\mu^{(1)}, L^{(0)}\right)\right) + \left(P\left(\mu^{(0)}, L^{(1)}\right) - P\left(\mu^{(0)}, L^{(0)}\right)\right)\right\}$$

The terms $P\left(\mu^{(0)}, L^{(0)}\right)$ e $P\left(\mu^{(1)}, L^{(1)}\right)$ equate to observed poverty in the initial and final periods, respectively. The remaining terms represent counterfactual distributions obtained by combining the mean income of one period with the Lorenz curve of the other.

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