

The Macrostructure of the Brazilian Equity Market

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Abstract

We characterize the macrostructure of the Brazilian equity market from a census of 21.1 million records of fund holdings of leading Brazilian managers from 2016 through 2021. Participation expands on two margins, with funds rising from 1,586 to 2,383 and assets under management from R\$ 165 billion to R\$ 785 billion. Concentration resides at the manager level, whose Herfindahl–Hirschman index across the group of top managers exceeds the index across funds by a factor between 8 and 12. Portfolios diversify through the count of positions, and ownership at the stock level deconcentrates. We state seven stylized facts and their implications for the macrostructure research agenda on this market.

Keywords: Market macrostructure; institutional investors; mutual funds; institutional ownership; asset demand; concentration; Brazil

JEL Codes: G11; G12; G14; G23; E44

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1 Introduction

A financial system allocates savings to securities through institutions, and the terms of that allocation depend on how the institutions are arranged. When the demand for a security is inelastic, a reallocation by one investor changes its price, and the size of the change grows with the size of the investor relative to the market (Gabaix & Koijen, 2021; Koijen & Yogo, 2019; Petajisto, 2009). When assets under management accumulate in a set of institutions whose number does not grow with the market, the idiosyncratic decisions of those institutions survive aggregation and appear in market-level fluctuations (Ben-David et al., 2021; Gabaix, 2011; Gabaix & Koijen, 2024). Under either mechanism, the arrangement of institutions, meaning the distribution of assets under management across them, the composition of their portfolios, and the division of each security among them, enters the determination of prices. Following Haddad and Muir (2025), we call this arrangement the macrostructure of the Brazilian equity market.

For Brazil, a characterization of its equity market macrostructure was missing. The main challenge behind this task is the need to observe the holdings positions of the entire market of interest, in order to measure institutional participation and concentration. While such records are missing for other countries, Brazil maintains a holdings census: funds regulated by the securities authority (CVM – *Comissão de Valores Mobiliários*) report their portfolios to the regulator each month, asset by asset, and the reports are made public by the regulator after a delay. Leveraging this data, this paper provides the first systematic measurement of the macrostructure of the Brazilian equity segment regarding the leading managers of the fund industry from 2016 through 2021. This is valuable not only from a standalone perspective of characterizing how the market works and has evolved over the period, but also by providing a basis for subsequent work. The macrostructure of the market is the key input of a broader research agenda that includes the estimation of asset demand from portfolios, identification built on shocks to institutions of consequential size, and the mapping from ownership overlap to comovement and fragility.

Three features of the Brazilian setting define the units of measurement. First, each fund is a legal entity identified by a tax registry number and is operated by an asset management company, the manager, which in general runs many funds. The fund is the unit that reports, while the manager is the unit that decides. Second, funds are classified by ANBIMA, the association of capital market entities, whose categories separate equity mandates from fixed income and mixed mandates. The fund industry as a whole intermediates from R\$ 3.21 trillion in 2016 to R\$ 6.60 trillion of savings

in 2021 (ANBIMA, 2018, 2023). Third, the sample window covers a decline of the monetary policy interest rate from 14.25% at the start of 2016 to 2% in 2020, a period in which savings reallocated toward equity mandates. The window therefore records the expansion of institutional equity participation rather than a stationary state, and our analysis can understand what expanded from what did not.

We construct a monthly panel from two sources. The first is a consolidated positions dataset that records the holdings of each fund, disaggregated by asset, on a look-through basis: quotas of other funds are replaced by the securities they contain. Hence, these consolidated holdings allow us to observe the true exposure of each fund to the underlying stocks, both directly through direct equity positions and indirectly through their quotas of other funds. This is built from the CVM public holdings records, which cover the entirety of the regulated fund industry. Because look-through consolidation is computationally intensive, we restrict our analysis to the largest asset managers in the Brazilian market, as well as specialist and niche managers focused on equity investments, covering the full universe of funds managed by these firms. From now on, we refer to these consolidated positions simply as holdings. The second source is a time series record of net asset value and institutional metadata at the fund level. We merge the two by fund tax registry number (CNPJ) at month-end dates, obtaining 21.1 million position records over 72 months. We retain holdings of equities listed on B3, the Brazilian stock exchange, and exclude securities lending and borrowing lines to avoid double counting of exposure. To our knowledge, the resulting panel provides the first system-level mapping of institutional ownership structure in the Brazilian equity market.

Our analysis proceeds in three layers. The participation layer records the number of funds and managers with positive assets under management (AUM) and the concentration of this value across funds and across managers. The portfolio layer records, for each fund-month, the number of stocks with positive holdings, the share of their AUM allocated to equity, and the concentration of the weight of their equity positions across different stocks. The ownership layer records, for each stock-month, the number of funds with positive holdings and the concentration of the value of their holdings across different funds. Concentration is measured in every layer by the Herfindahl–Hirschman index and by top- N shares, so statistics are comparable across layers and over time.

The resulting overview of the Brazilian equity market macrostructure yields four findings. First, fund participation expands over the period. The number of funds in the sample rises from 1,586 in January 2016 to 2,383 in December 2021, the number of stocks held by at least one fund rises from 237 to 320, and the value of AUM of the

segment grows from R\$ 165 billion to R\$ 785 billion.¹ Entry exceeds exit in most months from 2017 onward, and 12-month fund survival exceeds 86% for every cohort with a year of follow-up. Second, concentration resides at the level of the manager. While the number of managers included in our sample is stable over time, the number of funds they own grows by half. The five managers with the most AUM hold 42.6% of industry AUM on average, against 10.7% for the five funds with the most AUM, and the manager-level Herfindahl–Hirschman index (HHI), between 0.053 and 0.061, exceeds the fund-level HHI, between 0.004 and 0.007, by an order of magnitude. Third, fund portfolios diversify through the count of positions rather than through the weight of the largest positions. The median number of stocks held rises from 61 to 90, the median of the HHI of asset shares across funds falls from 0.0570 to 0.0432, and the median share of the five largest positions stays near 20%, while the median share of AUM in equity rises from 43.7% to 67.3%. Fourth, ownership deconcentrates at the level of the stock. The median number of funds holding a stock rises from 255 to 737, the median top-five holder share falls from 59.0% to 38.2%, and the median of the fund ownership share across stocks falls from 0.102 to 0.046, even as the AUM of the sample more than quadruples.

These findings carry three implications for asset pricing and macro-finance work on Brazil. First, identification from institution-level shocks must operate at the manager. With a fund-level HHI below 0.007, shocks to funds wash out of aggregates. By contrast, asset holdings are substantially more concentrated at the manager level, with an HHI near 0.06 and a top-five share above 40%, preventing manager shocks from averaging out and justifying the construction of granular instruments (Gabaix & Koijen, 2024; Jansen, Li, & Schmid, 2024) at the manager level rather than at the fund level. Second, the joint behavior of portfolio breadth, which rises, and of the weight of the largest positions, which does not fall, implies that an asset demand system fitted to this market (Koijen & Yogo, 2019) faces a cross section whose composition shifts through the number of positions rather than through their relative size. Third, the deconcentration of stock ownership during a period in which AUM quadruples separates the growth of the market from winner-take-all dynamics at the stock level, and it implies that ownership-based measures of comovement and fragility (Antón & Polk, 2014; Greenwood & Thesmar, 2011) trend downward over this window unless normalized for holder breadth.

¹The sample comprises funds from selected leading managers. Its annual average AUM corresponds to approximately 42.0% and 64.7% of the combined annual average AUM of ANBIMA's equity and *Multimercados Livre* categories in 2016 and 2021, respectively (ANBIMA, 2018, 2023). The asset managers were selected based on the Fundação Getúlio Vargas (FGV) Fund Guide, which identifies large managers according to the assets under management of their funds, as well as specialist and niche managers with a particular focus on equity investments (see <https://www.portalfundados.com/guia-fundados>).

Related Literature The paper relates to three strands of the literature. The first ties asset prices to the institutions that hold assets. It includes models in which the wealth and constraints of intermediaries determine risk premia (He & Krishnamurthy, 2013), evidence that the condition of intermediaries forecasts returns across asset classes (Haddad & Muir, 2021), frameworks in which heterogeneity among intermediaries generates financial cycles (Coimbra & Rey, 2024), and measurements of the investor size distribution in equity markets (Ben-David et al., 2021; Rey et al., 2024). Haddad and Muir (2025) organize this agenda under the heading of market macrostructure and place the institutional composition of a market among the primitives of asset pricing. The evidence in this agenda comes from the United States and from other few markets where holdings records exist. This paper provides a systematic measurement of the financial macrostructure of a so far unexplored setting, Brazil, and shows that concentration within it appears at the manager and not at the fund, a conclusion available only from a record that identifies both units.

The second literature group infers demand from holdings. Kojien and Yogo (2019) estimate asset demand systems from portfolios and characteristics. Kojien, Richmond, and Yogo (2024) trace valuations and expected returns to investor groups. Kojien and Yogo (2025) summarize the theory and econometrics of the approach. Gabaix and Kojien (2021) estimate the response of the market to flows in and out of equities. Haddad, Huebner, and Loualiche (2025) infer the degree of competition among investors from their portfolios. Gabaix et al. (2025) extract, from the matrix of holdings, vector representations of assets and of investors (see also Kelly & Xiu, 2023). Estimation in this agenda presupposes a holdings record together with a description of its coverage and structure. This paper provides both for Brazil, states the moments that a fitted system for this market must match, and documents that the cross section of ownership changed over the sample through entry and through the widening of holder bases. A companion paper applies representation methods to the same records (Ruhe & Ferraresi Junior, 2026).

The third strand of literature connects ownership structure to returns at the level of the stock. Stocks that share the same holders comove (Antón & Polk, 2014). A stock whose ownership concentrates in holders subject to correlated flows loses value when those holders sell (Coval & Stafford, 2007; Franzoni & Schmalz, 2017; Greenwood & Thesmar, 2011; Lou, 2012). Institutions cluster in their trades (Sias, 2004; Wermers, 1999), overlapping ownership of competitors affects product markets (Azar, Schmalz, & Tecu, 2018), and household portfolios admit a factor representation (Balasubramaniam et al., 2023). Evidence for markets outside the United States depends on disclosure regimes that permit it (Pedraza & Pulga, 2019). This paper measures the concentration

of each portfolio across stocks and the concentration of each stock across portfolios, and finds that the first is stable while the second declines, a combination that constrains the interpretation of ownership-based measures over this period.

Road Map Section 2 describes the data and the measurement framework. Section 3 reports the results by layer, covering participation and AUM concentration, the portfolio structure of institutions, and stock-side ownership structure. Section 4 condenses the results into seven stylized facts and states their implications for subsequent work.

2 Data and Measurement

This section describes the two data sources that form our the panel, the restriction of the panel to holdings of equities, and the framework that defines every statistic reported in Section 3.

2.1 Sources

We work with two datasets derived from the reports that funds file with the CVM (*Comissão de Valores Mobiliários*), the Brazilian securities authority, under the regime of periodic disclosure of portfolios.

The first dataset is a record of consolidated positions containing, for each fund and each month, the tax identifier of the fund (CNPJ), the category assigned by ANBIMA (e.g., equity, fixed income, mixed), a description of each asset held, the value of the position in thousands of BRL, and the weight of the position in the portfolio. Positions are recorded on a look-through basis, so that a holding of quotas of a second fund is replaced by the securities that the second fund holds.² Although the underlying CVM filings cover the entire regulated fund industry, constructing consolidated positions is computationally intensive. We therefore focus on the largest asset managers in the Brazilian market, as well as specialist and niche managers focused on equity investments, capturing a substantial and economically relevant segment of the market while covering the full universe of funds managed by these firms.

The second dataset is a time series file that records, for each fund and each business day, the value of its quota, the number of quota holders, the net asset value in thousands

²The file is constructed by Quantum Finance from the filings of “Composition and Diversification of Assets” (*Composição e Diversificação dos Ativos*, CDA) that funds submit to the CVM and that the CVM publishes through its portal of open data. Quantum applies an algorithm of consolidation that expands the quotas held by a fund into the assets of the funds whose quotas are held. Access was obtained through a subscription maintained for research.

of BRL, and the asset management company that operates the fund, hereafter the manager. We retain the observation of each fund on the last business day of each month.

We merge the two datasets by CNPJ at month-end dates and assign to each record of a position the net asset value of the fund that holds it, hereafter the assets under management (AUM) of the fund. The merged panel spans January 2016 through December 2021, 72 months, and contains 21,135,383 records of positions. The identifier of the fund, the date, and the type of the asset are recorded in every observation. The extract covers the funds whose category places them under mandates in equities. Within that segment the panel is a census, since disclosure is required of every fund under the regime, and the number of funds it contains, between 1,430 and 2,383 in any month of the window, is the number of funds under such mandates that filed in that month.

2.2 The Equity Universe

Every position in the file of consolidated positions carries the type *Equities*, and the field that describes the asset separates positions of distinct economic content within that type. We read that field and assign each record to one of five classes. The first is a holding of an equity listed on B3 (the Brazilian stock exchange), identified by the ticker in its description. The second is a holding of shares reported under the name of the company, without a ticker, when that company can be identified. The third is a position lent under an agreement of securities lending. The fourth is an obligation arising from securities borrowed under such an agreement. The fifth collects shares of companies without listing, rights and receipts of subscription, warrants, depositary receipts, and entries that aggregate more than one company.

We aggregate positions to the stock through the four-letter code that B3 assigns to the company, so that the classes of shares of one company enter as one position. Positions in units are retained, while positions in quotas of ETFs and in quotas of funds of real estate (FIIs) are excluded. We exclude positions lent and obligations from positions borrowed from the sample. A position lent remains on the balance sheet of the fund that lends it and is recorded on a line of its own, so that the sum of the line of the holding and the line of the position lent records the exposure twice. Lines of lending appear in 68.6% of fund-months and lines of borrowing in 56.7%. Appendix [A.2](#) reports the encoding of each class, the prevalence of lending and of borrowing over the sample, and an audit of the overlap.

The resulting sample is the set of holdings of equities listed on B3, together with the holdings reported under the name of the company when that company can be identified.

It contains 124,196 fund-months and 18,067 stock-months over the 72 months of the window, with 1,731 funds and 251 stocks in the average month.

2.3 Measurement Framework

The statistics of Section 3 are computed in three layers: the participation of funds and of managers, the structure of portfolios, and the structure of ownership at the stock level.

Concentration. Every layer uses the same two measures of concentration, so that a value computed from the AUM of funds can be compared to a value computed from the AUM of managers, from the holdings of a fund, or from the holders of a stock. Let $\mathcal{S}$ be a finite set of units and let $x = (x_k)_{k \in \mathcal{S}}$ be a vector of nonnegative sizes with $\sum_k x_k > 0$. Write $p_k(x) = x_k / \sum_{l \in \mathcal{S}} x_l$ for the share of unit k , and write $p_{(1)}(x) \geq \dots \geq p_{(|\mathcal{S}|)}(x)$ for those shares in decreasing order. The Herfindahl–Hirschman index and the share of the n largest units are

$$H(x) = \sum_{k \in \mathcal{S}} p_k(x)^2, \quad C_n(x) = \sum_{k=1}^n p_{(k)}(x). \quad (1)$$

Both depend only on the shares and are therefore invariant to the scale of x . Let K denote the number of units of positive size. Then $H(x) \in [\frac{1}{K}, 1]$: it equals $1/K$ when those K units are of equal size and equals 1 when a single unit holds the total. The reciprocal $1/H(x)$ is the number of equal-sized units that would produce the same index, hereafter the effective number of units. A movement in H can come from a more even distribution, from a change in K , or from both. We report H and $1/H$ together so that the effective number can be read against K . The top- n share $C_n(x)$ records how much of the total sits in the largest units and does not depend on the rest of the distribution.

Participation. The first layer, participation of funds and managers, is computed from the month-end AUM of each fund, denoted A_{it} , and from the AUM of each manager, denoted A_t^g and obtained by summing A_{it} across that manager's funds. Let $\mathcal{F}_t$ and $\mathcal{G}_t$ denote the sets of funds and managers observed in month t , and let $\mathcal{J}_t$ denote the stocks held by at least one of those funds. The fund is the unit that reports and the manager is the unit that decides. We report the number of funds and the number of managers in each month, quantiles of the distribution of A_{it} , and the pair $\{H, C_n\}$ evaluated at the AUM of funds for $n \in \{5, 10, 20\}$ and at the AUM of managers for $n \in \{5, 10\}$.

Portfolios. The second layer, structure of portfolios, is computed fund by fund from the equity holdings. Let $v_{ijt} \geq 0$ denote the market value of the holding of fund i in stock j at month t , and write V_t for the array of those month-end holdings. The value of the equity holdings of fund i , the share of AUM allocated to them, and the weight of stock j within them are

$$V_{it} = \sum_j v_{ijt}, \quad s_{it} = \frac{V_{it}}{A_{it}}, \quad w_{ijt} = \frac{v_{ijt}}{V_{it}} \quad \text{for } V_{it} > 0, \quad (2)$$

so that $\sum_j w_{ijt} = 1$. For each fund-month, we report (i) the number of stocks held – the breadth of the portfolio – B_{it} , (ii) the share s_{it} , and (iii) the measures of concentration of the equity holdings, H_{it}^P and $C_{5,it}^P$, obtained by evaluating H and C_5 at the weights w_{ijt} . Those weights are shares of V_{it} , not of A_{it} : they describe how the equity book is divided among stocks, and they do not mix that division with how much of AUM sits in equities. A fund that raises s_{it} by scaling its stock positions in proportion, leaving the mix unchanged, therefore leaves H_{it}^P unchanged. The tables report H_{it}^P as the HHI of those equity shares.

Ownership. The third layer is computed stock by stock from the same holdings. For each stock-month we report (i) the number of funds that hold the stock (the base of holders), (ii) the value of the stock held by funds in the sample, of which fund i holds the share θ_{ijt} , and (iii) the concentration of those holdings, H_{jt}^O and $C_{5,jt}^O$, obtained by evaluating H and C_5 at the funds that hold the stock. The indices H_{it}^P and H_{jt}^O are the measure of (1) evaluated at the equity shares w_{ijt} and at the ownership shares θ_{ijt} , and nothing requires that a more diversified set of portfolios produce more dispersed ownership of each stock, or the reverse. Section 3.3 reports the two paths and the rates at which they move.

Heterogeneity by size. Within each month, funds are ranked by A_{it} and assigned to the quartiles $Q_1, \dots, Q_4$ of that ranking, with Q_1 the quartile of smallest AUM. Statistics of the layer of portfolios are then computed within cells defined by quartile and month. The assignment is made within the month, so that the growth of AUM over the window does not move funds across quartiles by itself.

Entry, exit, and survival. Flows are computed on the universe of funds that report a portfolio, before the restriction to holdings of equities. A fund is counted as an entrant in the first month in which it is observed and as an exit in the first month in which it is no longer observed. The net change in month t , denoted Δ_t , is the number of entrants

minus the number of exits. For the cohort of funds whose first month falls in a given calendar year, survival at a horizon of twelve or twenty-four months is the share of that cohort still observed at that horizon, reported for cohorts to which the window supplies that many months of follow-up. Our panel starts in January 2016 and ends in December 2021, which prevents us from observing the entry and exit times for funds present at either end of the window. Section 3.1 therefore does not treat the 2016 flow counts as a year of mass entry, and it does not treat missing survival rates for the 2020 and 2021 cohorts as survival of zero.

Aggregation of statistics. Statistics of the first layer are computed month by month from the cross section of funds and from the cross section of managers, and tables report the average over the months of a calendar year. Statistics of the second and of the third layers are computed observation by observation, and tables report quantiles of the pooled cross section of fund-months, or of stock-months, within a calendar year. Figures report the same statistics month by month. Values are in thousands of BRL and are not deflated, so the growth of AUM over the window combines the flow of savings into funds with the return on the assets held.

3 Results

This section reports the results for the three layers described in Section 2.3. Section 3.1 reports the participation of institutions and the distribution of AUM across funds and across managers. Section 3.2 reports the structure of portfolios. Section 3.3 reports the structure of ownership at the stock and compares it with the structure of portfolios.

3.1 Participation and the Distribution of Assets

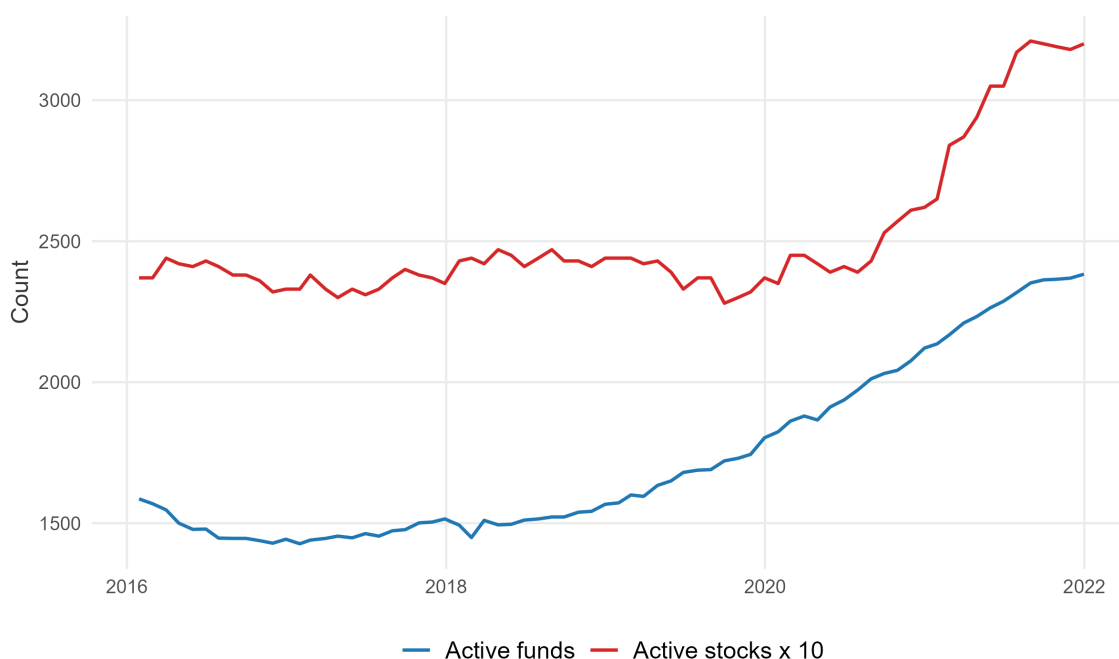
Table 1 reports the sample by year. The count of funds averages 1,484 in 2016 and 2,287 in 2021. The count of stocks with positive holdings averages 238 and 305 over the same years. The AUM of the sample, $\sum_i A_{it}$, rises from R\$ 165 billion to R\$ 785 billion, a factor of 4.8.

Table 1: Sample overview by year

Year	Months	Avg. active funds	Avg. active stocks	Avg. total AUM
2016	12	1,484	238	164,994,917
2017	12	1,467	235	215,336,036
2018	12	1,513	244	296,508,409
2019	12	1,676	237	441,529,624
2020	12	1,961	247	619,342,823
2021	12	2,287	305	784,679,087
Full sample	72	1,731	251	420,398,483

Figure 1 reports the two counts month by month, and the timing of the two expansions differs. The count of funds falls from 1,586 in January 2016 to about 1,430 in the middle of 2017 and rises steadily thereafter, reaching 2,383 in December 2021. The count of stocks held by at least one fund remains between 228 and 248 through most of the sample window, until the first half of 2020. It then rises steeply reaching 320 by the end of the window. Entry of funds therefore precedes the widening of the set of stocks held by about two years, and over the first two thirds of the window additional funds were allocating their holdings to a set of stocks whose size did not change.

Figure 1: Participation of institutions and coverage of stocks



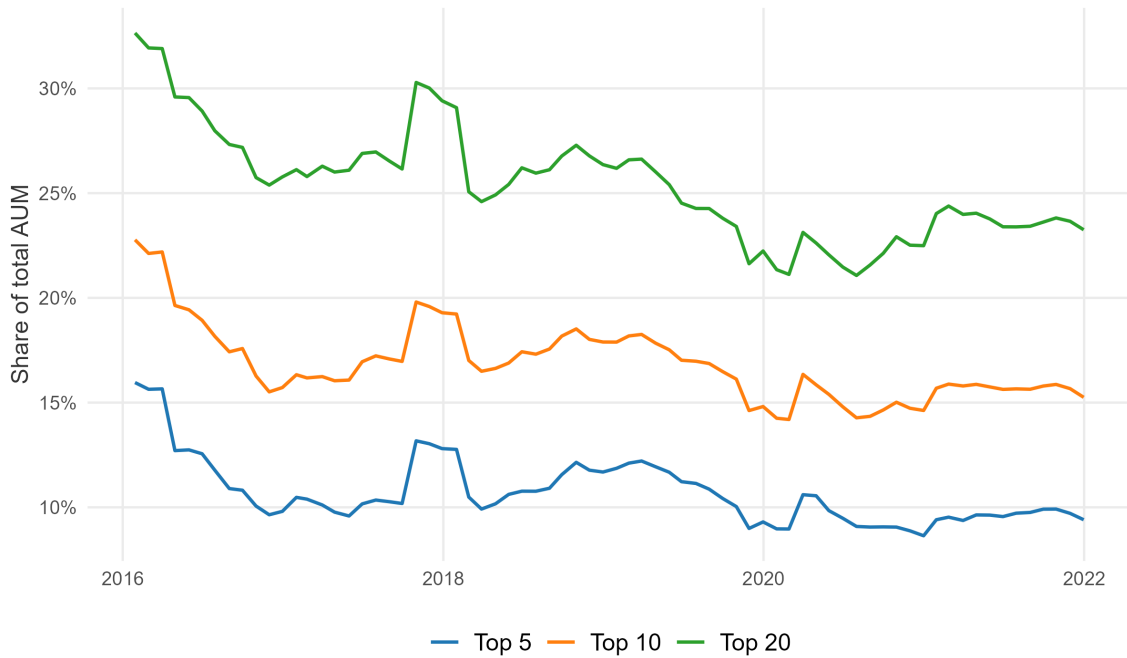
Notes: Monthly count of active funds with positive AUM and monthly count of stocks with positive holdings, January 2016 through December 2021. The series of stocks is multiplied by 10 so that both series share one axis.

Table 2 and Figure 2 report the distribution of AUM across funds. The median rises from R\$ 30 million in 2016 to R\$ 78 million in 2021 and the ninetieth percentile rises from R\$ 218 million to R\$ 761 million, a factor of 3.5. Concentration falls over the same window. The Herfindahl index H evaluated at the AUM of funds falls from 0.0070 to 0.0045. The reciprocal $1/H$ is the number of equal-sized funds that would produce the same index: it rises from 143 to 222, while the actual count of funds rises from 1,484 to 2,287. The industry therefore remains as concentrated as a market of a few hundred equal funds, even as the number of funds grows past two thousand. The share of the five funds with the largest AUM falls from 12.4% to 9.6% and the share of the twenty largest falls from 28.7% to 23.7%. The distribution of AUM across funds therefore widens at the top and disperses at the same time, since the count of funds grows faster than the AUM of those at the top.

Table 2: Institutional participation and AUM concentration by year

Year	Active funds	Median AUM	P90 AUM	AUM HHI	Top 5 AUM share (%)	Top 20 AUM share (%)
2016	1,484	30,023	218,138	0.0070	12.4	28.7
2017	1,467	40,435	302,340	0.0062	10.9	27.2
2018	1,513	51,202	402,499	0.0060	11.1	26.2
2019	1,676	69,322	581,571	0.0054	11.0	24.6
2020	1,961	77,958	738,357	0.0044	9.3	22.0
2021	2,287	78,005	761,283	0.0045	9.6	23.7

Figure 2: Share of total AUM held by the largest funds over time



Notes: Share of the AUM of the sample held by the n funds with the largest AUM in each month, for $n \in \{5, 10, 20\}$.

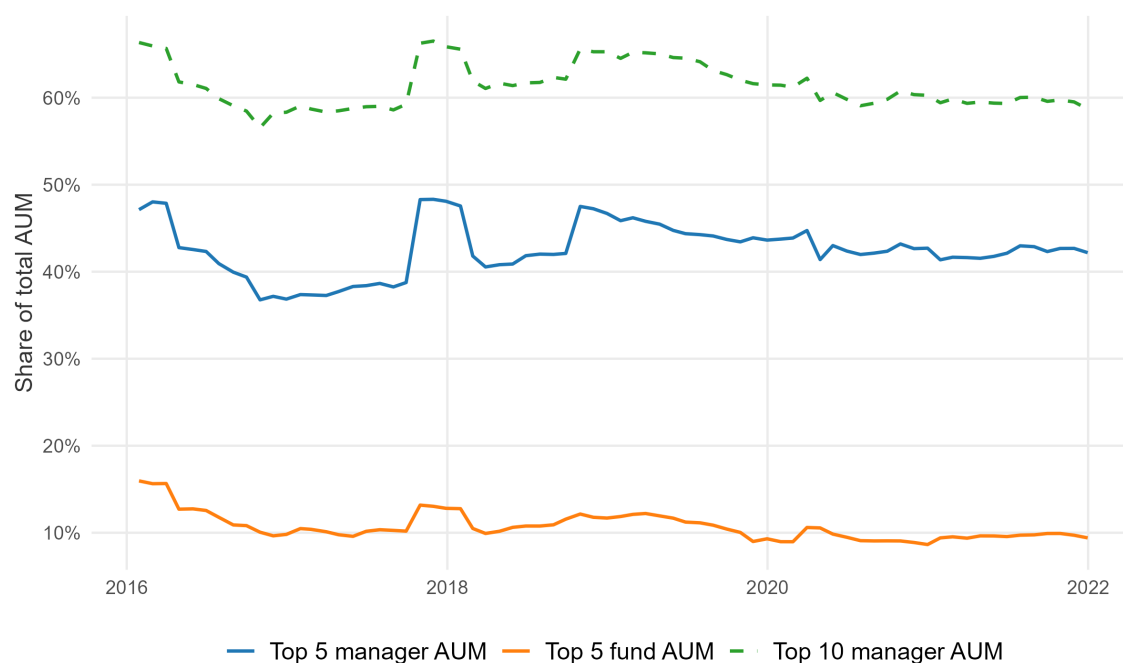
Aggregation to the manager. Table 3 and Figure 3 report the same statistics evaluated at the aggregated AUM across funds under the same manager. The number of managers in our sample remains between 45 and 47 in every year of the window, while the count of funds they manage rises by 54%. This pattern suggests an expansion of the Brazilian fund industry occurring primarily through the creation of additional funds within an essentially unchanged set of asset managers. The concentration statistics reveal a

second important feature of the industry: assets are considerably more concentrated at the manager level than at the individual-fund level. The manager-level Herfindahl index ranges from 0.0527 to 0.0605, compared with 0.0044 to 0.0070 at the fund level. In 2021, the effective number of managers is 18.8 and the effective number of funds is 222. The share of the five managers with the largest AUM lies between 40.6% and 44.6% and the share of the ten largest between 59.5% and 63.7%, against a share of 9.3% to 12.4% for the five funds with the largest AUM. Thus, the proliferation of funds does not translate into a comparable dispersion of assets across independent management firms.

Table 3: Manager participation and AUM concentration by year

Year	Active managers	Manager AUM HHI	Top 5 manager AUM share (%)	Top 10 manager AUM share (%)	Fund AUM HHI	Top 5 fund AUM share (%)
2016	46	0.0562	41.8	61.1	0.0070	12.4
2017	45	0.0577	40.6	60.6	0.0062	10.9
2018	45	0.0605	43.4	63.0	0.0060	11.1
2019	46	0.0569	44.6	63.7	0.0054	11.0
2020	46	0.0527	42.8	60.4	0.0044	9.3
2021	47	0.0533	42.1	59.5	0.0045	9.6

Figure 3: Share of total AUM held by the largest managers over time



Notes: Share of the AUM of the sample held by the managers with the largest AUM and by the funds with the largest AUM in each month.

Two facts deserve attention. First, H at the manager exceeds H at the fund by a factor between 8 and 12 in every year, a difference in magnitude between the two that is stable over the window. Second, the share of the five largest managers is 41.8% in 2016 and 42.1% in 2021, while the share of the five largest funds falls by 2.8 percentage points. Concentration at the manager is therefore high and doesn't trend downward. The fall in concentration at the fund is the splitting of each manager's AUM across more funds, not a more even division of the industry among decision makers.

Entry, exit, and survival. Table 4 and Figure 4 report monthly entry and exit, averaged within each calendar year in the table, and survival by the year of first observation. Averaged over the months in which both series are defined, the sample records 31.6 entrants and 20.4 exits per month. In 2016, those averages and the total of monthly entrants are computed from February through December, because entry and exit are not defined in January. From 2017 onward, the net change Δ_t is positive in every year, with monthly averages between 4.3 and 26.5 funds, the largest in 2019 through 2021.

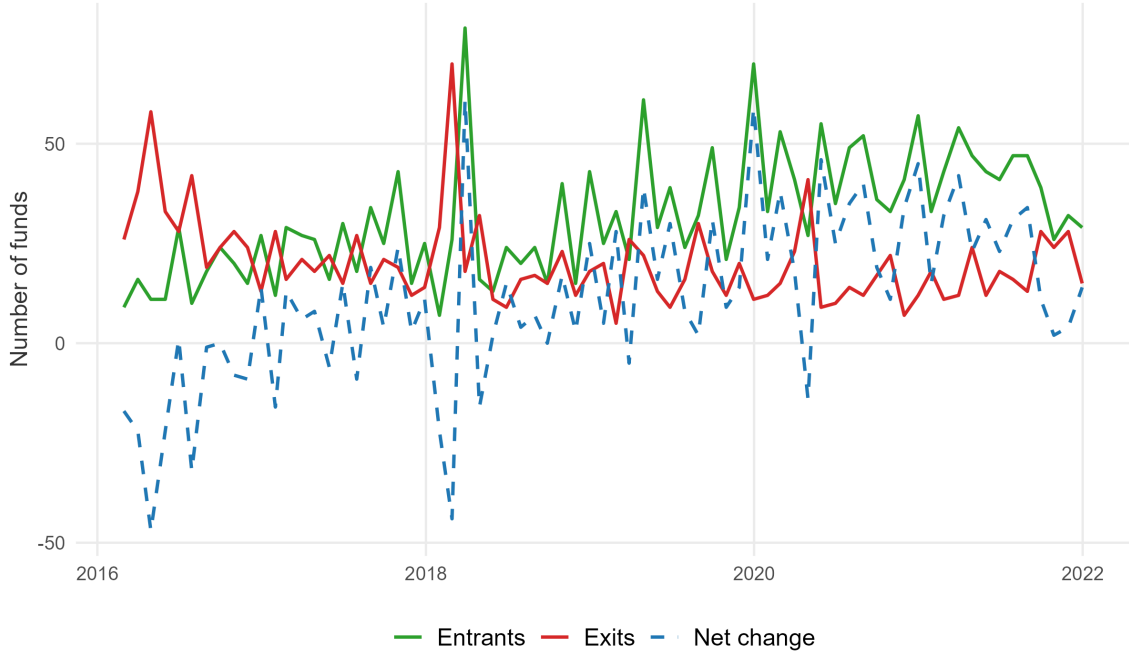
Survival at twelve months exceeds 86% for every cohort with a year of follow-up, and lies between 91.2% and 96.1% for the cohorts of 2017 through 2020. Survival at twenty-four months lies between 86.5% and 91.9% for the cohorts of 2017 through 2019. Dashes mark horizons that the window does not cover: twenty-four months for 2020, and both horizons for 2021. From 2017 onward, entry exceeds exit so the number of funds in the sample grows.

Table 4: Monthly fund entry, exit, and survival by entry year

Year	Avg. entrants	Avg. exits	Avg. net change	Funds entering	12m survival (%)	24m survival (%)
2016	17.3	30.3	-13.0	190*	86.3	78.9
2017	25.0	19.0	6.0	192	91.7	86.5
2018	26.8	22.5	4.3	193	91.2	87.0
2019	36.5	16.8	19.7	333	96.1	91.9
2020	42.7	16.2	26.5	419	95.7	–
2021	40.1	18.2	21.8	401	–	–

Notes: For the first month of the panel (January 2016), entry and exit are not defined. Averages in 2016 and the 2016 total of monthly entrants (*) are therefore February through December. Years 2020 and 2021 have no follow-up, so survival is not defined.

Figure 4: Entry and exit of funds



Notes: Monthly counts of entrants, exits, and the net change Δ_t , computed on the universe of funds that report a portfolio.

3.2 The Structure of Portfolios

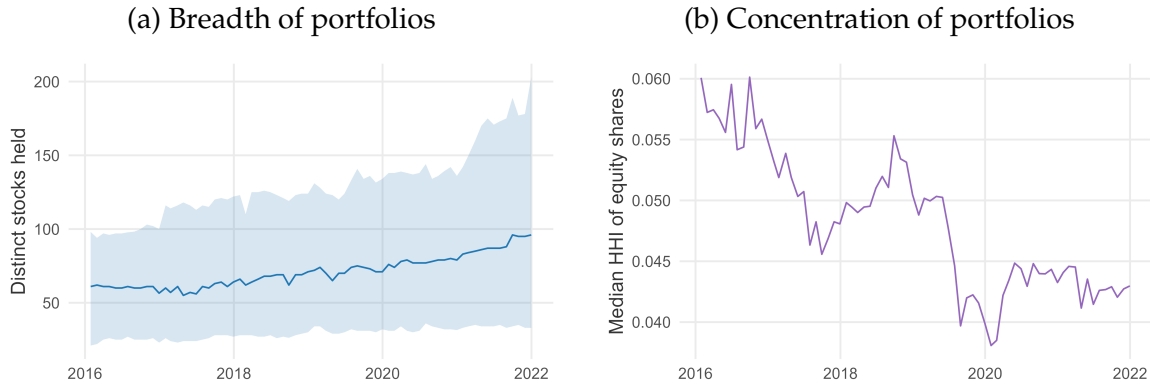
Table 5 and Figure 5 report the layer of portfolios. The median number of different stocks held by a funds rises from 61 stocks in 2016 to 90 in 2021 and the 75th percentile rises from 98 to 171. The median of the share of total AUM allocated to equity across funds rises from 43.7% to 67.3%. Figure 5a shows that this rise in median breadth is not shared evenly: the 25th percentile remains near 33 stocks, while the 75th percentile rises from about 100 to about 200.

Concentration within the equity holdings falls, but it falls by less than breadth rises. The median of H_{it}^P , the Herfindahl index of the portfolio of a fund (in shares of equity), falls from 0.0570 to 0.0432, so the effective number of positions rises from 17.5 to 23.1, an increase of 32% against an increase of 48% in the count of different stocks. The median of $C_{5,it}^P$, the share of the five largest positions in the portfolio, lies between 19.4% and 21.2% in every year, so the rise in portfolio breadth did not cause a flattening of the largest weights.

Table 5: Portfolio structure of institutions by year

Year	Fund-months	Median number of stocks held	P75 number of stocks held	Median equity share (%)	Median HHI of equity shares	Median top 5 share (%)
2016	17,753	61	98	43.7	0.0570	19.4
2017	17,500	60	117	52.6	0.0491	20.0
2018	18,076	67	122	58.5	0.0512	21.2
2019	20,048	71	129	63.4	0.0450	20.9
2020	23,457	78	138	66.5	0.0429	21.0
2021	27,362	90	171	67.3	0.0432	20.2

Figure 5: Portfolio structure



Notes: Panel (a) shows median and 25-75% interquartile range of the number of different stocks held across fund-months in each month. Panel (b) shows the median of the Herfindahl index of the weights w_{ijt} of each stock in the equity portfolio of a fund across fund-months in each month.

Table 6 and Figure 6 report the same statistics within quartiles of fund size, as measured by their AUM in a given month. Median AUM rises from R\$ 9.9 million in Q_1 to R\$ 412.3 million in Q_4 , a factor of 42. Above the first quartile the relation between size and portfolio structure is monotone in both arguments. The median of the number of different stocks held falls from 89 stocks in Q_2 to 68 in Q_3 and 61 in Q_4 , and the median of H_{it}^P rises from 0.0420 to 0.0486 and 0.0516 over the same quartiles. Funds with larger AUM therefore hold fewer stocks and divide the equity holdings less evenly among them. The median of $C_{5,it}^P$ moves in the same direction, from 13.8% in Q_2 to 24.7% in Q_3 and 22.1% in Q_4 .

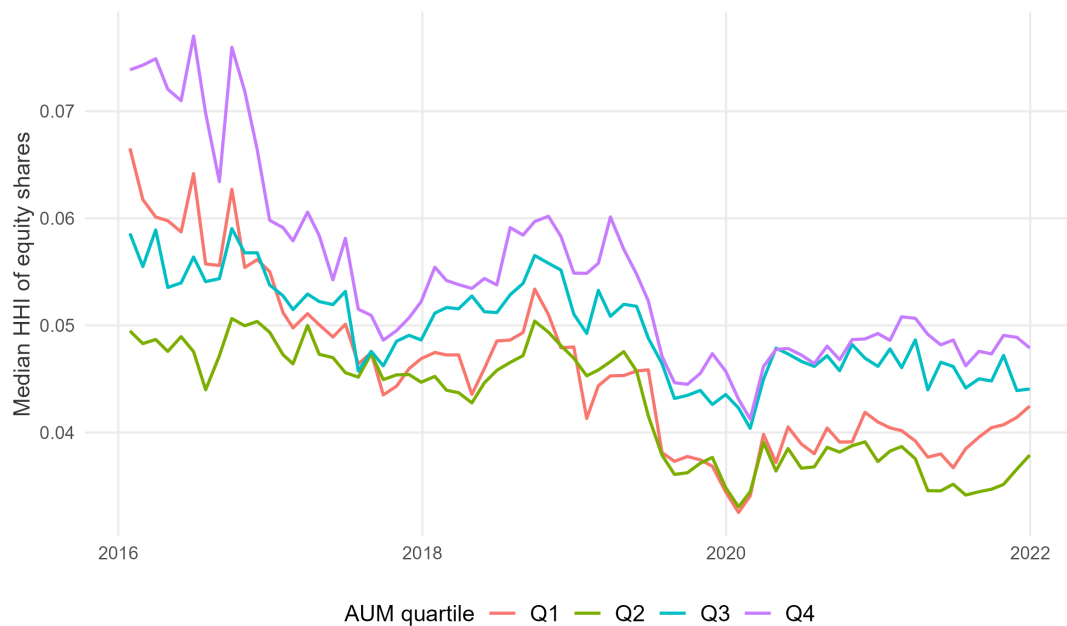
The first quartile does not extend the pattern. Its median breadth of 73 stocks falls below that of Q_2 and its median index of 0.0447 exceeds that of Q_2 , so the relation between size and concentration is not monotone over the four quartiles. Figure 6 locates the reversal in time. Through 2017 the median of H_{it}^P in Q_1 stands above the medians of

Q_2 and Q_3 , and from 2019 onward it lies with Q_2 below the medians of Q_3 and Q_4 . The ordering $Q_4 \geq Q_3 \geq Q_2$ holds in most months of the window. The median share of the balance sheet allocated to equity varies across quartiles without following a monotone pattern, so the equity share and the concentration of that allocation are distinct margins of the decision of a fund.

Table 6: Portfolio structure by within-month AUM quartile

AUM quartile	Fund-months	Median AUM	Median stocks held	Median equity share (%)	Median HHI of equity shares	Median top 5 share (%)
Q1	31,023	9,930	73.0	57.3	0.0447	18.5
Q2	31,058	32,792	89.0	39.5	0.0420	13.8
Q3	31,038	96,266	68.0	69.0	0.0486	24.7
Q4	31,077	412,252	61.0	63.4	0.0516	22.1

Figure 6: Concentration of portfolios by quartile of AUM



Notes: Median of the Herfindahl index of the weights of each stock in the equity portfolio of a fund within quartiles of AUM formed within the month.

3.3 The Structure of Ownership

Table 7 and Figure 7 report the layer of ownership. The median number of holders of a stock rises from 255 funds in 2016 to 737 in 2021 and the 75th percentile rises from 777 to 1,312. The median value of a stock held by funds in the sample rises from R\$ 27.7

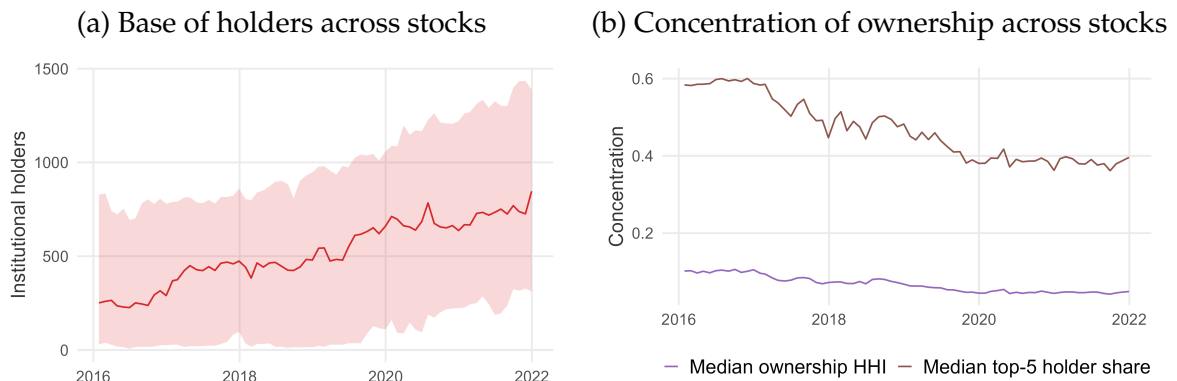
million to R\$ 283.7 million. Concentration falls along both measures. The median of the Herfindahl index for the ownership of each stock, H_{it}^O , falls from 0.1019 to 0.0459, so the effective number of holders rises from 9.8 to 21.8, and the median of the share of the five largest holders, $C_{5,it}^O$, falls from 59.0% to 38.2%.

Figure 7a reports that the widening of the base of holders reaches the stocks held by few funds only at the end of the window. The 25th percentile of N_{jt} remains below 50 funds through the first half of 2020 and rises to about 250 thereafter, while the median rises through the whole window. The count of stock-months rises from 2,862 in 2016 to 3,655 in 2021, with most of the increase in the last year of the panel, while the median number of holders increases sooner.

Table 7: Asset-side institutional ownership structure by year

Year	Number of stocks-months	Median holders	P75 holders	Median value	Median ownership HHI	Median top 5 holder share (%)
2016	2,862	254.5	776.8	27,744	0.1019	59.0
2017	2,818	442.5	802.0	48,569	0.0809	51.6
2018	2,924	443.0	871.2	74,991	0.0734	48.3
2019	2,846	575.0	991.8	165,220	0.0551	42.0
2020	2,962	675.0	1179.0	297,741	0.0468	38.7
2021	3,655	737.0	1312.0	283,698	0.0459	38.2

Figure 7: Ownership structure



Notes: Panel (a) shows median and 25-75% interquartile range of the number of different holders across stock-months in each month. Panel (b) shows the median of the Herfindahl index of the weights θ_{ijt} of ownership of each fund and the median of the share of the five largest holders across stock-months in each month.

The two margins of the array of holdings. The indices H_{it}^P and H_{jt}^O apply (1) to different shares of the same holdings: the equity weights of each fund, w_{ijt} , and the ownership shares of each stock, θ_{ijt} . The two need not move together. Between 2016 and 2021, the median of H_{it}^P falls by 24% and the median of H_{jt}^O falls by 55%. The lower bound of each index is $1/K$, with K the number of positive positions in that observation. The median number of stocks in a portfolio rises by 48%, while the median number of holders of a stock rises by 189%. Ownership therefore deconcentrates by more than portfolios, and the set of funds over which a stock is divided widens by more than the set of equity assets in a typical fund. The top-five shares show the same contrast: the median of $C_{5,it}^P$ stays near 20%, while the median of $C_{5,jt}^O$ falls from 59.0% to 38.2%. Section 4 states what the fall in ownership concentration implies for measures built from θ_{ijt} .

4 Stylized Facts

This section condenses Section 3 into a list of facts and states what each imposes on work that takes the macrostructure of the Brazilian equity market as an input.

1. **Participation of funds expands.** The count of funds rises from 1,586 in January 2016 to 2,383 in December 2021. The count declines through the middle of 2017 and rises without interruption thereafter, and the net change is positive on average in every year from 2017.
2. **Coverage of stocks expands, but it expands later.** The count of stocks held by at least one fund rises from 237 in January 2016 to 320 in December 2021, with the increase concentrated after the first half of 2020. Over the first two thirds of the window, the entry of funds is not accompanied by a widening of the set of stocks held.
3. **Concentration of AUM across funds is low and falls.** The index H evaluated at the AUM of funds falls from 0.0070 to 0.0045, so the effective number of funds rises from 143 to 222. The share of the twenty funds with the largest AUM averages 25.4% and falls from 28.7% to 23.7%. The AUM of the funds at the top rises while their share of the industry falls.
4. **Concentration of AUM across managers is high and stays stable.** The count of managers lies between 45 and 47 throughout. The share of the five managers with the largest AUM averages 42.6%, against 10.7% for the five funds with the largest AUM, and H evaluated at the AUM of managers exceeds H evaluated at the AUM of funds by a factor between 8.0 and 12.0 in every year. The effective number of managers is 18.8 in 2021.

5. **Portfolios diversify through the count of positions and not through the weight of the largest positions.** The median breadth of funds rises from 61 to 90 stocks, an increase of 48%, while the effective number of positions $1/H_{it}^P$ rises from 17.5 to 23.1, an increase of 32%. The median share of the five largest positions stands at 19.4% in 2016 and 20.2% in 2021. Over the same window the median share of AUM allocated to equity rises from 43.7% to 67.3%.
6. **Concentration of portfolios increases with the size of the fund above the first quartile.** Across quartiles of AUM formed within the month, median breadth falls from 89 stocks in Q_2 to 61 in Q_4 and the median of H_{it}^P rises from 0.0420 to 0.0516. The first quartile lies outside the ordering, with median breadth of 73 stocks and a median index of 0.0447.
7. **Ownership at the stock deconcentrates.** The median number of holders of a stock rises from 255 to 737 funds, the median of H_{jt}^O falls from 0.1019 to 0.0459, and the median share of the five largest holders falls from 59.0% to 38.2%, over a window in which the AUM of the sample rises by a factor of 4.8. The median share of the five largest holders over the pooled sample is 44.8%.

These facts bear on three research areas on this market.

Identification from shocks to institutions. Facts 3 and 4 locate the unit at which idiosyncratic shocks survive aggregation. The construction of granular instrumental variables requires that the distribution of size across agents place enough weight on a finite set of agents for the shocks of those agents to move the aggregate (Gabaix, 2011; Gabaix & Koijen, 2024; Jansen, Li, & Schmid, 2024). With H below 0.007 at the fund, an effective number of funds above 140 in every year, and a share of 9.3% to 12.4% for the five largest, the fund does not satisfy that requirement. With H near 0.06 at the manager, an effective number of managers below 20, and a share above 40% for the five largest, the manager does. Instruments for the Brazilian market for equities should therefore be constructed from the shocks to managers.

Estimation of demand from holdings. Facts 5 and 6 state the moments that a demand system fitted to this market must reproduce (Koijen & Yogo, 2019, 2025). The cross section of portfolios changed over the window through the extensive margin, since breadth rose by 48% and the weight of the five largest positions did not move, and a specification of demand in which characteristics govern only the relative size of positions held does not generate that combination. The rise of the share of AUM allocated to equity from 43.7% to 67.3% at the median, over a window in which the policy rate fell, supplies variation in the allocation between equities and the outside asset that

the estimation of the elasticity of demand can use. Fact 6 states that the parameters of demand vary with the size of the institution, since concentration rises and breadth falls with AUM above the first quartile, so a system estimated on the pooled cross section of funds imposes a restriction that the data reject at the level of description.

Measures constructed from ownership. Fact 7 constrains the reading of measures of comovement and of fragility built from the shares θ_{ijt} (Antón & Polk, 2014; Greenwood & Thesmar, 2011). Such measures are increasing in the concentration of ownership, and the median of H_{jt}^O falls by 55% over the window while the AUM of the sample rises by a factor of 4.8. A series of fragility computed on this panel therefore declines over 2016 through 2021 for a reason that is mechanical, namely the entry of funds recorded in Fact 1, and the comparison of such a series across dates requires that it be normalized by the base of holders or by the count of funds. The same fact separates the growth of this market from a process in which the institutions that hold a stock accumulate ownership of it, since ownership of the median stock was divided among 9.8 effective holders in 2016 and among 21.8 in 2021.

5 Conclusion

This paper measures the macrostructure of the equity market in Brazil from a census of the holdings of funds over 2016 through 2021. Three layers organize the analysis: the participation of institutions, the structure of their portfolios, and the structure of ownership at the stock. The facts in Section 4 summarize the lessons of these three layers. Participation expands along every margin, with growth in funds, in stocks held, and in assets under management, and with entry above exit from 2017 onward. Concentration resides at the manager, whose HHI exceeds the HHI across funds by an order of magnitude. Portfolios diversify through the count of positions while concentration within them does not vary substantially. Ownership at the stock spreads over a widening base of holders.

The scope of the panel bounds the claims. The sample covers the most relevant managers in the segment of funds with mandates in equities and covers a relatively short window, from 2016 through 2021. Expansion of the data availability can relax these bounds. Coverage of classes of assets beyond equities would turn the mapping of a segment into the mapping of a system and would permit statements about the weight of the segment within it. Extension beyond 2021 would add the cycle of rates that followed the window and would allow the facts to be tested out of the sample that produced them. A confrontation with the record as filed, in which quotas remain in the

record as quotas, would separate what the measurements owe to the market from what they owe to the convention of recording; a companion paper takes up this confrontation (Ruhe & Ferraresi Junior, 2026).

Three lines of research build on the facts we documented. The first concerns implications for the macroeconomy and the transmission of policy. The window contains a decline of the policy rate from 14.25% to 2% and, with it, a reallocation of savings toward mandates in equities, consistent with the rise of the share of assets that funds place in stocks held outright from 43.7% to 67.3% at the median. A system of demand fitted to the panel (Koijen & Yogo, 2019, 2025) would convert this reallocation into an estimate of its effect on prices, with the multipliers that arise when demand does not absorb flows without movement in prices (Gabaix & Koijen, 2021). Work in this line has traced valuations and expected returns to groups of investors in the United States (Koijen, Richmond, & Yogo, 2024), has carried the system across borders and currencies (Koijen & Yogo, 2020), has followed the propagation of shocks through networks of exposure (Chodorow-Reich, Gabaix, & Viviano, 2025), and has tied premia across classes of assets to the condition of intermediaries (Haddad & Muir, 2021). The panel in this paper permits the counterpart for Brazil, with the reallocation inside the window as the experiment and the facts of Section 4 as the moments a fitted system must match.

The second line measures exposure and builds instruments. Define sources of risk at the level of the macroeconomy, the rate of policy, the exchange rate, and the terms of trade among them, and estimate the exposure of each fund and of each manager to each source. Identification then follows the logic of granular instrumental variables, in which shocks to the agents that carry weight in aggregates, purged of the component that all agents share, serve as instruments for the aggregates themselves (Gabaix, 2011; Gabaix & Koijen, 2024). Applications of this logic have measured the effect of rebalancing by funds on exchange rates (Camanho, Hau, & Rey, 2022), the demand for treasuries (Jansen, Li, & Schmid, 2024), and the contribution of the institutions with the most assets to the volatility of the market (Ben-David et al., 2021). The condition the method requires, concentration together with shocks at the level of the agent, is located in this paper at the manager rather than at the fund level. Instruments for the market for equities in Brazil should therefore be built from the shocks of managers, and the participation layer of Section 3 supplies the weights that such construction requires.

The third line asks whether managers segment the market. In equilibria where each investor holds a subset of the securities in the market, the price of a security reflects the base of investors that holds it (Merton, 1987), and when groups of investors differ in their demand, valuations and expected returns differ with the group that

holds the asset (Kojien, Richmond, & Yogo, [2024](#)). A stochastic discount factor tied to intermediaries gives one form of this dependence (Haddad & Muir, [2021](#); He & Krishnamurthy, [2013](#)). Under segmentation of this kind, segments of the market for equities in Brazil would price with stochastic discount factors of their own and hold market portfolios of their own, and the facts in this paper, with ownership that spreads at the stock while decisions concentrate at the manager, state the conditions under which such segments can persist as the market grows. Representations of investors and of assets recovered from holdings (Gabaix et al., [2025](#); Kelly & Xiu, [2023](#)) would permit segments to be estimated rather than assumed, and a companion paper pursues this estimation on the records used here (Ruhe & Ferraresi Junior, [2026](#)). Two papers in progress by one of the authors, Ferraresi ([2026b](#)) and Ferraresi ([2026a](#)), then ask whether the behavior of a manager admits replication and whether an ETF can deliver that replication to the public. The broad sample of managers in this paper supplies the population over which both questions range, and the migration of investors toward vehicles that track rather than select (Haddad, Huebner, & Loualiche, [2025](#)) supplies the setting in which the answers carry weight for the industry.

The contribution of this paper stands regardless of which line advances first. It converts a census of holdings into a set of measured lessons on the macrostructure of the equity market in Brazil. Papers that estimate demand, that build instruments, or that test segmentation on this market now have a layer of reference and a set of moments to match.

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A Data Appendix

This appendix reproduces the detailed data documentation underlying Section 2.

A.1 Available Data Structure

Data sources and structure We have access to two main datasets from the Brazilian fund industry, both providing complementary perspectives on institutional participation in equity markets:

1. **Time series:** Daily fund-level series (fund characteristics, AUM, performance)
2. **Consolidated positions:** Monthly fund-level holdings (individual stock positions and weights)

A.1.1 Time series dataset (daily frequency)

Structure – Time series dataset

Variable	Description
COD_FUNDO	Internal fund identification code
CNPJ	Brazilian tax ID of the fund
NOME_FUNDO	Complete fund name
GESTORA	Asset management company
CLASSIFICACAO_ANBIMA	ANBIMA fund category
DATA	Reference date
COTA	Fund quota price
NUMERO_DE_COTISTAS	Number of fund shareholders
PATRIMONIO_LIQUIDO	Assets under management (thousands R\$)

A.1.2 Consolidated positions dataset – fund holdings (monthly frequency)

Structure – Consolidated positions dataset

Variable	Description
CNPJ	Brazilian tax ID of the fund
Anbima	ANBIMA fund category
Código	Internal fund identification code
Nome	Fund name
Tipo_Ativo	Asset type classification
Data_Competência	Monthly reference date
Nome_Ativo	Asset name with ticker symbol
Valor_Ativo_mil	Asset value held (thousands R\$)
Participação_Ativo	Portfolio weight (decimal)

A.2 Equity Universe

All positions in our fund-level holdings data are classified as equity (“Ações”), but a closer inspection of the asset identifier field reveals that this category encompasses several economically distinct position types beyond direct ownership of listed stocks.³ In our main sample, we restrict attention to direct holdings of B3-listed equities, identified by their ticker suffix in each asset description string.⁴

Securities lending and borrowing. Stock lending positions – where a fund has lent shares to a counterparty – retain economic ownership on the fund’s balance sheet but transfer day-to-day market risk and voting rights to the borrower. Lending and borrowing activity is reported through dedicated `Nome_Ativo` strings, separate from direct-holding lines. Lent positions are labelled “*Ações e outros TVM cedidos em empréstimo*”, while borrowed positions are labelled “*Obrigações por ações e outros TVM*”.

³The remaining position types include: shares in unlisted companies; securities lent under repo agreements; borrowing obligations from the opposite leg of those agreements; subscription rights, receipts, and warrants arising from capital increases; Brazilian depositary receipts (BDRs); and aggregated or index-linked entries that cannot be attributed to a single stock.

⁴The asset identifier field (`Nome_Ativo`) is free-text, and inspection of the full 2016–2021 sample reveals a systematic reporting inconsistency: two entries in 2018 report the company name without any ticker (“*Ações – Itaú*” and “*Ações – Petrobrás*”); these are disambiguated manually to their B3 company codes (ITUB and PETR, respectively). We aggregate by the four-letter B3 company code rather than the full share-class ticker (e.g. PETR rather than PETR3 or PETR4), so that different share classes of the same company — and the two manually disambiguated entries — collapse to a single stock observation. We also ensure that the sample includes direct holdings of units, but no other positions with tickers ending in code 11 (such as ETFs or FIIs).

recebidos em empréstimo”. In both cases, the underlying B3 ticker is appended after a dash (e.g. “... *empréstimo* - VALE3”). Our classification routine maps these entries to `lending_position` and `borrowing_obligation`, respectively. The pattern is highly regular across tickers.

Borrowed positions enter with negative market values and participation shares, consistent with liability accounting: the fund owes the return of borrowed shares rather than holding them outright. Lent positions enter as positive receivables. Table A1 reports that 6.1 million holding rows correspond to lent positions and 4.0 million to borrowing obligations over 2016–2021. At the fund-month level, 68.6% of observations record at least one lending line and 56.7% record at least one borrowing line.

Table A1: Market-wide securities lending and borrowing prevalence (2016–2021).

Metric	Value
LB rows (lending)	6,083,054
LB rows (borrowing)	3,987,784
Fund-dates (total)	124,662
Fund-dates with lending	85,470
Fund-dates with borrowing	70,651
Fund-dates with lending (pct)	68.56
Fund-dates with borrowing (pct)	56.67

We examine fund-month overlap on a liquid audit stock, VALE3. Table A2 cross-tabulates fund-dates with any VALE3 lending or borrowing (LB) activity against fund-dates with a direct holding of VALE3 (or, alternatively, any VALE share class). Among fund-dates with LB activity on VALE3, 98.3% also report a direct holding of VALE3 in the same month. Only 1.7% show LB lines without a matching direct `listed_equity` entry for that share class. Including lent positions in portfolio concentration would therefore double-count exposure for the vast majority of lending observations on this stock.

Table A2: Fund-date overlap between lending/borrowing and direct holdings (VALE3, 2016–2021).

Direct match	Has LB	Has direct	Fund-dates	% of LB fund-dates
VALE3	No	Yes	29,287	
VALE3	Yes	No	1,168	1.7
VALE3	Yes	Yes	67,072	98.3
VALE (any share class)	No	Yes	31,900	
VALE (any share class)	Yes	No	965	1.4
VALE (any share class)	Yes	Yes	67,275	98.6

We therefore restrict the rest of our analysis to the sample of direct holdings only (listed_equity and named_equity with a resolvable issuer code).

ETF-labelled funds. Six funds in the panel are classified as *Fundos de Índices – ETF*. We do not exclude them: their equity exposure is reported as direct holdings of constituent stocks and therefore enters our analysis on the same terms as other funds. ETF *tickers* held as securities (e.g. BOVA11) are dropped from the direct-holdings sample, as noted above. Supplementary checks confirm that all six are Itaú index ETFs, that each active month reports individual constituent stocks rather than a single index position, and that roughly 70% of their assets are direct equity holdings, with most of the remainder in securities lending excluded from our concentration measures.