

Common Ownership Around the World^{*}

Miguel Antón[†]

Florian Ederer[‡]

Mireia Giné[§]

Guillermo Ramirez-Chiang[¶]

June 16, 2025

Abstract

We study common ownership in 49 countries from 2005 to 2019 and show that it is pervasive and rising around the world. However, despite this global growth, common ownership is still considerably lower in all countries compared to the United States. It is particularly high and growing rapidly among the largest firms, a trend observed across all countries and regions. The rise of common ownership stems not only from increased institutional investment but also from its growing concentration, a development in which the Big Three (BlackRock, Vanguard, State Street) play a dominant role, particularly in the United States. Although non-Big Three institutional investors remain important in other countries, the significant increase in common ownership in many countries is primarily attributable to the breadth and size of Big Three holdings. We also investigate how common ownership is related to legal, institutional, and market characteristics such as investor protection laws, competition laws, mandatory ESG disclosure, and labor market frictions across firms and countries.

JEL Classification: M12, L13, J33, G32, D21, L21

^{*}We thank Will Goetzmann, Paul Goldsmith-Pinkham, Martin Schmalz, and seminar participants at Boston University for helpful comments. We are grateful to Eduard Seyde, Gustavo Sepúlveda, and Pete Zhang for outstanding research assistance. Antón acknowledges the financial support of the Department of Economy and Knowledge of the Generalitat de Catalunya (Ref. 2014 SGR 1496) and of the Ministry of Science, Innovation, and Universities (Ref. PGC2018-097335-A-I00), and IESE High-Impact Project 2018-2022.

[†]IESE Business School, manton@iese.edu

[‡]Boston University, CEPR, ECGI, and NBER, ederer@bu.edu

[§]IESE Business School, ECGI, and WRDS, mGINE@iese.edu

[¶]IESE Business School, gramirez@iese.edu

1 Introduction

Over the last decade, common ownership—the practice whereby two or more competing firms are partially owned by the same investors—has drawn the attention of legal scholars (e.g., [Elhauge \(2016\)](#) and [Posner \(2021\)](#)) and antitrust authorities (e.g., [Phillips \(2018\)](#) and [Vestager \(2018\)](#)) due to its harmful effects on product market competition first highlighted by academic contributions in economics and finance.¹ The 2023 U.S. Merger Guidelines explicitly recognize that transactions leading to or involving common ownership may raise competitive concerns and should be evaluated under the same substantive frameworks as full mergers ([U.S. Department of Justice and Federal Trade Commission, 2023](#)), marking a clear policy response to the growing evidence on the potential anticompetitive effects of common ownership. However, despite the burgeoning research on and policy responses to common ownership, much of the existing work is primarily focused on the United States and even in the U.S. context little effort has been devoted to describing and understanding the drivers of the rise of common ownership.²

In this paper, we make four principal contributions. First, we systematically document the global rise and prevalence of common ownership to cover a much broader set of publicly listed firms worldwide. Common ownership is a global phenomenon that started in the United States but has spread around the world. However, the U.S. remains an outlier and exhibits by far the highest level of common ownership, between two to four times as high as that observed in the next-highest countries. Second, we show that the rise of common ownership stems not only from increased institutional investment but also from its growing concentration, with the Big Three (BlackRock, Vanguard, and State Street) dominating in the United States and non-Big Three institutional investors playing important roles in other countries. However and despite the comparatively lesser importance of the Big Three outside the U.S., in most countries the strongest contribution to the rise of common ownership has come from the Big Three. Third, common ownership is

¹During this period, the literature on common ownership has grown in several directions yielding studies about its impact on product market competition, ([He and Huang, 2017](#); [Azar et al., 2018](#)), advertising ([Lu et al., 2021](#)), asset prices ([Antón and Polk, 2014](#)), corporate governance ([Edmans et al., 2019](#); [He et al., 2019](#); [Kang et al., 2018](#); [Antón et al., 2023b](#)), corporate social responsibility ([Dai and Qiu, 2021](#)), information disclosure ([Park et al., 2019](#)), innovation ([López and Vives, 2019](#); [Antón et al., 2025](#)), labor market power ([Azar and Vives, 2021a](#); [Azar et al., 2021](#); [Goshen and Levit, 2021](#)), market entry ([Newham et al., 2019](#); [Xie and Gerakos, 2020](#)), M&A transactions ([Brooks et al., 2018](#); [Antón et al., 2022](#); [Antón et al., 2023a](#)), and total welfare ([Ederer and Pellegrino, 2021](#)) among many others.

²See the work of [Backus et al. \(2021\)](#) and [Gilje et al. \(2020\)](#) and surveys by [Schmalz \(2018, 2021\)](#).

highest among the largest firms in each country, with top-tercile firms exhibiting roughly common ownership levels that are three times as high as that of the median firm, a pattern that holds across all countries and time. Fourth, we investigate how common and universal ownership (defined as the widespread holding of diversified and sizable equity stakes by investors across many firms in the entire economy, though not necessarily in the same industry) are related to legal, institutional, and market characteristics such as investor protection laws, competition laws, mandatory ESG disclosure, and labor market frictions across firms and countries.

We first explore the global spread and variation of common ownership. While prior research has largely focused on the United States, our dataset spans 61,649 unique firms from 49 countries between 2005 and 2019, covering economies that account for 86% of global GDP. We find that both universal and common ownership are now global phenomena: in the median country, the average intra-industry implied profit weight (κ) is 0.036, and reaches as high as 0.155 in the United States, nearly twice that of any other country with the exception of Ireland. Common ownership is rising in every major economy, primarily driven by the growing share and concentration of institutional investor holdings. From 2005 to 2019, average pairwise κ more than doubled in the median country, with particularly sharp increases among the largest firms and in developed markets. In the United States, for instance, the average κ more than quadrupled from 2005 to 2019. Similarly, the Euro Area and Japan experienced substantial increases in κ , especially among top-tercile firms after 2009 and 2014, respectively. Although the U.S. remains a clear outlier, other countries with notably high levels of common ownership include China, South Africa, and Ireland. A second tier, including the United Kingdom, Finland, Sweden, and several Arab and European nations, also exhibits significant, though comparatively lower, levels of common ownership.

Common ownership is consistently highest among the largest firms, a pattern observed across all countries and regions. The data show that universal and common ownership is on average three times higher for above-median firms than for the full universe of firms, with an even greater gap for the top tercile. At the end of our sample in 2019, the average pairwise κ for top-tercile firms reaches 0.511 in the United States, 0.048 in the Euro Area, 0.110 in Japan, and 0.158 in the United Kingdom. This pattern of higher common ownership among larger firms relative to smaller firms is particularly pronounced in developed capital markets such as the United States, the Euro Area, Japan, and the United Kingdom, where institutional investors hold larger stakes in high-market-cap firms. Whereas the United States and United Kingdom have experienced a

steady and long-term increase, other regions and countries have seen more abrupt shifts due to consolidation between asset managers, regulatory changes, or policy responses.

We further investigate the identity of the largest shareholders and their role in shaping the global architecture of common ownership. The increasing prevalence of common ownership is not solely due to the overall rise of institutional investment but also to the growing concentration within institutional investing itself. We show that the rise of common ownership is closely tied to the growing influence of a small set of global institutional investors, particularly the Big Three. In the United States, these asset managers have become the largest shareholder in nearly 40% of public companies by 2019, up from under 3% in 2005. Their growing dominance is mirrored around the world where the Big Three consistently appear among the largest owners in most developed economies though at substantially lower ownership levels and often complemented by national players. Despite their generally small individual stakes outside the U.S., the Big Three contribute disproportionately to increases in common ownership due to the breadth of their portfolios. This is because common ownership is not exclusively driven by deep control of individual firms but by the widespread and overlapping presence of the same institutional investors across the equity landscape. Even where average stakes remain modest, the extensive spread and portfolio overlap of the Big Three gives rise to a dense network of common ownership.

We further examine how institutional, legal, and market characteristics shape common ownership across countries. Stronger antitrust and competition laws and enforcement are associated with lower common ownership. However, more arduous market entry procedures are associated with higher common ownership, suggesting that regulatory barriers can reinforce investor dominance. In contrast, rigid labor protections correlate with lower common ownership, likely by limiting investor control over workforce decisions. We also explore the impact of investor protection laws and ESG disclosure requirements on common ownership. Stronger investor protections encourage institutional investment and dispersed but overlapping ownership, whereas government-mandated ESG disclosures are linked to lower ownership concentration, potentially due to compliance costs or shifting investment preferences. We also investigate the relationship between political stability and common ownership, revealing that weaker regulatory environments and poor governance quality are associated with higher common ownership, possibly due to lobbying influence or firms consolidating control in response to regulatory uncertainty. Together, these findings demonstrate how legal frameworks and institutional environments shape the prevalence and structure of common

ownership worldwide.

Our paper contributes to two important strands of literature. First, we provide a more comprehensive description of common ownership trends and patterns around the globe. Second, we add to the vast literature at the intersection of law and finance that has explored the driving factors of corporate ownership and control. The rest of the paper is organized as follows. Section 2 describes the data and Section 3 contains descriptive results about the geographic spread and the cross-sectional and time series variation of common ownership. Section 4 analyzes the main drivers of common ownership including firm size and ownership structure. Section 5 provides country case studies of the rise of common ownership in China and Japan. Section 6 documents the relationship between common ownership and institutional, legal, and market characteristics. Finally, Section 7 concludes.

2 Data

2.1 Data Sources

To construct measures of universal and common ownership around the world, we use data from the Thomson Reuters Global Ownership Database. This database identifies shareholdings by 13F institutions, mutual funds, pension funds, insurance funds, and other institutional investors, and it includes both insiders and blockholder positions using multiple sources and methods. For instance, in the US and Canada, data sources include, among others, 13-F filings from the Securities and Exchange Commission (SEC), Schedule 13Ds, Schedule 13Gs, proxy filings, 10Ks, SEC Form N-30D, SEC Forms 3, 4, and 5, the Canadian System for Electronic Disclosure by Insiders (SEDI), and firm websites. Ownership data for other countries are sourced from the UK Share Register, stock exchanges, official regulatory bodies, third-party data vendors, company websites, news, and annual/interim reports.

Given the multiple and complementary data sources, one of the strengths of the Thomson Reuters Global Ownership database is that it provides a more accurate assessment and aggregation of ownership data compared to other sources such as the Capital IQ Platform, in particular when capturing the ownership by individuals or families that are influential owners in non-US firms.³

³A few examples from Europe illustrate the superiority of the database we use. For each case we manually searched reports and news and verified that the largest owners reported by the Thomson Reuters Global Ownership

Having the right level of aggregation of individual ownership is critical for the calculation of implied profit weights within many European countries and other parts of the world where the ownership structure of corporations tends to be less atomistic and characterized by family ownership (Faccio and Lang, 2002; Villalonga and Amit, 2020).

Our initial database ranges from 2005 to 2019 and includes details on shareholder identities, shareholder types (e.g., individual/family, pension fund, corporation), and the number of shares held by each shareholder, security identification codes, types (e.g., common stock, preferred stock, depositary receipt), and primary industry codes based on the Thomson Reuters Business Classification (TRBC) that follows a market-based rather than a production-process-based approach to allocate firms into industries. Our data also include the number of shares outstanding and the stock price for each security. Thus, we are able to calculate the market capitalization of firms. We restrict our attention to common stocks and use data on firms’ equity structure from Capital IQ to ensure the exclusion of multi-class share firms from our sample.⁴

Given the scale of the data, we deal with cases that may have reporting issues or constitute significant outliers in terms of the recorded ownership information in the following way. We follow a similar procedure as Schwartz-Ziv and Volkova (2024) and use forward filling when the gap between two reports associated with the same shareholder and firm is not greater than three years, given that some reports, especially in the case of blockholders, do not take place every quarter as 13F reports do. We exclude firm-quarter combinations where a single shareholder owns

database for these cases and their ownership stakes are the correct ones. For Christian Dior (France) Capital IQ reports an ownership of 87.95% by the Arnault Family, while the Thomson Reuters Global Ownership database reports 97.50%. For Hermes International (France), Capital IQ reports H51 SAS as the largest owner of the firm with an ownership of 54.91%, yet this owner is just a holding firm held exclusively by members of the Hermes Family Group. On the other hand, the Thomson Reuters Global Ownership database identifies the Hermes Family as the largest shareholder of Hermes International, with a stake of 66.7%. In the case of BMW (Germany), Capital IQ reports Susanne Klatten as the largest shareholder with a stake of 19.12%. However, Thomson Reuters identifies Stefan Norbert Quandt as the largest shareholder with a stake of 25.83%.

⁴The exclusion of multi-class share firms allows us to mitigate the potential impact of missing information regarding shares with special (or no) voting rights on the calculation of firm profit weights, as implied by the common ownership theory (Backus et al., 2019). For instance, without this exclusion, we would underestimate the influence of Mark Zuckerberg on Meta due to the lack of information on Meta’s class B shares. Importantly, we believe that this exclusion does not imply a lack of ability to draw meaningful conclusions about universal or common ownership trends around the world and make other valuable inferences as multi-class share firms constitute a small fraction of companies worldwide. Gompers et al. (2010) document that only 6% of US publicly-listed firms had dual-class share structures during the 1995-2002 period. Cremers et al. (2024) show that for a sample of 8,277 US firms that went public during 1980-2019, only 8.4% had a dual-class share structure. Using a worldwide sample that goes from 2001 to 2016, Matos et al. (2018) show that the fraction of multi-class firms in the US is about 8% and that this type of firm represents only 5% of the publicly-listed firms across the globe and 10% of world market capitalization.⁵

more than 98.5% of a firm in our data. While cases where a stake greater than 98.5% are likely due to misreporting issues, there are cases outside the US where using a lower threshold would be wrong; for instance, in 2019Q4, the Arnault family owned 97.5% of Christian Dior in France. Hence, we believe that using a threshold of 98.5% ownership share is appropriate as an exclusion criterion. Similar to Backus et al. (2021), we also exclude significant outliers constituted by firm-quarter observations where the ownership ratio, i.e., the ratio between the sum of the number of recorded shares for shareholders and the number of shares outstanding, exceeds 120%.⁶ We then re-weight the shareholder stakes for a small number of firm-quarter observations where the ownership ratio is greater than 100% so that their stakes add up to 100% (Lewellen (2011)).

In the case of individual funds, ownership data are further aggregated at the level of the fund family. When doing so, we also account for some large M&A transactions in the asset management industry, such as the one between BlackRock and Barclays Global Investors (BGI). These transactions were identified using merger and acquisition data from SDC. We further consolidate the holdings by the Chinese government not just through government institutions but central- or provincial-state-owned enterprises (SOEs), given that China has more SOEs than any other country in the world and much of its participation in the ownership of firms takes place through SOEs.⁷ We exclude firm-quarter observations with ownership ratios below 5% to mitigate the impact of poor ownership coverage in calculating implied universal or common ownership profit weights. Finally, we excluded some countries with a low number of firms covered over our sample period from our sample.

Our final sample comprises ownership information for 61,649 unique firms from 49 countries and spans the period from 2005 to 2019 representing 86% of the world’s real GDP in 2019 according to data from the Penn World Tables. Figure A1 shows that our sample is very comprehensive in terms of firm coverage, market capitalization, and ownership information. First, Figure A1(A) shows that our sample includes a large number of firms. We start with 22,100 firms in 2005Q1, then

⁶See the procedure described on Michael Sinkinson’s website: <https://sites.google.com/view/msinkinson/research/common-ownership-data>

⁷To consolidate holdings by the Chinese government through SOEs, we start by looking in our database shareholder names that matched with the names of approximately 800 large central and provincial SOEs that were hand-collected by Allen et al. (2024).⁸ We then proceed to manually look for the shareholder names in our database that match the names of the wholly owned subsidiaries of these large SOEs. Finally, from the list of Chinese shareholder names in our database that did not have a match with the aforementioned SOEs, we took the 5000 largest shareholders based on the value of their holdings and manually verified their SOE status. In this way, we ensure that we capture much of the ownership of the Chinese government through SOEs.

it reaches 34,525 in 2009Q4 and smoothly increases to 35,945 in 2019Q4. Second, Figure A1(B) shows that the median ownership coverage ratio is high and remains above 58% in almost all the quarters during our sample period. Finally, Figure A1(C) shows that the market capitalization of the firms included in our sample is sizable, around \$USD 28.57 trillion at the beginning of 2005 and reaches \$USD 71.38 trillion in the last quarter of 2019.⁹ This figure further shows that the market value of the holdings recorded in our data tracks the market capitalization of the sample firms very well. Table A1 in the appendix provides an overall picture of the number of unique firms per country, their ownership ratios, market capitalization, and the holdings value captured by the ownership structure.¹⁰ Importantly, Table A3 shows that when looking at the 500 largest firms around the world in 2019Q4, we find many cases where individuals, families or government institutions are the largest shareholders with very significant stakes. As mentioned before, this is one of the strengths of using this database, as it captures large stakes by non-institutional owners, like Jeff Bezos in Amazon (15.5%) or the Bettencourt Family in L’Oreal (33.3%), which is crucial for accurately measuring common ownership. For ease of exposition, we report only 20 of these cases. The examples in this table support the notion that using only data on 13f institutional investors when calculating common ownership may lead to poor estimates of the extent and intensity of this phenomenon.

2.2 Measuring Universal and Common Ownership

The existing literature proposes multiple measures of common ownership. We build on (Azar, 2017) and Backus et al. (2021) to construct theoretically informed measures of universal and common ownership as follows:

$$\kappa_{fg} = \frac{\sum_{\forall s} \gamma_{fs} \beta_{gs}}{\sum_{\forall s} \gamma_{fs} \beta_{fs}} \quad (1)$$

κ_{fg} is the weight that firm f places on firm g ’s profits, as implied by the common ownership hypothesis, β_{fs} and γ_{fs} stand for the cash flow rights and control rights that shareholder s has in firm f , respectively, and β_{gs} denotes the cash flow rights that shareholder s has in firm g .

⁹This amount is approximately 80% of the \$USD 89.57 trillion reported by the World Federation of Exchanges as global market capitalization in 2019. See the World Federation of Exchanges’ website <https://focus.world-exchanges.org/articles/market-capitalisation>.

¹⁰Table A2 shows how we classify investors based on the reported owner type of each shareholder in the Thomson Reuters Global Ownership database.

For common ownership, the relevant firm pairs are in the same industry, whereas for universal ownership we consider all firm pairs in a given country or region.

Following the literature on corporate control (e.g., [Aminadav and Papaioannou \(2020\)](#)) and its relevance for common ownership ([Azar, 2017](#); [Azar and Vives, 2021b](#)), we calculate Banzhaf profit weights ($\kappa_{Banzhaf}$). Instead of relying on the “one share, one vote” approach ($\gamma_{fs} = \beta_{fs}$) or a representation of control rights as a quadratic form of cash flow rights ($\gamma_{fs} = \beta_{fs}^2$), which places more weight on the largest shareholders, we replace a shareholder’s control ownership (γ_{fs}) with their relative voting power index, which is measured using the normalized Banzhaf index ([Banzhaf, 1965](#)).¹¹ This index captures how likely a shareholder is to be pivotal relative to other shareholders, and thus proxies for the weight that a firm’s manager uses in her assessment of which shareholders’ interests should be prioritized.¹²

There are two conceptual advantages of using the Banzhaf index when analyzing common ownership questions ([Azar and Vives, 2022](#)). First, under proportional ownership, a shareholder with 51% of the shares is only assigned a weight of 51%, even though they effectively control the firm. In contrast, the Banzhaf index assigns this owner close to full control. Second, when ownership structures are more dispersed, even shareholders with 10—15% stakes can effectively exert control. Proportional models underestimate this influence, while the Banzhaf index more accurately reflects it. As shown by [Azar \(2017\)](#) and [Brito et al. \(2018\)](#), the Banzhaf control assumption can be further microfounded as the outcome of a shareholder voting model in which managerial candidates maximize their probability of winning the election.

Importantly, this approach enables us to capture the nuances of control and influence beyond the distinction between single- and multi-class share structures. The study covers three different common ownership measures. First, our universal ownership measure considers all firm pairs within the same country in a given quarter, independently of whether they share the same industry or not. Second, our intra-industry common ownership measure considers only firm pairs within the same country and industry in a given quarter. Third, our inter-industry common ownership measure considers only firm pairs that share the same country but not the same industry in a

¹¹We compute the normalized Banzhaf index using *vpowerrin* package in Stata developed by [Ecker \(2019\)](#), which implements dynamic programming algorithms to calculate various voting power indices.

¹²As a matter of computational tractability, we assign a weight of zero to shareholders with ownership stakes below 0.5%. However, this does not mean that we exclude these shareholdings from our sample, but their stakes are simply not used for the computation of the common ownership weights. Furthermore, this tradeoff between tractability and accounting for full distribution of ownership is not a major concern because owners below 0.5% have negligible pivotal voting power, as pointed out in [Azar et al. \(2018\)](#).

given quarter.

3 Descriptive Results

3.1 Geographic Variation

We begin our analysis by documenting the pervasiveness of universal and common ownership around the world for the most recent time period of our sample (2019Q4). The two panels of Figure 1 show a world map and report the average pairwise κ profit weights (measuring universal ownership) and intra-industry κ pairwise profit weights (measuring common ownership) between all firm pairs in a given country.

Specifically, for each pair of firms within a country, we calculate the weight that a firm i places on another firm j 's profits (κ_{ij}) under the common ownership hypothesis. We assume that a shareholder's control weight in a firm's objective function is proportional to its Banzhaf voting power ($\gamma = \text{Banzhaf Index}$). Panel A of Figure 1 depicts the cross-country distribution of universal ownership by showing the arithmetic average of the pairwise implied profit weights κ_{ij} of all firm pairs within a country. In contrast, Panel B of Figure 1 focuses on intra-industry common ownership and reports the arithmetic average of the pairwise implied profit weights for firm pairs in the same country and industry.

Several patterns emerge from Figure 1. First, universal (Panel A) and common ownership (Panel B) are features of public equity markets around the world, with sizable profit weights in several economies. Second, universal and common ownership are strongly positively correlated. The average level of common ownership is generally higher than that of universal ownership, as shown by the darker red-shaded colors in Panel B, though there are some exceptions. Third, there is significant cross-country variation. In particular, universal and common ownership are comparatively high in the United States, the United Kingdom, Ireland, China, and South Africa. Among these countries, the US is a particularly large outlier. Its average pairwise κ for the full sample of firms is equal to 0.1540 (see Table 1), which is almost twice as large as any other country in the world. Ireland (0.1107), China (0.0964), and South Africa (0.0785) also have relatively high values. In contrast, universal and common ownership are much less pervasive in most other European and Asian economies. Northern European countries such as Ireland, the United Kingdom, the Netherlands, Norway, Sweden, and Finland have markedly higher levels of

universal and common ownership compared to their Southern counterparts.

Table 1 provides further information on the spread of universal and common ownership across the globe. It reports average pairwise κ measures by country, grouped by geographical proximity, and splits them based on their ownership, size, and industry with higher values shaded in darker colors. Several patterns are worth highlighting. First, the United States remains a clear outlier: its average pairwise κ is nearly double that of any other country. Second, within Europe, there is a striking North-South divide. Northern European countries—including Ireland, the Netherlands, and the Nordic economies—exhibit substantially higher levels of universal and common ownership than their Southern European counterparts, such as Italy, Spain, and Portugal. Third, in many emerging markets, such as China, South Africa, and Mexico, common ownership levels are relatively high despite less mature asset management industries, likely reflecting the presence of large conglomerates or state-affiliated investors with cross-firm stakes. The table also reveals that intra-industry common ownership tends to exceed inter-industry ownership in nearly all countries, reinforcing the idea that overlapping ownership is especially concentrated among firms in the same sector.

These geographic patterns underscore the global spread of universal and common ownership while revealing significant heterogeneity in levels and structure across countries and regions. Some of this variation reflects differences in the maturity and concentration of national asset management industries; in other cases, it may reflect ownership traditions, regulatory environments, or the structure of local capital markets. Although the United States stands out, many other economies already exhibit levels of common ownership that raise similar questions about potential market-wide effects. This geographic variation sets the stage for our subsequent analysis of the institutional and legal determinants of common ownership patterns around the world.

3.2 Broad Time Patterns

While Figure 1 and Table 1 offer snapshots of the global distribution of universal and common ownership at a single point in time (i.e., the final quarter of 2019), understanding how these patterns have evolved over time is equally important. The rise of institutional ownership, consolidation among asset managers, and regulatory reforms may have shaped not only the level but also the trajectory of common ownership across countries. To capture these dynamics, we next turn to a time series analysis that traces the development of universal and common ownership by

country and firm size.

We begin by exploring the evolution of universal ownership by country and firm size over time in Figures 2A, 2B, and 2C.¹³ In almost all major economies universal and common ownership have been on the rise, though the increase has generally been more muted and less steady than in the United States, where average pairwise κ for all firms in the balanced panel more than quadrupled and rose from around 0.07 in 2005 to over 0.3 by the end of 2019. This increase in universal ownership is more recent and sometimes more abrupt in other countries. For instance, the increase in universal ownership is substantially muted from 2004 to 2009 in the Euro Area for the full sample of firms. However, it received a kickstart in late 2009, particularly for larger firms, with the merger of BlackRock and BGI, and consistently continued thereafter, as shown in Figure 2A. Similarly, the evolution of universal ownership in Germany and, to a lesser extent, also in France mirrors that for the Euro Area as shown in Figure 2B.

In contrast, in Japan, the rise of universal ownership only began in 2014. This increase is due to the Bank of Japan’s quantitative easing policy and, more specifically, its ETF purchasing program, which is based on ETFs tracking the Nikkei 225 index, the TOPIX, and the JPX-Nikkei 400. The program began in 2010, expanded in scale and scope over the following few years, and received another large boost in September 2016 when the BoJ increased the amount to be invested in ETFs tracking the three indices from 3 trillion yen to 5.7 trillion yen per year. A similar, though not as dramatic, change in the trajectory of universal ownership holds for Australia where universal ownership increased only slowly, even for top-tercile firms, until 2015 but increased rapidly since then.

But the rise of universal ownership is not a feature of all economies in our sample and there are some notable exceptions to this global trend. In the United Kingdom, Italy, China, India, and South Africa, the increase in universal ownership is more muted or even entirely absent in the balanced panel of firms, in some cases even for the largest firms. However, this lack of growth in common ownership has to be seen in context of very different levels across countries. Compared to the European economies which experienced large increases in universal ownership (e.g., Germany

¹³The values displayed in Table 1 do not match those shown in Figures 2A–2C because they are based on different samples. Table 1 presents statistics based on cross-sectional data from 2019Q4, using information on all firms at that point in time. In contrast, Figures 2A–2C are based on a balanced panel (i.e., firms that were present throughout the entire sample period). The purpose of using the balanced panel is to ensure that the trends reflect changes in ownership over time and are not influenced by changes in the firm sample from one quarter to another due to firm entries or exits.

and France) and reached average values of κ for top-tercile firms of 0.12 and 0.06 respectively in 2019, universal ownership already was and still remains much higher in the United Kingdom, China, and South Africa where top-tercile firm κ averages are around 0.3.

These broad time patterns reveal both convergence and divergence in the evolution of common ownership across countries. While many economies are experiencing a steady rise of universal ownership, which is often triggered by institutional consolidation or policy shocks, others exhibit persistently high levels without recent growth. This heterogeneity highlights the role of both structural and temporal factors in shaping common ownership dynamics across global capital markets, and suggests that while the United States is a clear outlier, it may also offer a preview of trends that will likely emerge elsewhere.

4 Drivers of Common Ownership

Having established the global pervasiveness and upward trajectory of common and universal ownership, we now turn to examining the underlying drivers of this phenomenon. While the previous sections documented where and how common ownership is rising, this section investigates the structural firm-level and country-level characteristics that help explain these patterns. In particular, we assess how factors such as firm size, the composition of institutional investors, and the concentration of asset management contribute to the variation in common ownership both within and across economies and industries.

4.1 Firm Size

An important pattern that emerges from Table 1 and Figures 2A–2C is the role of firm size. Although the levels of universal ownership are quite different across countries and geographical regions, the relationship between universal ownership and firm size is remarkably similar across the world. In almost all countries in our sample, the average pairwise κ is about three times larger for above-median firms than for the full universe of firms in each country. This pattern is even more pronounced for top-tercile firms (highlighted in progressively darker shades of green based on average pairwise κ in Table 1) and illustrates that universal ownership is substantially more widespread than previously documented by contributions that exclusively focus on the largest

firms included in major indices which include only the top decile of firms.¹⁴

The increase is most consistent and steadiest in the United States where large asset owners have contributed to its rise since the late 1980s (Backus et al., 2019). Figure 2A highlights the pronounced and relatively steady gap in κ across firm size groups in the United States. Average pairwise κ for all U.S. firms rose steadily from around 0.07 in 2005 to over 0.3 by 2019. But the increase is even more pronounced for larger firms: for above-median firms, κ reaches roughly 0.6, while for top-tercile firms, it reaches almost 0.65 by the end of the sample period. The dashed green line, which tracks S&P 500 firms, lies slightly above all other groups throughout the time period, underscoring both the important role of index constituents in driving universal ownership trends but also that the high level of universal ownership is not a unique feature of just the largest companies. In the Euro Area the growth of universal ownership among top-tercile firms has been particularly large, with average pairwise κ rising from less than 0.02 in 2005 to over 0.08 in 2019. The gap in κ between top-tercile firms and the full sample of firms is even larger in Australia, Japan, Germany, and France and continues to increase over the sample period as shown in Figures 2B and 2C. However, in most other countries the gap is similarly large in overall proportions but remained relatively steady over almost 20 years.

Figures A3A–A3C in the appendix report the contribution of large-firm pairs to the share of total pairwise κ . This share is on the decline in the United States where universal ownership has reached the majority of, if not all public firms. But it is still mostly rising in all other countries where universal ownership is a particular feature among the largest firms. The share also varies considerably between countries, reaching as high as 90% in the Euro Area and as low as 30% in China.

These patterns suggest that large firms are an important, though not the only, conduit through which institutional investors (and, as we will show later, particularly the Big Three) concentrate their ownership. This is consistent with the asset allocation practices of global institutional investors, who tend to overweight large, liquid, and index-included firms. As a result, measures of universal and common ownership may overstate the anticompetitive effects of common ownership for smaller firms, while understating the degree of coordination or reduced rivalry at the top end of the firm size distribution.

¹⁴There are however some exceptions to this monotonicity result. For a few countries, including Mexico, Egypt, and Colombia, the average pairwise κ for top-tercile firms is lower than for firms above the median though it is still higher than for firms below the median.

4.2 Types of Owners

The increasing concentration of common ownership, especially among large firms, naturally leads to questions about who the owners driving this increase are. A growing body of research has highlighted the role of large institutional investors, especially the so-called Big Three (BlackRock, Vanguard, State Street), in causing these patterns. These institutions have become dominant players in US equity markets and are increasingly prominent in discussions about market power and corporate governance. Understanding the ownership structure underlying universal and common ownership is therefore essential for interpreting its potential implications. While the drivers behind the secular increase in common ownership in the U.S. have been studied before, little is known about which owners are driving the increase in common ownership around the globe. We show that although the Big Three play a central role in the United States and are relatively less prominent in other countries, they nonetheless account for much of the recent global growth in common ownership, even in markets where their direct stakes remain modest.

4.2.1 Role of the Big Three and Other Institutional Investors

Table 2 presents the percentage of firms in each country whose largest shareholder falls into one of five categories: an individual or family, a Big Three institutional investor, a non-Big Three institutional investor, a government institution, or another type of investor (primarily venture capital, private equity, or research firms). The table also reports the geographic origin of the largest shareholder (domestic, US foreign, or non-US foreign). A striking observation from Table 2 is the dominant role played by the Big Three asset managers in certain economies, particularly in the United States and Ireland and to a lesser extent in the Netherlands, Switzerland, and the United Kingdom.¹⁵ In the U.S., these three institutional investors collectively account for 30.81% of the total ownership in publicly traded firms, making them the most influential shareholders in the American market.

This pattern is also highlighted by the blue shading in Table 1 of the columns that report the decomposition of average pairwise κ into contributions from the Big Three and other investors. The values indicate how much of a country’s observed universal ownership can be attributed to each group with darker blue shading indicating a larger contribution to pairwise κ . The Big Three

¹⁵Table 4 provides a broad snapshot of ownership structures across various types of investors, including institutional investors, family owners, and government entities for all firms in each economy as of 2019Q4.

dominate in the U.S. and are influential in some developed markets, but non-Big Three investors play a relatively more important role in most other countries.

Figure 3A, 3B, and 3C show the fraction of firms in each country whose largest shareholder is either an individual or family, a Big Three institutional investor, a non-Big Three institutional investor, a government institution, or any other type of investor from 2005 to 2019. In the U.S., the share of firms where the largest owner is one of the Big Three asset managers has risen sharply, reaching nearly 40% by 2019, up from just less than 3% in 2005. This growth highlights the increasing dominance of the largest institutional investors. Meanwhile, the share of non-Big Three institutional investors as the largest owners declined from 65% of public companies in 2005 to only 30% in 2019, with a particularly sharp drop in 2009 due to the aforementioned BlackRock-BGI merger. The share of individuals and families as the largest owners declined more steadily, decreasing from around 30% in 2005 to below 20% in 2019.

In contrast, the average ownership structure is more stable over time in the Euro Area. The share of firms with institutional investors as the largest owner has grown but remains lower than in the U.S., reaching around 30% by 2019. Family ownership is also more persistent, declining only slightly from 40% in 2005 to about 35% in 2019. Government ownership is considerably higher than in the U.S., maintaining a steady 5% share across the years.

From Table 2 it is apparent that the prominence of the Big Three is slightly lower but still substantial in Ireland, where they represent 24% of total ownership.¹⁶ Beyond the U.S. and Ireland, the footprint of the Big Three remains significant, albeit to a lesser extent. In European countries such as the Netherlands and Switzerland, their ownership share hovers around 8%, reflecting the broader trend of rising institutional investment in public equities. However, despite their global reach, the Big Three do not dominate ownership structures in most countries. Instead, non-Big Three institutional investors emerge as the largest shareholders in the majority of economies. Figures 3B and 3C further illustrate this pattern. Although the share of the Big Three as the largest owners is growing in all of the highlighted countries, their share remains relatively small. Only in the United Kingdom and Germany does the share of companies with a Big Three investor as the largest owner approach 10%. Overall, the shares shown in Figures 3B and 3C are very stable compared to those of the US, perhaps the only significant change being in Japan where the rise of various non-Big Three institutional investors crowded out individuals and families as the

¹⁶Ireland has a relatively small number of publicly listed firms, which amplifies the influence of the Big Three relative to other markets.

largest owners over time.

Table 2 further shows that in Germany, Japan, and several smaller European markets domestic institutional investors or state-controlled funds hold the largest stakes in publicly traded firms. Exceptions to this pattern include France, Greece, and South Korea, where the presence of institutional investors (either domestic or foreign) is comparatively weaker, and other forms of ownership take precedence.

Figures 4A–4C complement the findings based on the ownership share of the largest investor and report the mean ownership by the top five largest shareholders of each firm by country. In the United States, the share held by the Big Three increased markedly over time while the share held by non-Big Three institutional investors declined, which highlights the growing concentration of ownership among a few large asset managers. In contrast, the Big Three remain far less prominent in the Euro Area, where domestic institutional investors continue to account for the bulk of top-five stakes. The figures also show that, despite the rise of the Big Three, their mean ownership share remains modest due to generally dispersed shareholding structures in Anglo-American economies. In most other countries, the average ownership share of the top five investors is substantially larger, reflecting much more concentrated ownership structures. Outside of the US and UK, the composition of top ownership shares is also remarkably stable over time.

However, across nearly all economies in our sample, the increase in universal and common ownership (as measured by pairwise κ) is almost entirely driven by the increasing contribution of the Big Three, while the contribution of non-Big Three institutional investors has remained remarkably stable over time. This pattern holds not only in the United States where the Big Three have established themselves as the dominant, largest owners but also in countries where their aggregate holdings are substantially smaller. Due to their diversified and overlapping portfolios, even the modest stakes by the Big Three led to a substantial increase in pairwise κ across firms in many economies. This is because the contribution of an investor to κ is driven by two key factors: (i) the number of firms in which the investor holds a stake, and (ii) the size of the stake in each firm. Figures 4A–4C provide partial insights into the second component by showing the average ownership of the top five investors per firm. However, this view is limited, as it only includes stakes among the top five shareholders and excludes smaller but potentially widespread holdings.

The growing influence of the Big Three is evident in Figures 5A–5C (and A4A–A4C in the appendix) which show the Big Three’s contribution to universal ownership over time for all firms

(and for top-tercile firms). In the United States, the Big Three account for a substantial and growing share of common ownership. Their contribution to Banzhaf-weighted κ rises from about 0.02 in 2005 to 0.27 by 2019 for all firms, and exceeds 0.55 when focusing on the largest firms. This trend underscores the central role of the Big Three in driving ownership concentration and portfolio overlap in U.S. equity markets. Similarly, the increase in κ in the Euro Area (particularly in France and Germany) and in Australia is primarily driven by the rising influence of the Big Three, while the contributions to Banzhaf-weighted κ of non-Big Three holdings have remained relatively stable. In Japan, both Big Three and non-Big Three holdings contribute in roughly equal parts to the increase in universal ownership. In contrast, in the United Kingdom, both for all firms and for top-tercile firms, Big Three and non-Big Three contributions to universal ownership have moved in opposite directions, thereby canceling out their aggregate effect on universal ownership. Increases in the contribution to universal ownership by the Big Three have been offset almost one-for-one by corresponding decreases in the contribution of non-Big Three investors.

Thus, even though by the end of our sample period the Big Three held only modest stakes outside the U.S. (e.g., for the average firm in the Euro Area, they held a combined stake of 2.43% as top-five shareholders) their extensive presence across a broad swath of the corporate sector gives rise to a dense network of overlapping ownership that meaningfully contributes to κ . It is the network structure of the Big Three’s holdings, rather than the depth of their control over any single firm, that underpins their central role in shaping ownership overlap globally.

4.2.2 Largest Owners by Country

Table 3 reports the largest shareholders based on the number of firms they hold in their portfolio, providing insights into the influence of different investors. The data again document the dominance of the Big Three in the United States where Vanguard, BlackRock, and Fidelity each hold around 3,000 firms in their respective portfolios amounting to between 4 and 8 percent of total market capitalization. The Big Three hold small stakes of around 0.5% in a vast number of firms, but their presence is less pronounced in larger individual stakes, with Vanguard and BlackRock emerging as the most significant among them due to their sheer asset size. Both Vanguard and BlackRock hold stakes exceeding 5% in more than 40 percent of US companies. In contrast, State Street holds such large stakes in only slightly more than 5 percent of companies despite holding more than 4 percent of the total market capitalization.

In the Euro Area, ownership is more fragmented across the largest five owners compared to the U.S., with a mix of local institutional investors and international asset managers. While BlackRock and Vanguard maintain their first- and second-place presence in the Euro Area at large as well as in Germany and France, they are not as dominant as in the United States. Instead, national financial institutions, such as Norges Bank, DWS, and Amundi in Germany, and Amundi and MFS in France, hold significant stakes. This suggests that while global asset managers play a role, the ownership landscape in the Euro Area remains influenced by domestic institutional investors, reflecting historical governance structures and perhaps also regulatory preferences for local financial control.

BlackRock is nearly ubiquitous among the top owners across countries, with Vanguard also widely present but generally in fewer firms and with markedly smaller stakes. State Street appears even less frequently among the largest holders. In the Euro Area, for example, BlackRock is among the top five owners in 38.17% of firms, narrowly ahead of Norges Bank Investment Management (37.16%) and Amundi (36.49%). However, BlackRock tends to hold larger stakes on average and across many more firms, especially when looking at stakes exceeding 5%. Vanguard, by contrast, holds a lower percentage of the Euro Area's total market capitalization (2.54%) than BlackRock (4.58%) and has far fewer instances of large (>5%) stakes. This pattern reinforces the distinction between the spread and the depth of ownership, especially between BlackRock on the one hand and Vanguard and other large local asset managers on the other hand. It also largely holds in Germany, France, and Italy as well as outside the Euro Area, such as in the United Kingdom, Australia, and Brazil.

More specifically, in the United Kingdom, the Big Three are influential, but local asset managers such as Legal & General (L&G) and Schroder also play a substantial role, resulting in a more diversified ownership structure. The influence of the Big Three is generally smaller in the UK compared to the US, but they still have a sizable presence, especially BlackRock which holds stakes exceeding 5% in 14.54% of companies. Only Schroder at 8.77% rivals BlackRock's corporate influence. The same is true for Japan where the largest asset manager is Nomura, but BlackRock and Vanguard are a close second and third, while Nikko and Daiwa round out the top 5 universal owners. The situation in Australia is similar to the Euro Area, with Vanguard, BlackRock, and NBIM owning relatively small parts (especially when compared to the U.S.) of many publicly listed companies.

The widespread presence and significant average stake sizes of BlackRock and Vanguard across a broad range of countries help explain their central role in driving the global rise of common ownership shown in Figures 5A–5C. Their ownership combines both breadth, holding shares in a large number of firms across markets, and intensity, maintaining sufficiently large stakes in those firms to meaningfully contribute to common ownership. This dual characteristic is particularly important. Even when their individual holdings fall below traditional thresholds for control, the aggregate effect of BlackRock and Vanguard’s portfolios, spanning thousands of firms with meaningful equity positions, systematically raises pairwise ownership measures. Their expansive and deep investment footprint thus accounts for a significant share of the upward trend in common ownership documented across many advanced economies.

Finally, government ownership plays a particularly significant role in China, India, South Africa, and Italy, where governmental institutions are the most important owners. However, the scale of their involvement varies. China stands out, with 2,598 firms under government-linked ownership, contrasting sharply with Italy, where only 15 firms are part of the government portfolio but the government’s stake nonetheless amounts to 11.29% of market cap. In South Africa, the South African Public Investment Corporation (PIC), a state-owned entity, is the largest investor, and India even features two major government investment arms (Government of India and Life Insurance Corporation of India) alongside another public-private joint venture between SBI and Amundi in third place.

4.2.3 Persistence of Family and Individual Ownership

Another key theme of Table 2 is the continued relevance of family and individual ownership, which remains a defining characteristic of corporate governance in many regions. While institutional investors have become increasingly dominant in global capital markets, families and individuals still play a significant role in corporate ownership across a range of economies such as Italy, Spain, and India, where family-controlled conglomerates remain a staple of the business environment.

However, there are notable outliers where individual or family ownership is relatively weak. Norway and Indonesia stand out as examples where this form of ownership is less prevalent, likely due to the presence of strong sovereign wealth funds or other institutional arrangements that consolidate ownership under state control or institutional investors. A particularly interesting case

is Norway, where the country’s massive sovereign wealth fund plays a critical role in corporate ownership.¹⁷

4.2.4 Other Geographic Patterns of Ownership Structure

Table 2 also reveals important geographic patterns in ownership structures. In most countries, the largest owners tend to be domestic investors, reflecting a preference for local control and governance. This is particularly evident in large economies such as the U.S., China, Japan, and Germany, where domestic investors—whether institutional, corporate, or individual—dominate the ownership landscape. However, there are key exceptions, especially in smaller open economies such as Ireland, the Netherlands, and Switzerland. In these countries, foreign investors play a much more prominent role, often due to the international integration of their financial markets and the relatively small size of their domestic investment pools.

Proximity also plays an important role in shaping ownership structures. The U.S., as the world’s largest financial market, has a significant ownership presence in neighboring countries such as Canada, Mexico, and even the United Kingdom and Ireland. Similarly, European countries tend to have significant cross-border ownership within the region, particularly in smaller economies with deep financial ties to larger markets. For example, the Netherlands and Switzerland have substantial ownership stakes held by foreign institutional investors, reflecting their status as financial hubs with strong capital market integration.

Another noteworthy trend is the influence of Chinese investors, particularly in Asia. Several Asian economies have large ownership stakes held by Chinese investors, raising questions about the broader implications of China’s growing financial footprint. In particular, Hong Kong represents a unique case where ownership patterns are shaped by both Chinese and U.S. investors, reflecting the city’s dual status as a global financial center and a gateway to mainland China.

Table 2 supports this pattern by confirming that foreign ownership follows similar geographic lines. Proximity continues to play a key role, particularly in Europe, where smaller economies like the Netherlands and Switzerland attract substantial non-domestic investment. Meanwhile, China’s growing economic influence is also reflected in the ownership patterns of several Asian

¹⁷A question that emerges from Table 2 is whether Norway’s sovereign wealth fund should be classified under the category of non-Big Three institutional investors or as a government entity. Given that it operates with a high degree of autonomy but is ultimately state-owned, it blurs the traditional lines between institutional and government ownership.

countries. Chinese investors, particularly state-affiliated entities, have a noticeable presence in Hong Kong and other regional markets, raising questions about the extent of China’s financial footprint abroad.

The broader patterns observed in Table 2 suggest that capital market integration plays a fundamental role in shaping ownership structures. In Europe, the presence of significant non-U.S. foreign investors across different countries highlights the deep interconnections of the region’s financial markets. This integration is driven by a combination of regulatory harmonization, cross-border investment flows, and the increasing presence of multinational institutional investors. Similarly, in Asia, the growing influence of Chinese investors suggests that regional financial integration is also playing a role in shaping corporate ownership patterns.

The combined Figures 3 and 4 provide a graphical representation of the distribution and concentration of ownership across different countries and firms and highlight the distinction between countries with dispersed ownership structures and those where ownership remains concentrated. They visually confirm the cross-country variation documented in Tables 2 and 4, with lower ownership concentration in Anglo-Saxon economies and higher concentration in markets such as France, China, and some parts of Europe where family, government, or institutional blockholders retain substantial control.

Overall, these results suggest that while the Big Three play a critical role in some markets and are the driving force behind the increase in common ownership, they are not the only force in global ownership. Instead, a mix of institutional investors, family conglomerates, and government entities continue to shape corporate control across different economies. Additionally, geographic proximity and capital market integration significantly influence ownership structures, reinforcing regional patterns of investment.

4.3 Inter- and Intra-Industry Common Ownership

A crucial dimension of common ownership that bears directly on its economic and policy implications is whether overlapping ownership occurs primarily within industries or across them. Intra-industry common ownership, which occurs when investors hold stakes in multiple competing firms within the same sector, has drawn the most attention in the literature due to its potential to soften competition and undermine market efficiency. In contrast, inter-industry common ownership, while less explored, may reflect broader diversification strategies and could influence

corporate behavior through indirect channels, such as governance spillovers or shared investor objectives. The literature on anticompetitive effects of common ownership has almost exclusively focused on intra-industry levels of common ownership, with the exception of [Azar and Vives \(2021a,b\)](#). Distinguishing between these two forms of ownership is therefore essential for understanding both the mechanisms through which common ownership operates and its potential consequences. This section examines how intra- and inter-industry common ownership vary across countries and over time, and how these patterns inform our broader understanding of ownership concentration in the global economy.

Table 1 separately reports common ownership both within and across industries. Intra- and inter-industry common ownership (as measured by average pairwise κ within the same industry and across different industries, respectively) are essentially the same on average as universal ownership for the United States. However, this is again a case of American exceptionalism and is not true for other countries. As shown in Figures 6A, 8B, and 6A, intra-industry κ is generally substantially higher in all major economies. Ownership is more overlapping within industry than across industry, potentially a result of industry specialization of asset management companies.

The pattern of increasing common ownership is also persistent across industries in several countries, as shown in Figures 7A, 7B, and 7C. As before, this trend is most pronounced in the United States, where industries that initially had high levels of common ownership also continued to have high levels in later years. This persistence of common ownership by industries also holds for other economies where the level of common ownership increased less steadily.

Finally, our analysis so far has primarily focused on cross-country differences. However, there is also substantial within-country variation across industries. Table 5 reports the ten industries with the highest levels of intra-industry common ownership for a selected number of countries. As we documented before, the U.S. , the United Kingdom, and China have many industries with high levels of common ownership compared to most other countries, but there are nonetheless several industries in other countries whose average industry pairwise profit weights rival those of the most commonly owned industries in the U.S. and the United Kingdom.

5 Case Studies

To complement the broad patterns documented across countries, time, firms, industries, and owners, we now turn to a set of case studies that illustrate distinct mechanisms and country-specific dynamics behind common ownership. While our empirical analysis so far has focused on global and country averages, the following case studies provide a more granular perspective on how different types of investors (including state actors and large asset managers) shape the landscape of common ownership in particular contexts. By highlighting salient examples such as China’s state-led global investment strategy and Japan’s central bank-driven ETF purchasing program, we shed light on the heterogeneity of ownership channels and the strategic motivations that may underlie common ownership across different regions and institutional settings.

5.1 Global Footprint of Chinese Investors

As of the final quarter of 2019, Chinese investors had allocated a remarkable \$498.2 billion to non-Chinese common stocks globally, representing 1% of the global market capitalization of non-Chinese firms. Notably, 79.5% of these funds originated from the Chinese government, underscoring its critical role in shaping China’s international financial flows and strategic investments.

Chinese foreign direct investment (FDI) is distributed unevenly across continents.¹⁸ Asia emerges as the predominant destination, attracting \$442.6 billion in Chinese FDI, followed by Europe with \$30.7 billion, North America with \$9.0 billion, Latin America with \$7.3 billion, and Africa with \$3.9 billion. When focusing solely on government-led investments, the distribution shifts slightly: Asia retains its dominance with \$370.8 billion, Europe follows with \$12.0 billion, and Latin America and Africa remain key destinations with \$7.3 billion and \$3.9 billion, respectively. Oceania replaces North America in the top five, with \$1.7 billion of government-led investments directed there.

The preferences of private Chinese investors diverge from those of the government, as reflected

¹⁸For this analysis, we exclude China from our sample of countries and group the remaining 48 countries into the following continents: Africa (Egypt, Morocco, and South Africa), Asia (Hong Kong, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam), Europe (Austria, Belgium, Croatia, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Poland, Romania, Russian Federation, Spain, Sweden, Switzerland, and the United Kingdom), Latin America (Brazil, Chile, Colombia, Mexico, and Peru), Middle East (Israel, Jordan, Kuwait, Oman, Saudi Arabia, and the United Arab Emirates), North America (Canada and the United States), and Oceania (Australia and New Zealand).

in the geographic concentration of their investments. The primary destinations for private Chinese capital include Hong Kong, the United Kingdom, and the United States, which receive \$68.5 billion, \$11.6 billion, and \$8.0 billion, respectively. Together with France (\$3.2 billion) and Germany (\$2.8 billion), these five countries account for 92.3% of private Chinese investments worldwide. In contrast, the Chinese government channels its investments toward destinations such as Hong Kong (\$360.6 billion), Germany (\$6.7 billion), Singapore (\$6.5 billion), Brazil (\$6.5 billion), and South Africa (\$3.9 billion), which collectively account for 97.0% of government-led FDI. While the capital flows to Hong Kong may underline the importance of geographical proximity, the significant private Chinese investment in the United Kingdom and the United States likely reflects their preference for established capital markets and industrialized economies over resource-rich emerging economies.

Regionally, Asia’s dominance in Chinese investment flows is unequivocal. Hong Kong alone attracts \$429.1 billion of Chinese FDI, the majority of which (\$360.6 billion) is government-driven. Singapore and Taiwan follow as key destinations, receiving \$7.1 billion and \$3.4 billion, respectively. In Europe, Chinese FDI is heavily concentrated in the United Kingdom, Germany, and France, which together account for 94.1% of the region’s total. While the United Kingdom predominantly relies on private Chinese investments, government funds play a substantial role in both Germany and France.

Latin America and Africa exhibit different dynamics, as Chinese FDI in these regions is almost entirely government-led. In Latin America, Brazil stands out as the principal recipient with \$6.5 billion, followed by Peru with \$0.79 billion. Similarly, in Africa, South Africa emerges as the dominant destination, receiving \$3.9 billion of exclusively government-driven investments. Oceania, while receiving less overall, presents a mix of private and government-led investments, with Australia as the primary beneficiary. Of the \$3.8 billion directed to Australia, 44.7% originates from the Chinese government.

5.2 Japan’s ETF Purchasing Program

In October 2010, the Bank of Japan (BoJ) introduced a temporary program to indirectly purchase Japanese assets through exchange-traded funds (ETFs) as part of its Comprehensive Monetary Easing (CME) program. This policy aimed to revitalize Japan’s deflationary economy and reduce the risk premia of risky assets. The program started with a monetary base of 0.45

trillion yen, proportionally allocated to ETFs tracking the Nikkei 225 index and the Tokyo Stock Price Index (TOPIX), and reached 1.5 trillion yen by the end of March 2013.

Following Prime Minister Shinzo Abe's election in December 2012, Abe appointed Haruhiko Kuroda as BoJ governor in April 2013, instructing him to implement quantitative easing with a target of 2% inflation. Hence, Kuroda replaced the CME with the Quantitative and Qualitative Monetary Easing (QQE) program and expanded the monetary base through more aggressive asset purchases via ETFs ([Shirai, 2018](#); [Charoenwong et al., 2021](#)).

While the new BoJ's ETF purchasing program continued to be based on ETFs tracking the Nikkei 225 index and the TOPIX, it incorporated ETFs tracking the JPX-Nikkei 400 in November 2014. According to [Harada and Okimoto \(2021\)](#), the amount available for purchases of ETFs under this new program was allocated using a loading of approximately 53% on the Nikkei 225, 42% on the TOPIX, and 4% on the JPX-Nikkei 400 until August 2016. It is worth noticing that the total amount of purchases of ETFs following these major Japanese indexes steadily increased since October 2010 reaching 3 trillion yen in August 2016.

In September 2016, the BoJ changed the rule used to conduct the ETF purchases program and the amount to be invested in the ETFs tracking the three indexes from 3 trillion yen to 5.7 trillion yen per year. The new allocation rule emerged as a response to many concerns from market participants, arguing that existing purchasing rules assigning higher weights to ETFs following the Nikkei 225 index had distorted stock market prices due to the nature of the index. The Nikkei 225 index is a price-weighted index that uses a similar calculation method to the Dow Jones Industrial Average in the US. Hence, it may include small-cap firms with higher weights due to their relatively higher prices, and those weights could have led to capital misallocation. Since the TOPIX is a capitalization-weighted index of all companies listed on the First Section of the Tokyo Stock Exchange that uses a similar calculation method to the S&P500 in the US, and thus could be considered a better representation of the Japanese stock market than the Nikkei 225 index, the BoJ decided to significantly increase its TOPIX ETF holdings under the new allocation rule: 2.7 trillion yen were allocated to the TOPIX ETFs, and the remaining 3.0 trillion yen were proportionally allocated to the TOPIX, the Nikkei 225, and the JPX-Nikkei 400. In July 2018, the allocation of money to the TOPIX increased even more. A new rule allocated 4.2 trillion yen to the TOPIX ETFs, and the remaining 1.5 trillion yen were proportionally allocated to the TOPIX, the Nikkei 225, and the JPX-Nikkei 400 ETFs ([Shino et al., 2022](#)).

The documented increase in the amount invested by the BoJ in ETFs since October 2010, especially with the replacement of the CME with the QQE program in 2013, along with the two significant changes in the BoJ’s ETF purchasing rules that took place in September 2016 and July 2018, helps explain the observed patterns in our measures of universal ownership in Japan. While our measure of universal ownership has been increasing since 2010Q4, it shows only mild growth through 2013Q1. Then, it increases more after the implementation of the QQE program in 2013Q2 until 2016Q3. The observed patterns during this period are likely because the BoJ’s purchases of ETFs were relatively small in monetary terms initially and mainly focused on the Nikkei 225 index constituents, which may have included small-cap firms with higher weights due to their relatively higher stock prices. These small-cap firms may have a different set of shareholders than larger firms, and thus, the ETF purchasing program did not largely contribute to the increase in universal ownership during this period. The upward trend, however, is much more pronounced after 2016Q3. This significant shift is likely due to a notable increase in the monetary base for ETF purchases and the BoJ’s purchasing rule changes in September 2016 and July 2018, allocating more capital to purchase ETFs following the TOPIX, which better captures the most well-performing companies listed in the Japanese stock market. It is important to mention that we have only shown common ownership trends using the full sample for Japan; if we restricted our data to the largest firms, magnitudes would clearly be much more significant.

Although the BoJ does not disclose its specific holdings, we use our data to examine the evolution of holdings by the largest Japanese institutional investors offering ETFs related to the TOPIX and Nikkei 225 indices, known as the “Japanese Big Three”: Nomura Asset Management Co., Ltd., Nikko Asset Management Co., Ltd., and Daiwa Asset Management Co., Ltd. We also examine the holdings of BlackRock, Inc., which likely offers one of the cheapest ETFs associated with these indexes through BlackRock Japan Co., Ltd. If the BoJ’s ETF purchasing program contributed to the documented increase in common ownership in Japan, one could expect that it occurred at least through these very large institutional investors in Japan.

We calculate the value of the holdings of each of the Japanese Big Three and BlackRock in every quarter. Then, we divide those values by the sum of the market capitalization of all the firms in our sample of Japan. Hence, we estimate the percentage of the Japanese market capitalization held by each of these investors. Once again, we also display percentages using a balanced panel of firms to mitigate the noise induced by changes in our firm sample composition

over the sample period. Figure A3 in the appendix shows a significant increase in the value of the holdings of these investors starting in 2013, the year of the introduction of the BoJ’s QQE program, which is related to a more aggressive purchase of ETFs. This is particularly true for Nomura and BlackRock. Table 3 further supports the notion that the stock ownership by these four institutional investors might explain the rise of common ownership in Japan.

6 Institutional Determinants of Common Ownership

The descriptive analysis in Section 3 established that common and universal ownership are global phenomena, rising steadily over time, especially concentrated among large firms and in countries with developed capital markets, with much of the increase driven by the Big Three. We documented sharp cross-country variation, as well as strong within-country patterns related to firm size, industry, and the presence of large institutional investors such as the Big Three. We now move from descriptive statistics to regression analysis, quantifying the relationship between common ownership and firm- and country-level characteristics.

Table 6 presents regression results that explore the firm-level drivers of common and universal ownership across the full sample of countries over the period 2005–2019. These regressions highlight how structural firm characteristics are associated with the extent to which a given firm is embedded in overlapping ownership networks. Consistent with the patterns documented in Section 3, the results show that firm size (as measured by market capitalization) is by far the strongest predictor of both universal and common ownership. Larger firms are significantly more likely to be commonly owned, with coefficients that are economically large and statistically significant across all specifications.

Beyond firm size, the results also reveal a strong negative relationship between ownership concentration (measured by the C5 index) and common ownership. Firms with more concentrated ownership structures tend to exhibit lower levels of κ , which is intuitive: blockholders reduce the likelihood that shares are held by overlapping diversified investors. In contrast, holdings by the Big Three asset managers are positively associated with common ownership. Even after controlling for firm size and other covariates, firms with higher Big Three ownership are substantially more likely to exhibit overlapping ownership with other firms, thereby emphasizing the central role of these large passive investors in driving common ownership dynamics.

The regression also highlights that firms with more individual or family ownership tend to have lower levels of common ownership, while government and foreign investor ownership are associated with more modest and sometimes inconsistent effects. These findings reinforce the descriptive results in Section 4.2 and underscore the importance of investor type and diversification strategy in shaping firm-level variation in common ownership.

While firm-level characteristics such as size and ownership concentration explain a substantial share of within-country variation in κ , they do not account for the stark cross-country differences observed in both levels and trends. In what follows, we turn to an analysis of how country-level institutional, legal, and market characteristics are related to the prevalence of common ownership. In particular, we run OLS regressions pooling observations over the 2005-2019 period to analyze how firm and country characteristics are associated with universal and common ownership. Our baseline specification is as follows:

$$\bar{\kappa}_{f,c,t}^{Banzhaf} = \alpha_0 + \beta' X_{f,c,t} + \delta' Z_{c,y} + \alpha_r + \alpha_{p4} + \alpha_t + \epsilon_{f,c,t} \quad (2)$$

$\bar{\kappa}_{f,c,t}^{Banzhaf}$ is the equal-weighted average of the weights that firm f places on all the $N - 1$ firms in country c in quarter t . More formally, we define $\bar{\kappa}_{f,c,t}^{Banzhaf} = \frac{1}{N_{c,t}-1} \sum_{g \neq f} \kappa_{fg,c,t}^{Banzhaf}$. We refer to this as “equal-weighted kappa (UO).” We also calculate a slightly different version of this, focusing only on the weights assigned to other firms within the same country and industry in a given quarter; we refer to this as “equal-weighted kappa (CO).” The vector $X_{f,c,t}$ corresponds to time-varying firm-level characteristics (the ownership by the five largest shareholders, the logarithm of market capitalization in USD, and the logarithm of firm age). The vector $Z_{c,y}$ contains yearly information on GDP per capita (logarithm of GDP per capita), which we take as a summary measure of a country’s development. Finally, we include regional fixed effects (α_r),¹⁹ industry fixed effects based on the four-digit TRBC codes (α_{p4}), and year-quarter fixed effects (α_t). Our final regression sample is based on 48 countries. We do not include Taiwan in our regressions because the World Bank does not provide GDP per capita data for this country.

¹⁹Regions are defined as follows: Africa (Egypt, Morocco, and South Africa), Asia (China, Hong Kong, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam), Europe (Austria, Belgium, Croatia, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Poland, Romania, Russian Federation, Spain, Sweden, Switzerland, and the United Kingdom), Latin America (Brazil, Chile, Colombia, Mexico, and Peru), Middle East (Israel, Jordan, Kuwait, Oman, Saudi Arabia, and the United Arab Emirates), North America (Canada and the United States), and Oceania (Australia and New Zealand).

6.1 Antitrust Laws, Market Entry Regulation, and Labor Laws

The extent of common ownership across countries is shaped by a combination of legal features and market characteristics. We first examine these regulatory factors and their impact on common ownership.

Table 7 presents regression results examining the relationship between universal (UO) and common ownership (CO) and antitrust laws across countries. We use the competition law index (CLI) of [Bradford and Chilton \(2018\)](#) which ranges from 0 to 1 and where values closer to 1 indicate stricter competition policies. The CLI consists of two major components: authority and substance. The authority component measures enforcement strength, while the substance component assesses the scope of legal provisions on abuse of dominance, anticompetitive agreements, and merger control. As shown in Table 7, each of these three subcomponents affects ownership structures differently. The regression has firm-quarter as the unit of observation uses regional, industry, year-quarter fixed effects such that the remaining variation is across countries.

The key finding is a negative correlation between antitrust law strength and both CO and UO, indicating that stronger competition regulations are associated with lower overlapping ownership between firms. Countries with stronger antitrust frameworks tend to have lower levels of common and universal ownership, suggesting that greater regulatory oversight constrains investor influence over multiple firms. Specifically, an increase in the CLI is linked to a 0.0234 decrease in universal ownership, significant at the 10% level, and a 0.0208 decrease in CO, though this result is not statistically significant.

Breaking down the components of antitrust enforcement, abuse of dominance provisions exhibit the strongest negative relationship, with a 0.0291 and 0.0306 decrease in UO and CO, respectively, both significant at the 5% level. This suggests that stricter enforcement against market dominance is particularly effective in curbing common ownership. Similarly, anticompetitive agreement provisions, which target collusion and cartel-like behavior, are associated with a 0.0328 and 0.0380 decrease in UO and CO, both statistically significant at the 5% and 1% levels, respectively.

Merger control provisions display a more complex effect. While stronger merger regulations are generally expected to limit ownership concentration, the results indicate that in some cases, common ownership may act as a substitute for mergers in highly regulated environments. Specifically, stricter merger rules are associated with an increase in CO of 0.0312**, significant at the 1% level, implying that firms may adopt common ownership structures as an alternative to full-scale M&A

in jurisdictions with strong merger restrictions.²⁰ This finding highlights the strategic adaptation of ownership structures in response to competition policies.

A robustness check of Table 7 examines the effect of removing the U.S. from the sample, given its exceptionally high levels of common ownership. When U.S. firms are excluded, only abuse of dominance regulations remain statistically significant, suggesting that outside the U.S., common ownership is primarily constrained by policies restricting dominant shareholder influence rather than broader competition law measures.

Table 8 complements the findings on antitrust laws by demonstrating that barriers to market entry also contribute to higher levels of common ownership. Specifically, it examines the relationship between market entry regulations and common ownership by analyzing the number of procedures and the time required to start a business in different countries. The key explanatory variables include the logarithm of the number of administrative procedures and the number of days needed to start and formally operate a business.

The results indicate that more complex entry regulations (measured by the number of procedures and time required) are positively associated with higher levels of universal and common ownership. Specifically, a one-unit increase in the log number of procedures is associated with an increase of 0.0215 in universal and 0.0229 in common ownership, both statistically significant at the 5% and 1% levels, respectively. Similarly, an increase in the log number of days required to start a business corresponds to a smaller but still significant increase in universal (0.0097) and common ownership (0.0104), both significant at the 10% level.

These findings suggest that in countries where starting a business is more cumbersome, common ownership tends to be higher. This could reflect barriers to entry limiting competition, which in turn increases the concentration of ownership among a few large institutional investors. The results of Table 8 relate to recent work showing that common ownership could preclude other firms from entering the market (e.g., [Newham et al. \(2019\)](#), [Xie and Gerakos \(2020\)](#)), as well as to evidence in support of a “quiet-life” hypothesis ([Bertrand and Mullainathan, 2003](#)) in less competitive environments ([Giroud and Mueller, 2010, 2011](#)) because “common owners are more willing to tolerate managerial slack and the resulting productive inefficiency at their portfolio firms because doing so also leads to less intense competition for the other firms in which they hold

²⁰Anticompetitive agreements and merger control provisions are included in the regression separately, as abuse of dominance laws are highly correlated with both measures (0.62 and 0.73, respectively), while anticompetitive agreements and merger control provisions have a lower correlation (0.16).

shares” (Antón et al., 2023b).

Labor laws are another important legal aspect shaping ownership overlap. Table 9 shows that, using indices developed by Botero et al. (2004), stronger labor laws are associated with lower levels of common and universal ownership. Specifically, employment protection laws have a significant negative relationship with common ownership, with a coefficient of -0.0461 (significant at the 5% level), suggesting that stricter job security laws may reduce the ability of institutional investors to consolidate ownership across firms. Similarly, collective labor relations which capture union power and collective bargaining rights, also exhibit a negative relationship, with a coefficient of -0.0531 (significant at the 5% level). This aligns with theories suggesting that strong labor protections may limit corporate restructuring and ownership consolidation, thereby reducing common ownership levels. However, social security provisions, which capture government-funded worker benefits, show a positive but statistically insignificant relationship with common ownership, implying that firms may rely more on state-funded benefits than on employer-driven worker protections. Stronger employee protections thus are associated with lower ownership overlap, potentially because they increase costs for investors seeking to exert governance control across multiple firms. Countries with more rigid labor markets may see less common ownership, as shareholders have limited ability to influence employment decisions across firms.

6.2 Investor Protection

We now examine the relationship between investor protection, disclosure requirements, and common ownership across countries to show how legal safeguards and reporting requirements shape corporate ownership structures and investor influence.

Table 10 examines the role of investor protection laws in shaping common ownership using self-dealing Djankov et al. (2008) and creditor rights indices (Djankov et al., 2007). The Anti-Self-Dealing Index, which measures the strength of laws preventing insider transactions, is positively associated with common ownership, with a coefficient of 0.0361 (significant at the 1% level). This suggests that stronger investor protections encourage more dispersed but overlapping ownership, as legal frameworks prevent controlling shareholders from expropriating minority investors. Similarly, ex-ante private self-dealing provisions, which regulate conflicts of interest before transactions occur, show a positive relationship (0.0287, significant at 5%), reinforcing the idea that stronger legal protections create an environment where diversified institutional ownership can thrive.

Conversely, ex-post self-dealing provisions, which address insider conflicts after they occur, do not show a significant effect, suggesting that preventative investor protections are more impactful than reactive measures. Meanwhile, creditor rights laws, which regulate debt-holder protections, exhibit a small and statistically insignificant negative effect, indicating that these laws may not directly affect common ownership trends.

Table 10 highlights an important tension in ownership structures with respect to Table 9. While strong labor protections reduce common ownership by limiting investor influence, robust investor protections appear to promote it by facilitating institutional investment in firms. This suggests that regulatory frameworks shape ownership concentration through multiple, sometimes opposing, channels.

In recent years, environmental, social, and governance (ESG) requirements have become increasingly important for investors, as regulatory bodies, asset managers, and stakeholders emphasize sustainability, corporate accountability, and long-term risk management. Institutional investors, particularly large asset managers and pension funds, have integrated ESG factors into their investment strategies to mitigate financial risks related to climate change, social inequality, and corporate governance failures. Additionally, growing demand from socially responsible investors and regulatory pressures has led firms to adopt more transparent ESG reporting practices. As a result, ESG compliance has become a key factor in investment decision-making, influencing capital allocation, shareholder activism, and corporate governance policies worldwide.

Table 11 explores how mandatory ESG disclosure regulations affect common ownership. The results indicate that mandatory ESG disclosure (MESGD) has a generally weak and statistically insignificant effect on common ownership, suggesting that the introduction of these regulations does not substantially alter the investment behavior of large institutional shareholders. However, when differentiating by the issuer of the mandate, a notable effect emerges. Government-led ESG disclosure requirements are associated with a significant decrease in common ownership (-0.0137 for UO, -0.0168 for CO, both significant at the 5% level). This suggests that state-imposed ESG regulations may deter ownership concentration, potentially by increasing compliance costs or influencing investment preferences.

In contrast, stock exchange-imposed ESG disclosure requirements show no significant relationship with common ownership, implying that privately initiated sustainability mandates do not disrupt institutional investment patterns. Similarly, the method of ESG disclosure implementa-

tion, whether introduced all at once or gradually, does not yield significant coefficients, reinforcing the conclusion that only government-led mandates have a measurable impact.

Interestingly, among different compliance mechanisms, comply-or-explain ESG frameworks show a marginally significant negative effect on CO (-0.0109, significant at the 10% level), suggesting that flexible reporting standards may still influence investment structures. However, full compliance mandates show no significant impact, indicating that more rigid frameworks do not systematically alter ownership dynamics.

Overall, these results suggest that ESG disclosure regulations, particularly when mandated by governments, are associated with lower universal and common ownership, possibly by reshaping institutional investment incentives, by increasing firm-specific compliance burdens, or because common ownership and ESG regulations are substitutes. However, stock exchange-imposed and non-binding ESG policies appear to have minimal effects.

6.3 Political Institutions

Table 12 examines the relationship between political stability, regulatory quality, and corruption with universal and common ownership. The findings suggest that poor regulatory quality is positively associated with both universal and common ownership, with coefficients of 0.0229 and 0.0230, respectively, both significant at the 10% level. This result indicates that in countries with weak regulatory institutions, ownership is more concentrated, possibly due to reduced market competition and weaker enforcement of shareholder protections.

This result contrasts with the findings from Table 10 on investor protection, where stronger legal frameworks were associated with higher common ownership. While Table 10 suggests that common ownership flourishes in environments with strong investor rights, Table 12 implies that in environments with weak regulatory oversight, common ownership may also increase due to market distortions or rent-seeking behavior. This raises the question of whether common ownership in poorly regulated markets is a result of lobbying power or firm market dominance.

Other indicators, such as political instability and corruption, do not show statistically significant effects on common ownership. However, the positive correlation between poor regulatory quality and common ownership suggests a potential political economy explanation, where firms in unstable regulatory environments consolidate ownership as a form of risk mitigation or to exert influence over policy outcomes. This aligns with broader discussions on the role of lobbying and

market power in shaping financial markets, as highlighted in recent research by [Cowgill et al. \(2024\)](#).

7 Conclusion

In this paper, we provide the first comprehensive quantification of the global rise of common ownership, documenting its increasing prevalence across different countries and firm sizes. Our findings highlight that while common ownership is most pronounced in the United States, similar trends are observable in various economies, driven by both institutional investment growth and ownership concentration within institutional investors.

We demonstrate that common ownership is particularly concentrated among the largest firms, suggesting that its effects on market competition and corporate governance are most pronounced at the upper end of the firm size distribution in each country. The heterogeneity of common ownership structures across countries—ranging from the dominance of the Big Three in the U.S. to government-driven ownership in China and sovereign wealth fund influences in South Africa—points to the varying institutional and regulatory factors shaping these trends.

Furthermore, our empirical analysis connects common ownership patterns to key institutional frameworks, including antitrust laws, market entry regulations, labor relations, and investor protection. Our results suggest that stronger investor protection is positively associated with common ownership, while stringent labor regulations appear to reduce its prevalence. Additionally, we find evidence that political and regulatory stability influence ownership structures, with weak regulatory environments fostering higher levels of common ownership.

Our findings have significant implications for policymakers, financial regulators, and competition authorities around the world. The continued rise of common ownership raises concerns about potential anticompetitive effects, particularly in concentrated markets.

References

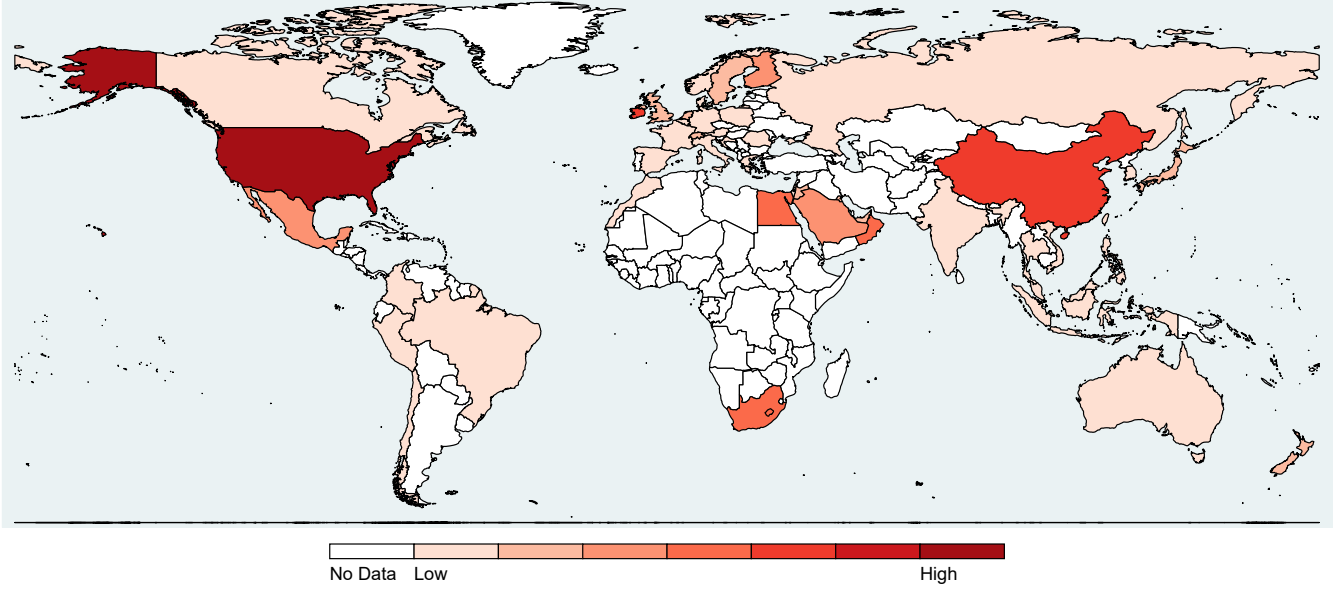
- Allen, Franklin, Junhui Cai, Xian Gu, Jun Qian, Linda Zhao, and Wu Zhu, “Centralization or decentralization? The evolution of state-ownership in China,” *SSRN Working Paper*, 2024.
- Aminadav, Gur and Elias Papaioannou, “Corporate control around the world,” *Journal of Finance*, 2020, 75 (3), 1191–1246.
- Antón, Miguel and Christopher Polk, “Connected Stocks,” *Journal of Finance*, 2014, 69 (3), 1099–1127.
- Antón, Miguel, Florian Ederer, Mireia Giné, and Bruno Pellegrino, “Mergers and Acquisitions under Common Ownership,” *AEA Papers and Proceedings*, 2023, 113, 294–298.
- Antón, Miguel, Florian Ederer, Mireia Giné, and Martin Schmalz, “Common Ownership, Competition, and Top Management Incentives,” *Journal of Political Economy*, 2023, 131 (5), 1294–1355.
- Antón, Miguel, Florian Ederer, Mireia Giné, and Martin Schmalz, “Innovation: The Bright Side of Common Ownership?,” *Management Science*, 2025, 71 (5), 3713–3733.
- Antón, Miguel, José Azar, Mireia Giné, and Luca X Lin, “Beyond the target: M&A decisions and rival ownership,” *Journal of Financial Economics*, 2022, 144 (1), 44–66.
- Azar, José, “Portfolio diversification, market power, and the theory of the firm,” *Working paper*, 2017.
- Azar, José and Xavier Vives, “General Equilibrium Oligopoly and Ownership Structure,” *Econometrica*, 2021, 89 (3), 999–1048.
- Azar, José and Xavier Vives, “Revisiting the Anticompetitive Effects of Common Ownership,” *Working paper*, 2021.
- Azar, José and Xavier Vives, “General Equilibrium Oligopoly and Ownership Structure,” *Econometrica*, 2022, 89 (3), 999–1048.
- Azar, José, Martin Schmalz, and Tecu Isabel, “Anticompetitive Effects of Common Ownership,” *Journal of Finance*, 2018, 74 (3).
- Azar, José, Yue Qiu, and Aaron Sojourner, “Common Ownership Reduces Wages and Employment,” *Available at SSRN 3954399*, 2021.
- Backus, Matthew, Christopher Conlon, and Michael Sinkinson, “The common ownership hypothesis: Theory and evidence,” *Economic Studies at Brookings*, 2019.
- Backus, Matthew, Christopher Conlon, and Michael Sinkinson, “Common ownership in America: 1980–2017,” *American Economic Journal: Microeconomics*, 2021, 13 (3), 273–308.
- Banzhaf, John F, “Weighted voting doesn’t work: A game theoretic approach,” *Rutgers Law Review*, 1965, 19 (317), 343.
- Bertrand, Marianne and Sendhil Mullainathan, “Enjoying the Quiet Life? Corporate Governance and Managerial Preferences,” *Journal of Political Economy*, 2003, 111 (5), 1043–1075.
- Botero, Juan C, Simeon Djankov, Rafael La Porta, Florencio Lopez-de Silanes, and Andrei Shleifer, “The regulation of labor,” *The Quarterly Journal of Economics*, 2004, 119 (4), 1339–1382.
- Bradford, Anu and Adam S Chilton, “Competition law around the world from 1889 to 2010: The competition law index,” *Journal of Competition Law & Economics*, 2018, 14 (3), 393–432.
- Brito, Duarte, António Osório, Ricardo Ribeiro, and Helder Vasconcelos, “Unilateral effects screens for partial horizontal acquisitions: The generalized HHI and GUPPI,” *International Journal of Industrial Organization*, 2018, 59, 127–189.
- Brooks, Chris, Zhong Chen, and Yeqin Zeng, “Institutional cross-ownership and corporate

- strategy: The case of mergers and acquisitions,” *Journal of Corporate Finance*, 2018, 48, 187–216.
- Charoenwong, Ben, Randall Morck, and Yupana Wiwattanakantang**, “Bank of Japan equity purchases: The (non-)effects of extreme quantitative easing,” *Review of Finance*, 2021, 25 (3), 713–743.
- Cowgill, Bo, Andrea Prat, and Tommaso Valletti**, “Political power and market power,” Technical Report, National Bureau of Economic Research 2024.
- Cremers, Martijn, Beni Lauterbach, and Anete Pajuste**, “The life cycle of dual-class firm valuation,” *Review of Corporate Finance Studies*, 2024, 13 (2), 459–493.
- Dai, Xin and Yue Qiu**, “Common Ownership and Corporate Social Responsibility,” *Review of Corporate Finance Studies*, 2021, 10 (3), 551–577.
- Djankov, Simeon, Caralee McLiesh, and Andrei Shleifer**, “Private credit in 129 countries,” *Journal of financial Economics*, 2007, 84 (2), 299–329.
- Djankov, Simeon, Rafael La Porta, Florencio Lopez-de Silanes, and Andrei Shleifer**, “The law and economics of self-dealing,” *Journal of financial economics*, 2008, 88 (3), 430–465.
- Ecker, Alejandro**, “vpowerrin: Stata module to calculate various voting power indices,” *Github*, 2019. Available at <https://github.com/eckeral/e/vpowerrin>.
- Ederer, Florian and Bruno Pellegrino**, “A Tale of Two Networks: Common Ownership and Product Market Rivalry,” *NBER Working Paper*, 2021.
- Edmans, Alex, Doron Levit, and Devin Reilly**, “Governance under common ownership,” *Review of Financial Studies*, 2019, 32 (7), 2673–2719.
- Elhauge, Einer**, “Horizontal Shareholding,” *Harvard Law Review*, 2016, 109 (1267).
- Faccio, Mara and Larry HP Lang**, “The Ultimate Ownership of Western European Corporations,” *Journal of Financial Economics*, 2002, 65 (3), 365–395.
- Gilje, Erik P., Todd A. Gormley, and Doron Levit**, “Who’s paying attention? Measuring common ownership and its impact on managerial incentives,” *Journal of Financial Economics*, 2020, 137 (1), 152–178.
- Giroud, Xavier and Holger M. Mueller**, “Does corporate governance matter in competitive industries?,” *Journal of financial economics*, 2010, 95 (3), 312–331.
- Giroud, Xavier and Holger M. Mueller**, “Corporate governance, product market competition, and equity prices,” *Journal of Finance*, 2011, 66 (2), 563–600.
- Gompers, Paul A, Joy Ishii, and Andrew Metrick**, “Extreme governance: An analysis of dual-class firms in the United States,” *Review of Financial Studies*, 2010, 23 (3), 1051–1088.
- Goshen, Zohar and Doron Levit**, “Common Ownership and the Decline of the American Worker,” *Available at SSRN 3832069*, 2021.
- Harada, Kimie and Tatsuyoshi Okimoto**, “The BOJ’s ETF purchases and its effects on Nikkei 225 stocks,” *International Review of Financial Analysis*, 2021, 77, 101826.
- He, Jie Jack and Jiekun Huang**, “Product market competition in a world of cross-ownership: Evidence from institutional blockholdings,” *Review of Financial Studies*, 2017, 30 (8), 2674–2718.
- He, Jie Jack, Jiekun Huang, and Shan Zhao**, “Internalizing governance externalities: The role of institutional cross-ownership,” *Journal of Financial Economics*, 2019, 134 (2), 400–418.
- Kang, Jun-Koo, Juan Luo, and Hyun Seung Na**, “Are institutional investors with multiple blockholdings effective monitors?,” *Journal of Financial Economics*, 2018, 128 (3), 576–602.
- Krueger, Philipp, Zacharias Sautner, Dragon Yongjun Tang, and Rui Zhong**, “The Effects of Mandatory ESG Disclosure around the World,” *Journal of Accounting Research*, 2024, 62 (5), 1795–1847.

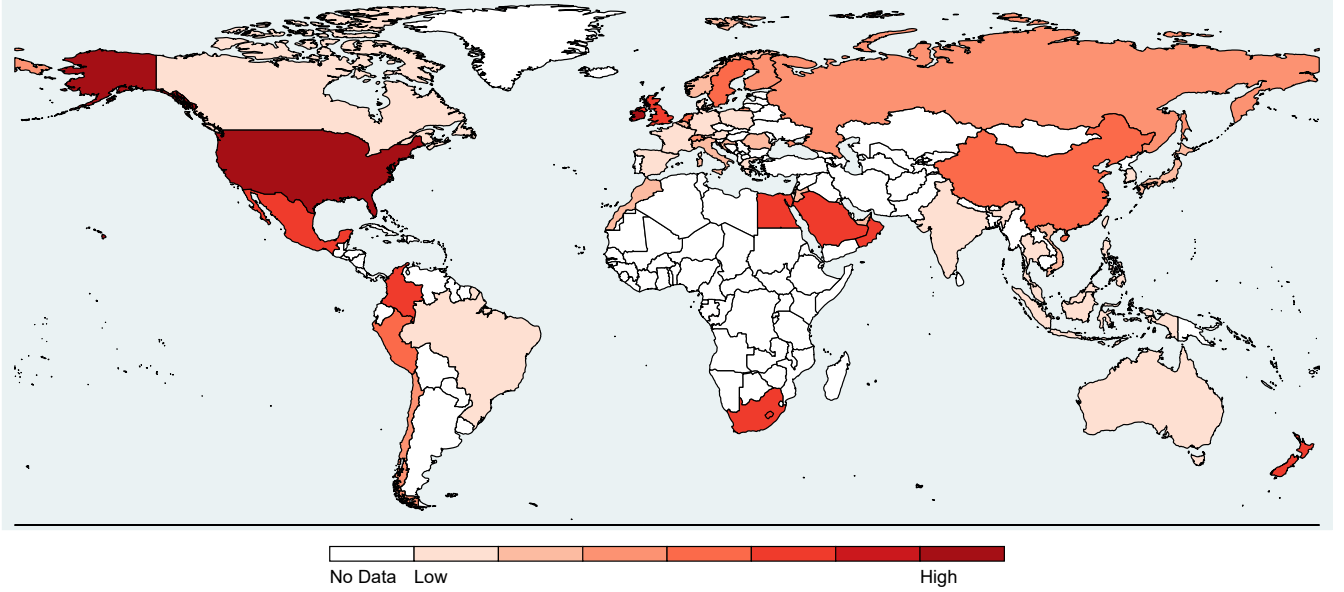
- Lewellen, Jonathan**, “Institutional investors and the limits of arbitrage,” *Journal of Financial Economics*, 2011, 102 (1), 62–80.
- Lewellen, Jonathan and Katharina Lewellen**, “The ownership structure of US corporations,” Available at SSRN 4173466, 2022.
- López, Ángel L. and Xavier Vives**, “Overlapping Ownership, R&D Spillovers, and Antitrust Policy,” *Journal of Political Economy*, 2019, 127 (5), 2394–2437.
- Lu, Ruichang, Qiaowei Shen, Tenghui Wang, and Xiaojun Zhang**, “Frenemies: Corporate Advertising Under Common Ownership,” *Management Science*, 2021.
- Matos, Pedro, Jinhee Kim, and Ting Xu**, “Multi-Class Shares Around the World: The Role of Institutional Investors,” *SSRN Working Paper*, 2018.
- Newham, Melissa, Jo Seldeslachts, and Albert Banal-Estanol**, “Common Ownership and Market Entry: Evidence from Pharmaceutical Industry,” *Working paper*, 2019.
- Park, Jihwon, Jalal Sani, Nemit Shroff, and Hal White**, “Disclosure Incentives when Competing Firms have Common Ownership,” *Journal of Accounting and Economics*, 2019, 67 (2-3), 387–415.
- Phillips, Noah Joshua**, “Taking Stock: Assessing Common Ownership,” in “US Federal Trade Commissioner’s speech at Concurrences Review and NYU Stern: The Global Antitrust Economics Conference, New York” 2018.
- Posner, Eric A.**, “Policy Implications of the Common Ownership Debate,” *Antitrust Bulletin*, 2021, 66 (1), 140–149.
- Schmalz, Martin C.**, “Common-ownership Concentration and Corporate Conduct,” *Annual Review of Financial Economics*, 2018, 10, 413–448.
- Schmalz, Martin C.**, “Recent studies on common ownership, firm behavior, and market outcomes,” *The Antitrust Bulletin*, 2021, 66 (1), 12–38.
- Schwartz-Ziv, Miriam and Ekaterina Volkova**, “Is blockholder diversity detrimental?,” *Management Science*, 2024.
- Shino, Junnosuke, Mitsuru Katagiri, and Koji Takahashi**, “Bank of Japan’s ETF Purchase Program and Equity Risk Premium: A CAPM Interpretation,” Available at SSRN 4935516, 2022.
- Shirai, Sayuri**, “Bank of Japan’s exchange-traded fund purchases as an unprecedented monetary easing policy,” Technical Report, ADBI Working Paper 2018.
- U.S. Department of Justice and Federal Trade Commission**, “Merger Guidelines,” 2023. https://www.ftc.gov/system/files/ftc_gov/pdf/2023_merger_guidelines_final_12.18.2023.pdf.
- Vestager, Margrethe**, “Competition in Changing Times,” *European Commission*, 2018, February (16). Available at https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-changing-times-0_en.
- Villalonga, Belen and Raphael Amit**, “Family ownership,” *Oxford Review of Economic Policy*, 2020, 36 (2), 241–257.
- Xie, Jin and Joseph Gerakos**, “The Anticompetitive Effects of Common Ownership: The Case of Paragraph IV Generic Entry,” *AEA Papers and Proceedings*, May 2020, 110, 569–72.

A Figures and Tables

This section includes the figures and tables referenced in the main text.



(A) Average Pairwise $\kappa_{Banzhaf}$ by Country in 2019Q4



(B) Average Intra-Industry Pairwise $\kappa_{Banzhaf}$ by Country in 2019Q4

Figure 1. Universal and Common Ownership Around the World at a Glance. For each pair of firms within a country in our sample in 2019Q4, we calculate the weight that a firm places on the other's profits ($\kappa_{Banzhaf}$) as implied by the common ownership hypothesis (Backus et al. (2021)). Chart A shows the arithmetic average of the pairwise $\kappa_{Banzhaf}$ by country in 2019Q4. Chart B shows the arithmetic average of the pairwise $\kappa_{Banzhaf}$ conditional on firm pairs where both firms are in the same country and industry in 2019Q4.

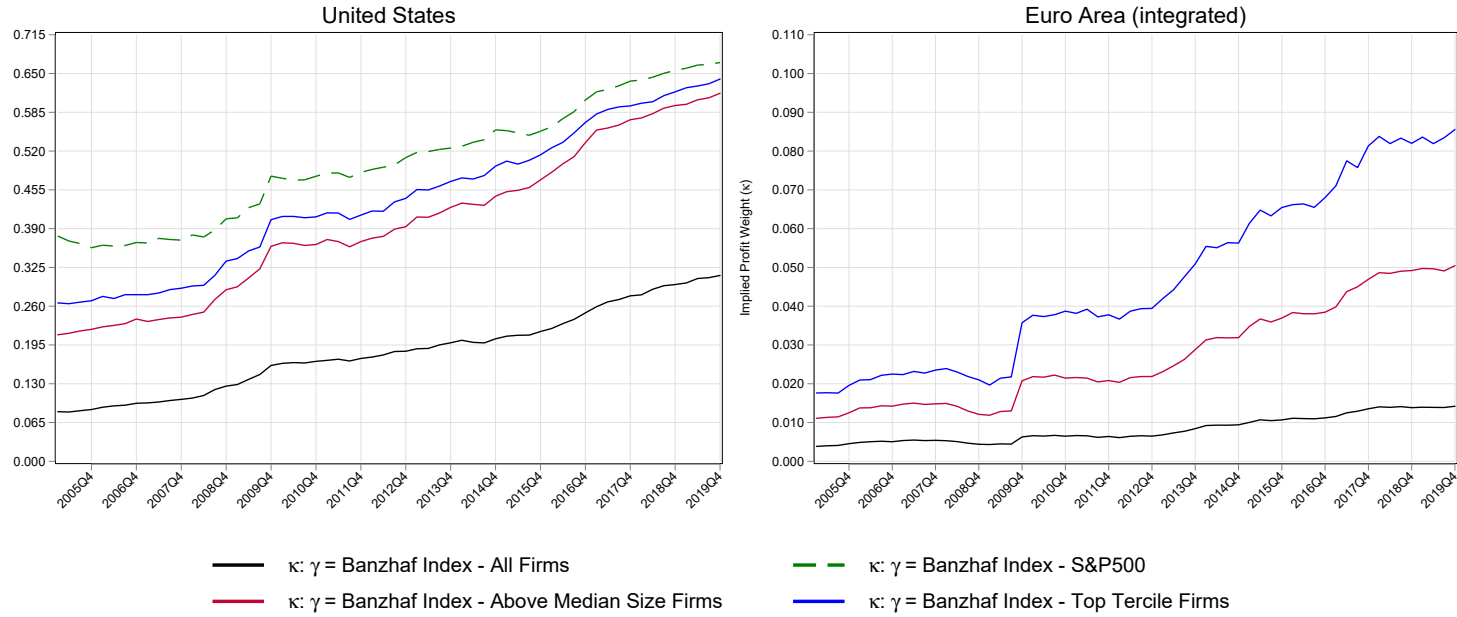


Figure 2A. Universal Ownership Trends. For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)). To track changes in ownership over time, we use a balanced panel of firms for the United States (# firms = 1,588) and the Euro Area (# firms = 864). The Euro Area is treated as a single country and comprises the following countries: Austria (# firms = 32), Belgium (# firms = 63), Finland (# firms = 48), France (# firms = 270), Germany (# firms = 205), Ireland (# firms = 34), Italy (# firms = 108), Netherlands (# firms = 51), and Spain (# firms = 53). The solid black line represents the average pairwise $\kappa_{Banzhaf}$ using all firms in the country sample. The solid red line shows the average pairwise $\kappa_{Banzhaf}$ for firms whose market capitalization is above the median in their country in each quarter. The solid blue line depicts the average pairwise $\kappa_{Banzhaf}$ for firms whose market capitalization is in the top tercile in their country in each quarter. The dashed green line, which is displayed only for the United States, is based on the S&P 500 index constituents in each quarter.

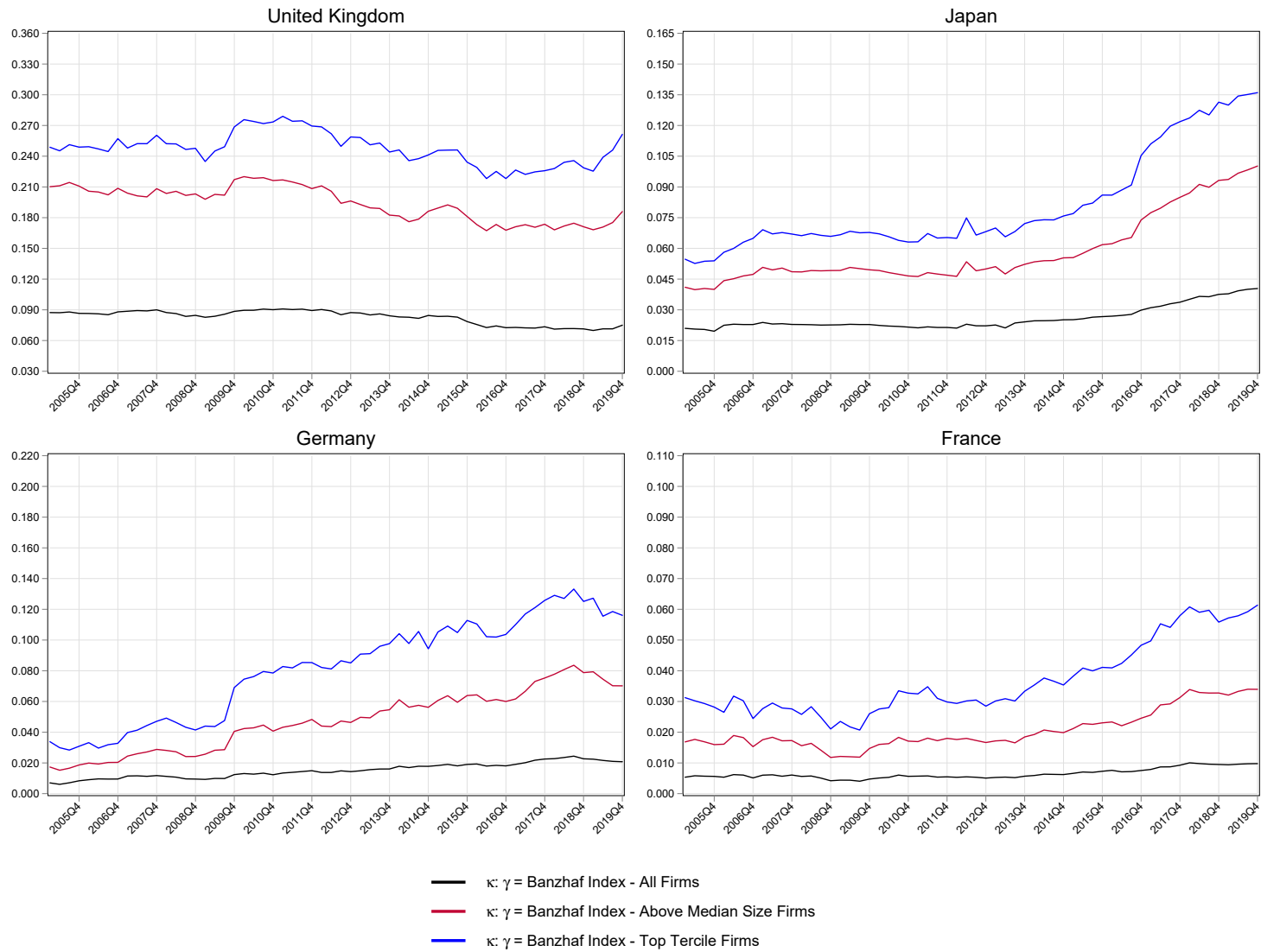


Figure 2B. Universal Ownership Trends. For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)). To track changes in ownership over time, we use a balanced panel of firms for the United Kingdom (# firms = 573), Japan (# firms = 2,446), Germany (# firms = 205), and France (# firms = 270). The solid black line represents the average pairwise $\kappa_{Banzhaf}$ using all firms in the country sample. The solid red line shows the average pairwise $\kappa_{Banzhaf}$ for firms whose market capitalization is above the median in their country in each quarter. The solid blue line depicts the average pairwise $\kappa_{Banzhaf}$ for firms whose market capitalization is in the top tercile in their country in each quarter.

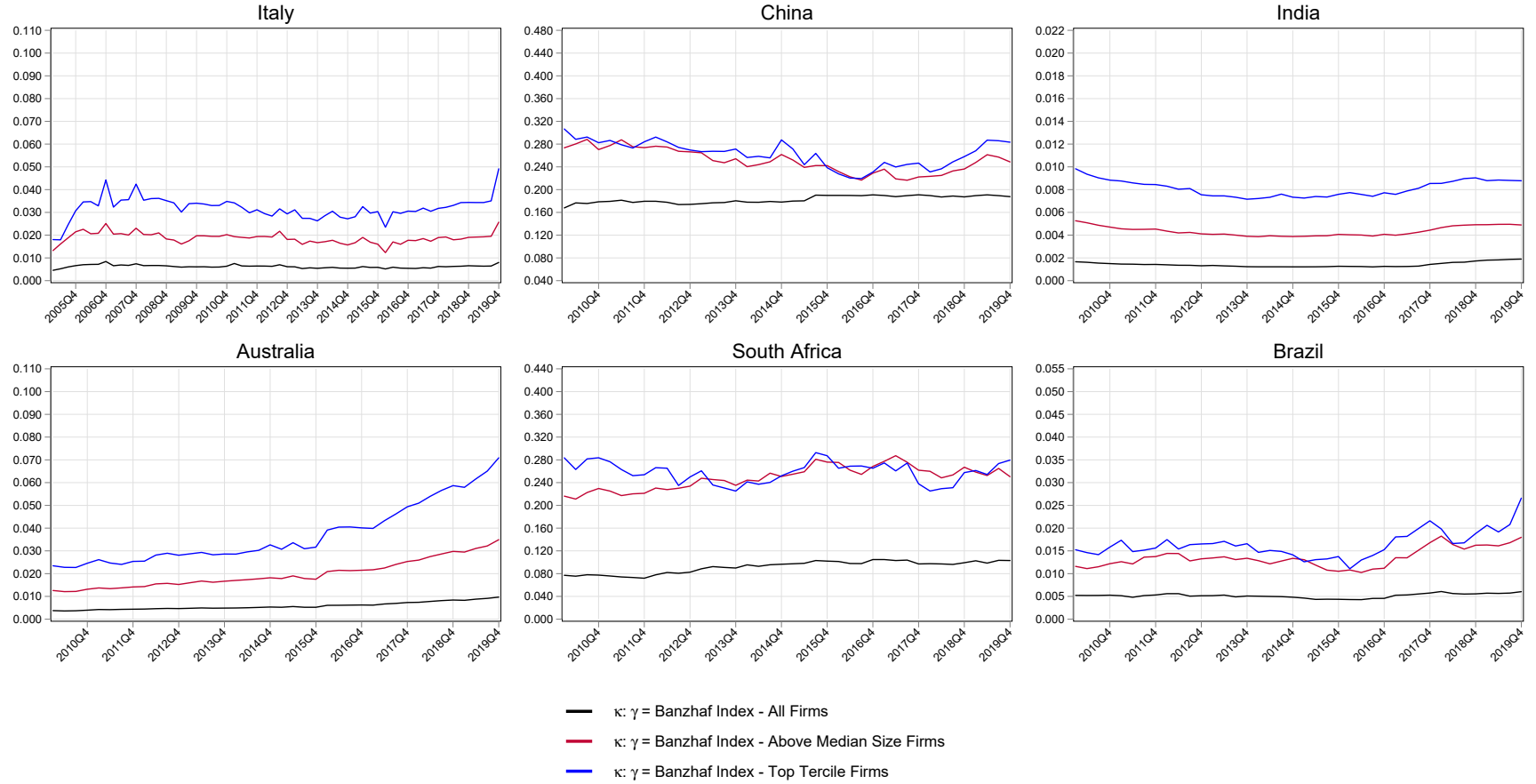


Figure 2C. Universal Ownership Trends. For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)). To track changes in ownership over time, we use a balanced panel of firms for Italy (# firms = 108), China (# firms = 1,587), India (# firms = 2,502), Australia (# firms = 824), South Africa (# firms = 152), and Brazil (# firms = 178). The solid black line represents the average pairwise $\kappa_{Banzhaf}$ using all firms in the country sample. The solid red line shows the average pairwise $\kappa_{Banzhaf}$ for firms whose market capitalization is above the median in their country in each quarter. The solid blue line depicts the average pairwise $\kappa_{Banzhaf}$ for firms whose market capitalization is in the top tercile in their country in each quarter.

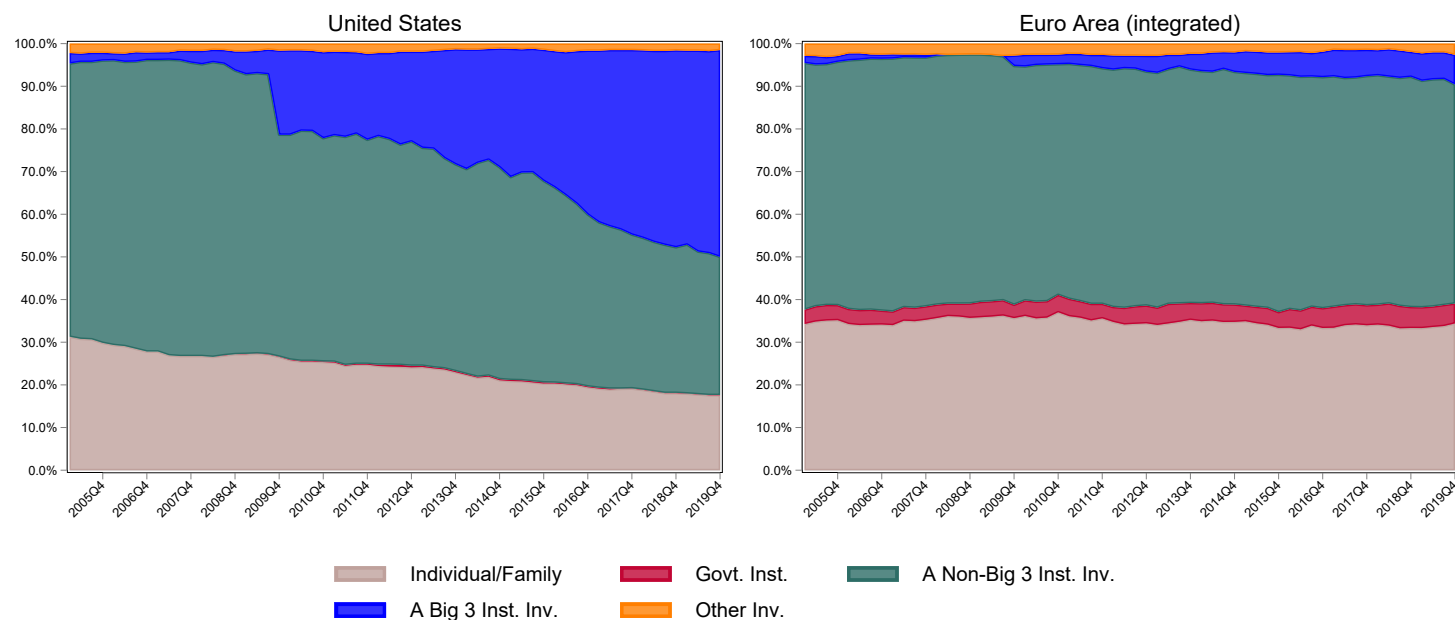


Figure 3A. Who are the Largest Owners? This figure presents the fraction of firms in each country whose largest shareholder falls into one of the following categories: an individual or family, a Big Three institutional investor (BlackRock, Vanguard, or State Street), a non-Big Three institutional investor, a government institution, or another type of investor (primarily venture capital, private equity, or research firms). To track changes in ownership over time, we use a balanced panel of firms for the United States (# firms = 1,588) and the Euro Area (# firms = 864). The Euro Area is treated as a single country and comprises the following countries: Austria (# firms = 32), Belgium (# firms = 63), Finland (# firms = 48), France (# firms = 270), Germany (# firms = 205), Ireland (# firms = 34), Italy (# firms = 108), Netherlands (# firms = 51), and Spain (# firms = 53).

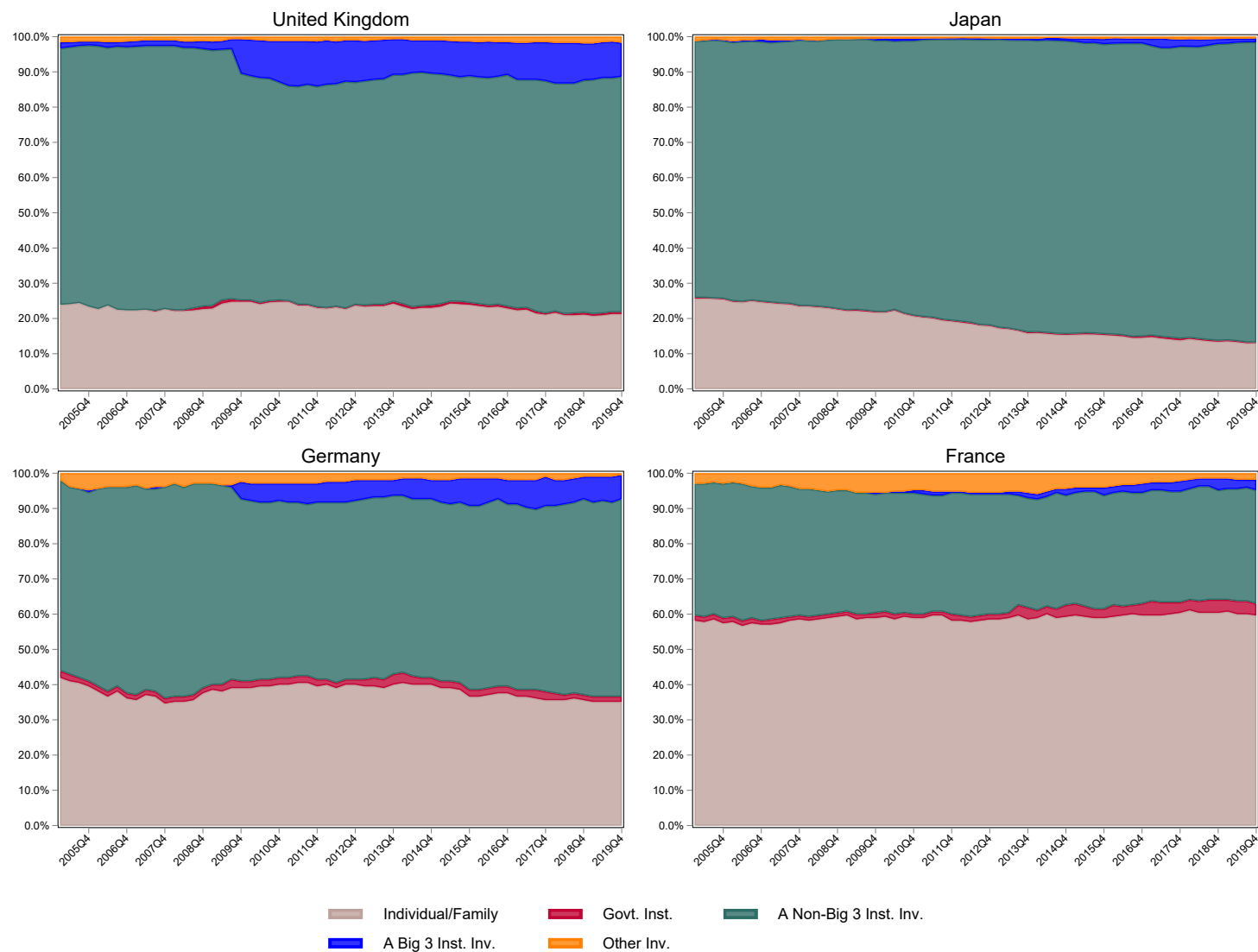


Figure 3B. Who are the Largest Owners? This figure presents the fraction of firms in each country whose largest shareholder falls into one of the following categories: an individual or family, a Big Three institutional investor (BlackRock, Vanguard, or State Street), a non-Big Three institutional investor, a government institution, or another type of investor (primarily venture capital, private equity, or research firms). To track changes in ownership over time, we use a balanced panel of firms for the United Kingdom (# firms = 573), Japan (# firms = 2,446), Germany (# firms = 205), and France (# firms = 270).

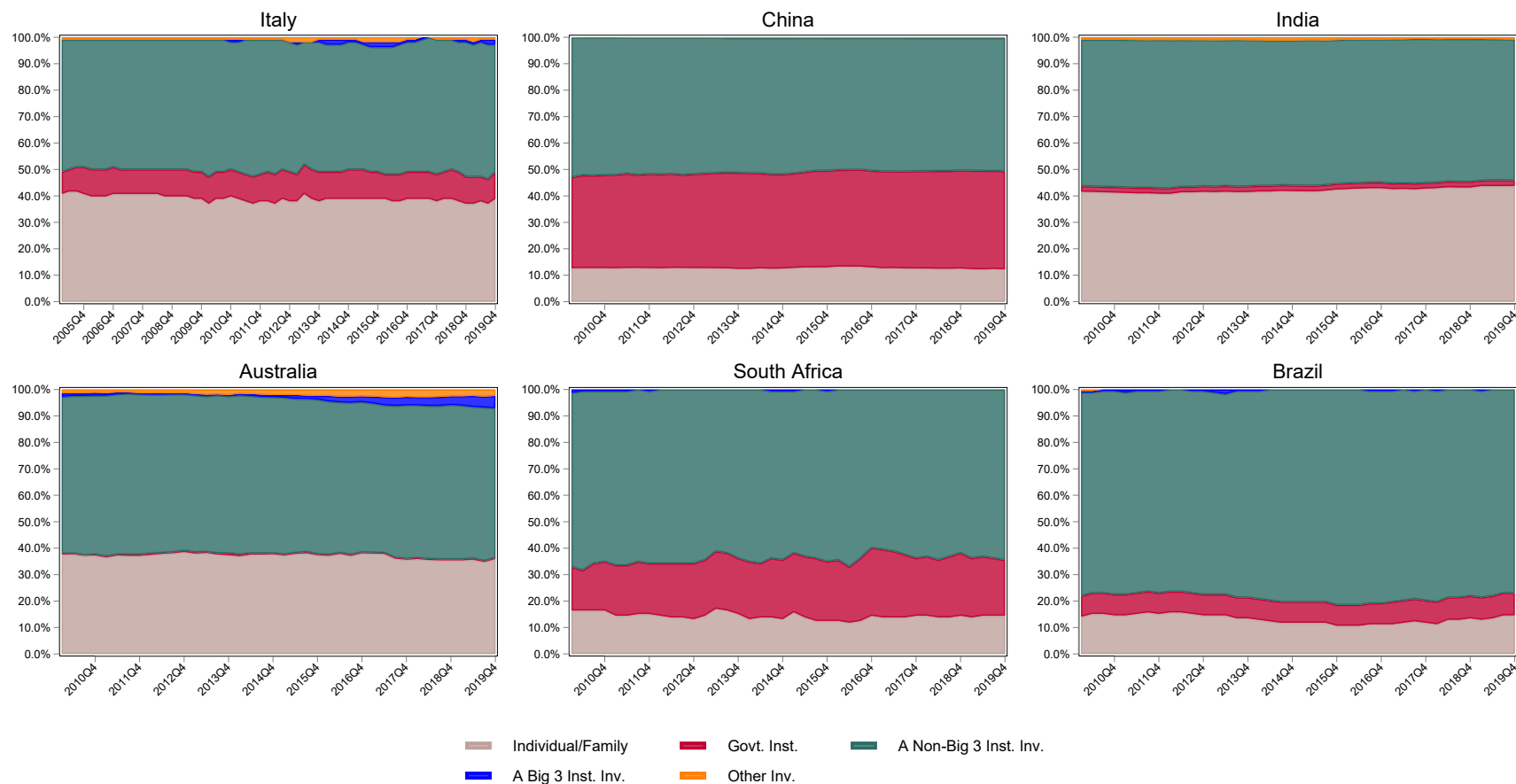


Figure 3C. Who are the Largest Owners? This figure presents the fraction of firms in each country whose largest shareholder falls into one of the following categories: an individual or family, a Big Three institutional investor (BlackRock, Vanguard, or State Street), a non-Big Three institutional investor, a government institution, or another type of investor (primarily venture capital, private equity, or research firms). To track changes in ownership over time, we use a balanced panel of firms for Italy (# firms = 108), China (# firms = 1,587), India (# firms = 2,502), Australia (# firms = 824), South Africa (# firms = 152), and Brazil (# firms = 178).

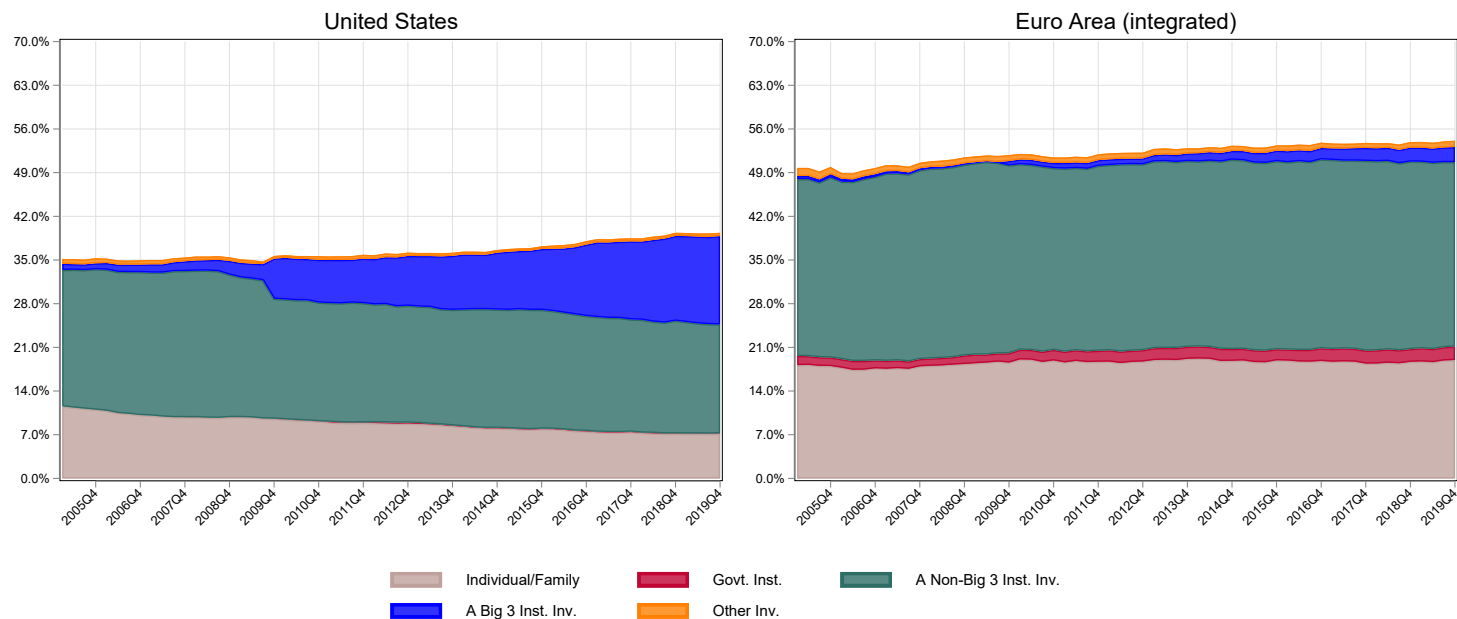


Figure 4A. Top 5 Investors' Mean Ownership Decomposition. This figure presents the mean ownership by the top five largest shareholders of each firm in each country sample. It also shows its decomposition into the following shareholder categories: individual or family, a Big Three institutional investor (BlackRock, Vanguard, or State Street), a non-Big Three institutional investor, a government institution, or another type of investor (primarily venture capital, private equity, or research firms). To track changes in ownership over time, we use a balanced panel of firms for the United States (# firms = 1,588) and the Euro Area (# firms = 864). The Euro Area is treated as a single country and comprises the following countries: Austria (# firms = 32), Belgium (# firms = 63), Finland (# firms = 48), France (# firms = 270), Germany (# firms = 205), Ireland (# firms = 34), Italy (# firms = 108), Netherlands (# firms = 51), and Spain (# firms = 53).

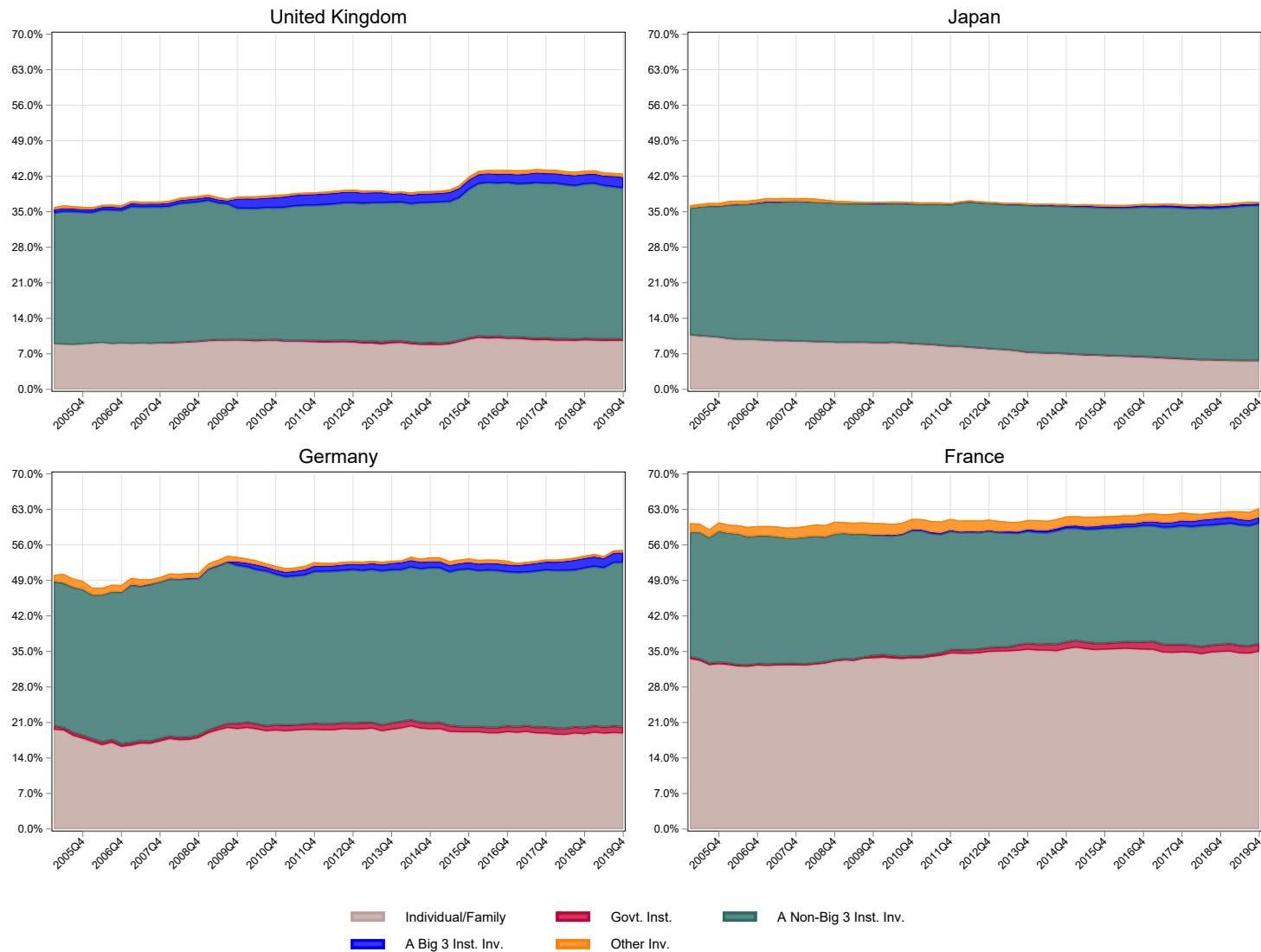


Figure 4B. Top 5 Investors' Mean Ownership Decomposition. This figure presents the mean ownership by the top five largest shareholders of each firm in each country sample. It also shows its decomposition into the following shareholder categories: individual or family, a Big Three institutional investor (BlackRock, Vanguard, or State Street), a non-Big Three institutional investor, a government institution, or another type of investor (primarily venture capital, private equity, or research firms). To track changes in ownership over time, we use a balanced panel of firms for the United Kingdom (# firms = 573), Japan (# firms = 2,446), Germany (# firms = 205), and France (# firms = 270).

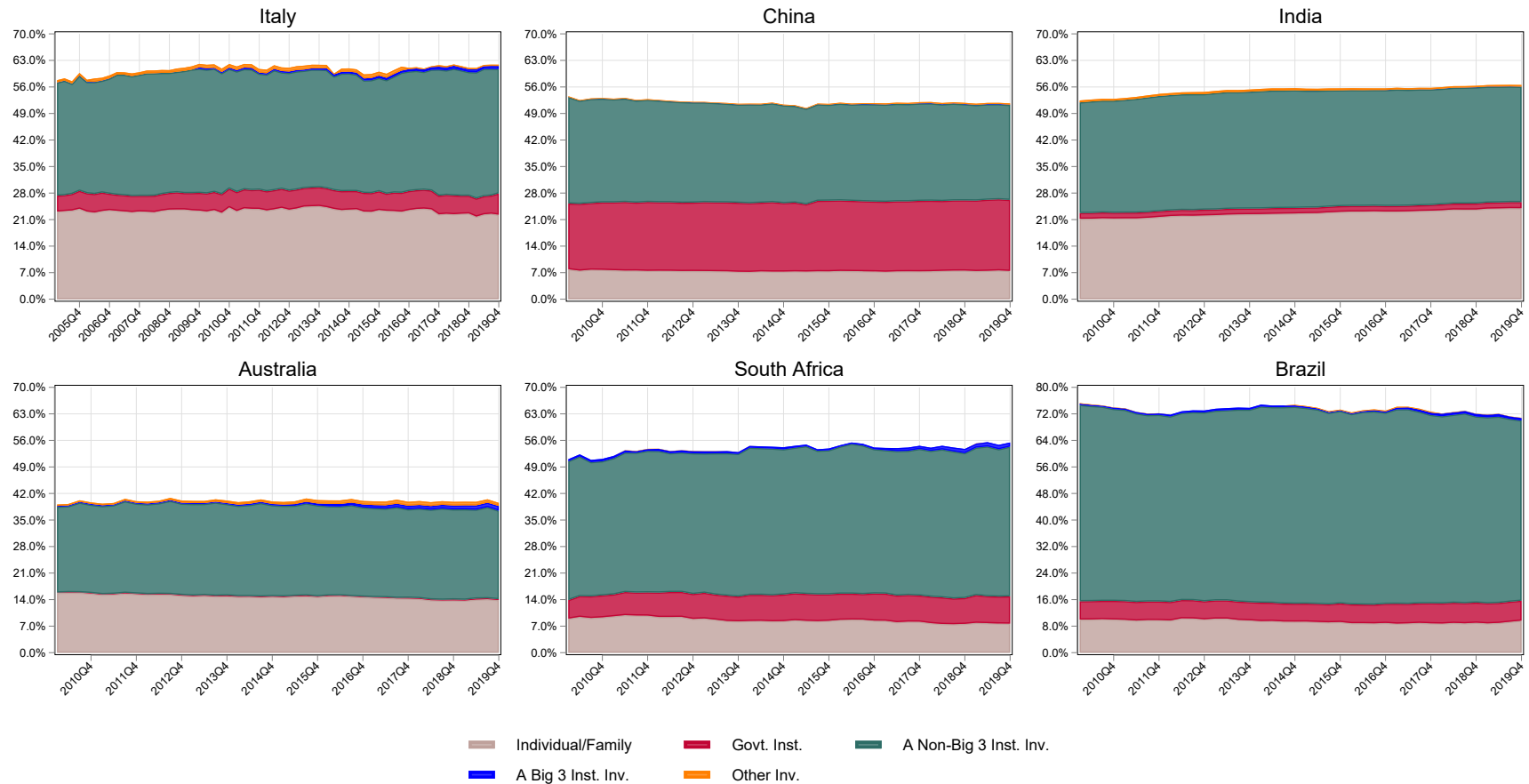


Figure 4C. Top 5 Investors' Mean Ownership Decomposition. This figure presents the mean ownership by the top five largest shareholders of each firm in each country sample. It also shows its decomposition into the following shareholder categories: individual or family, a Big Three institutional investor (BlackRock, Vanguard, or State Street), a non-Big Three institutional investor, a government institution, or another type of investor (primarily venture capital, private equity, or research firms). To track changes in ownership over time, we use a balanced panel of firms for Italy (# firms = 108), China (# firms = 1,587), India (# firms = 2,502), Australia (# firms = 824), South Africa (# firms = 152), and Brazil (# firms = 178).

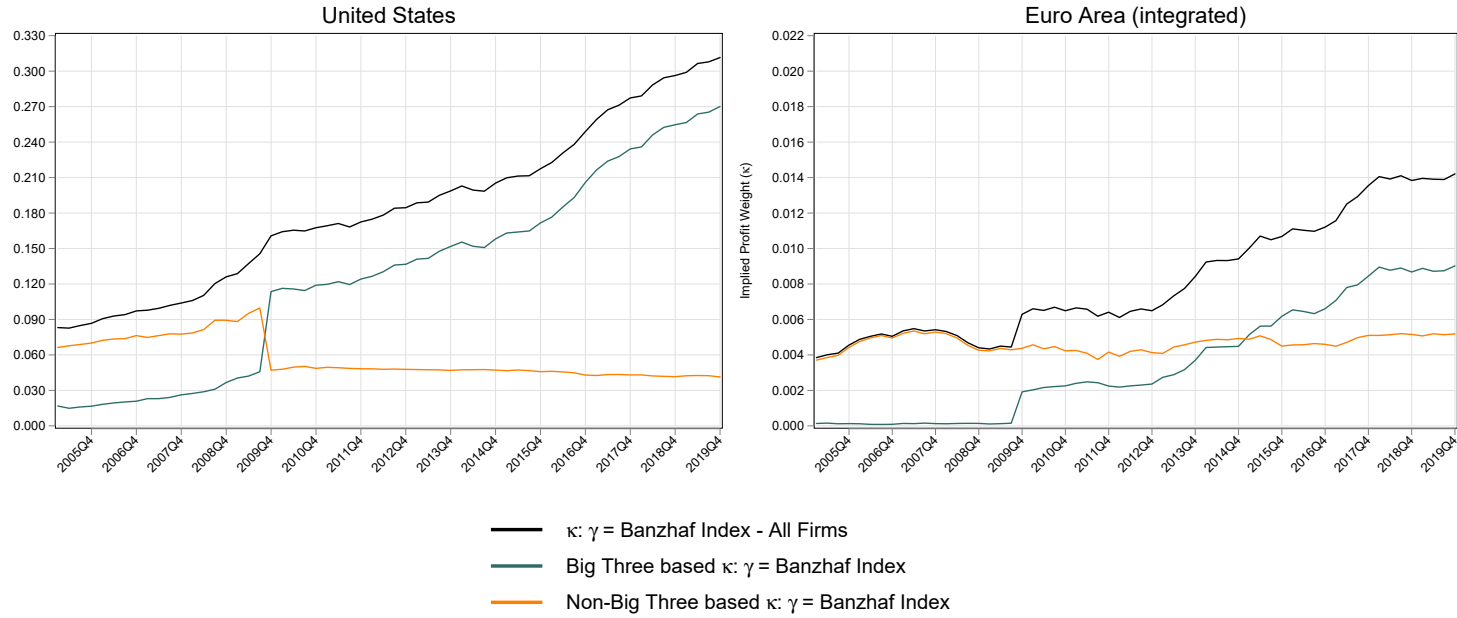


Figure 5A. Big Three Contribution to Universal Ownership (All Firms). For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)) and a breakdown of it into two terms, one driven by the Big Three (BlackRock, Vanguard, and State Street) and another driven by shareholders other than the Big Three. To track changes in ownership over time, we use a balanced panel of firms for the United States (# firms = 1,588) and the Euro Area (# firms = 864). The Euro Area is treated as a single country and comprises the following countries: Austria (# firms = 32), Belgium (# firms = 63), Finland (# firms = 48), France (# firms = 270), Germany (# firms = 205), Ireland (# firms = 34), Italy (# firms = 108), Netherlands (# firms = 51), and Spain (# firms = 53). The solid black line shows the overall trend of the average pairwise $\kappa_{Banzhaf}$. The solid green line shows the average pairwise $\kappa_{Banzhaf}$ generated by the Big Three. The solid orange line shows the average pairwise $\kappa_{Banzhaf}$ generated by other shareholders.



Figure 5B. Big Three Contribution to Universal Ownership (All Firms). For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)) and a breakdown of it into two terms, one driven by the Big Three (BlackRock, Vanguard, and State Street) and another driven by shareholders other than the Big Three. To track changes in ownership over time, we use a balanced panel of firms for the United Kingdom (# firms = 573), Japan (# firms = 2,446), Germany (# firms = 205), and France (# firms = 270). The solid black line shows the overall trend of the average pairwise $\kappa_{Banzhaf}$. The solid green line shows the average pairwise $\kappa_{Banzhaf}$ generated by the Big Three. The solid orange line shows the average pairwise $\kappa_{Banzhaf}$ generated by other shareholders.

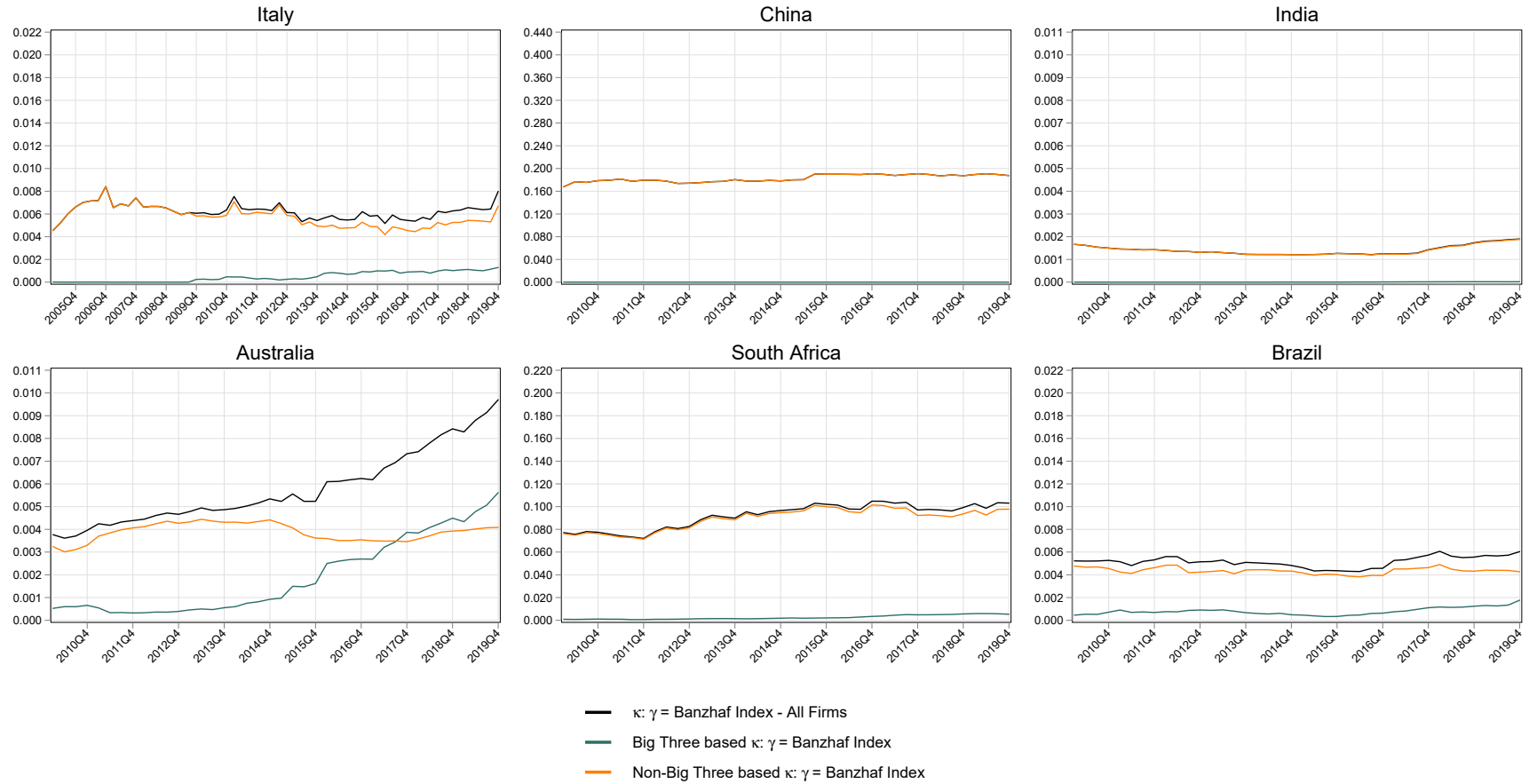


Figure 5C. Big Three Contribution to Universal Ownership (All Firms). For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)) and a breakdown of it into two terms, one driven by the Big Three (BlackRock, Vanguard, and State Street) and another driven by shareholders other than the Big Three. To track changes in ownership over time, we use a balanced panel of firms for Italy (# firms = 108), China (# firms = 1,587), India (# firms = 2,502), Australia (# firms = 824), South Africa (# firms = 152), and Brazil (# firms = 178). The solid black line shows the overall trend of the average pairwise $\kappa_{Banzhaf}$. The solid green line shows the average pairwise $\kappa_{Banzhaf}$ generated by the Big Three. The solid orange line shows the average pairwise $\kappa_{Banzhaf}$ generated by other shareholders.

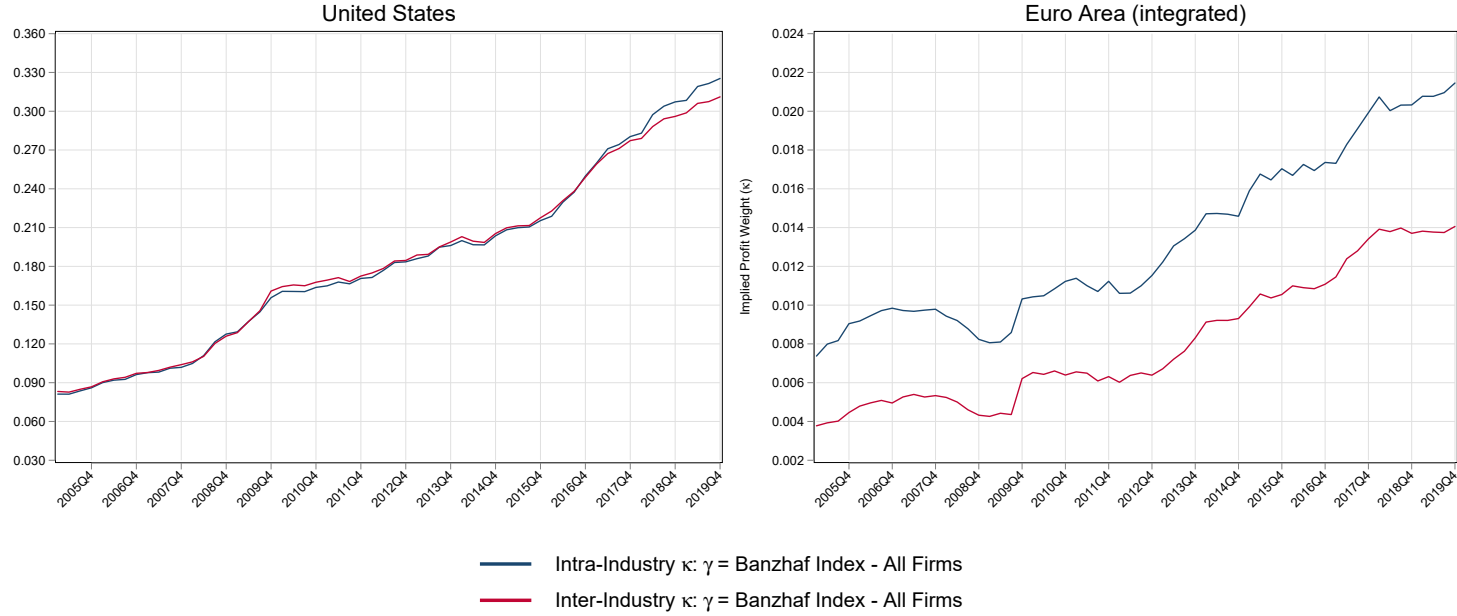


Figure 6A. Intra- vs Inter-Industry Common Ownership. For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)), conditional on whether a pair of firms share the same industry or not. We refer to the former as intra-industry common ownership and the latter as inter-industry common ownership. To track changes in ownership over time, we use a balanced panel of firms for the United States (# firms = 1,588) and the Euro Area (# firms = 864). The Euro Area is treated as a single country and comprises the following countries: Austria (# firms = 32), Belgium (# firms = 63), Finland (# firms = 48), France (# firms = 270), Germany (# firms = 205), Ireland (# firms = 34), Italy (# firms = 108), Netherlands (# firms = 51), and Spain (# firms = 53). The solid blue line depicts the average intra-industry pairwise $\kappa_{Banzhaf}$. The solid red line shows the average inter-industry pairwise $\kappa_{Banzhaf}$.

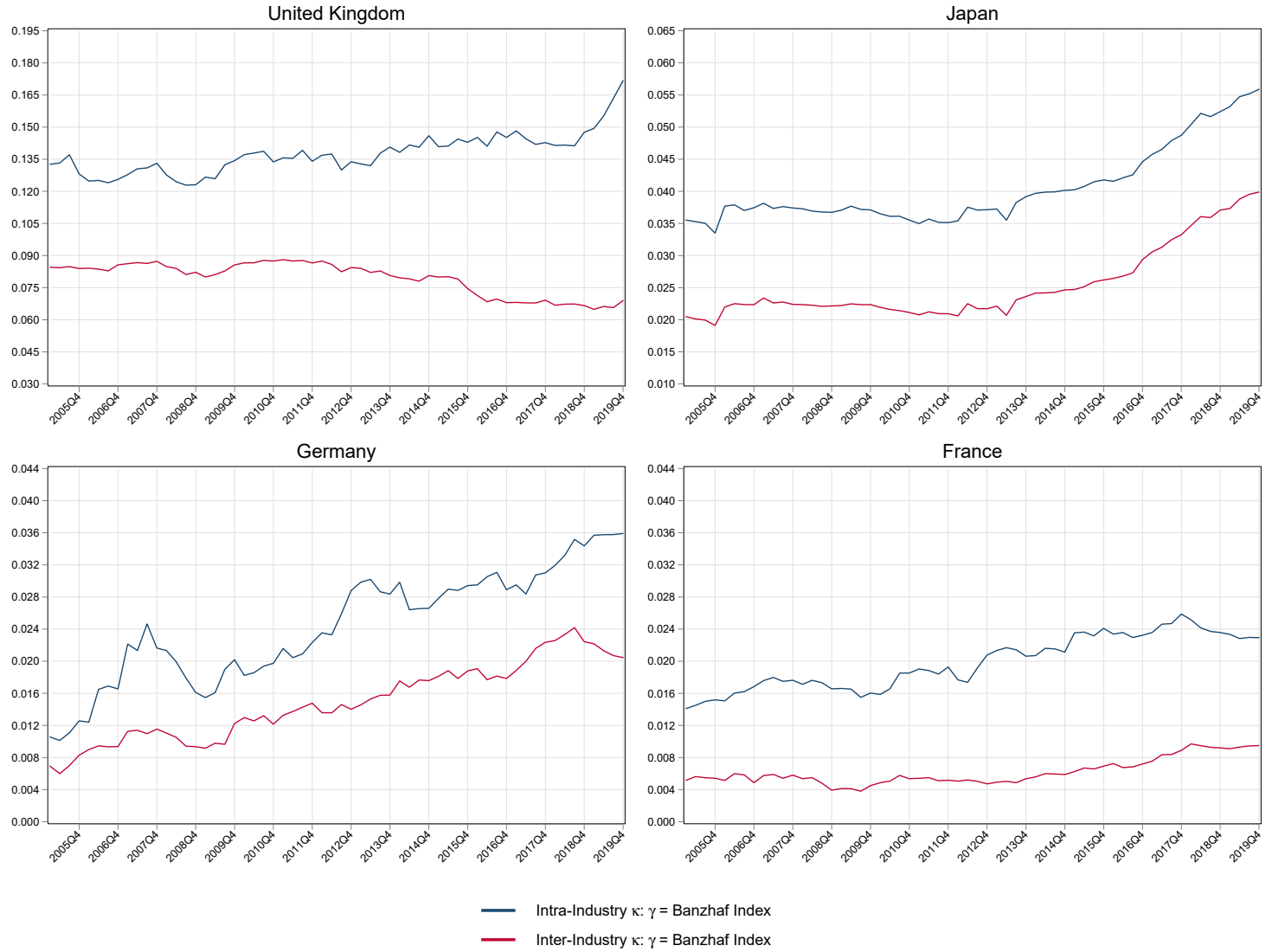


Figure 8B. Intra- vs Inter-Industry Common Ownership. For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)), conditional on whether a pair of firms share the same industry or not. We refer to the former as intra-industry common ownership and the latter as inter-industry common ownership. To track changes in ownership over time, we use a balanced panel of firms for the United Kingdom (# firms = 573), Japan (# firms = 2,446), Germany (# firms = 205), and France (# firms = 270). The solid blue line depicts the average intra-industry pairwise $\kappa_{Banzhaf}$. The solid red line shows the average inter-industry pairwise $\kappa_{Banzhaf}$.

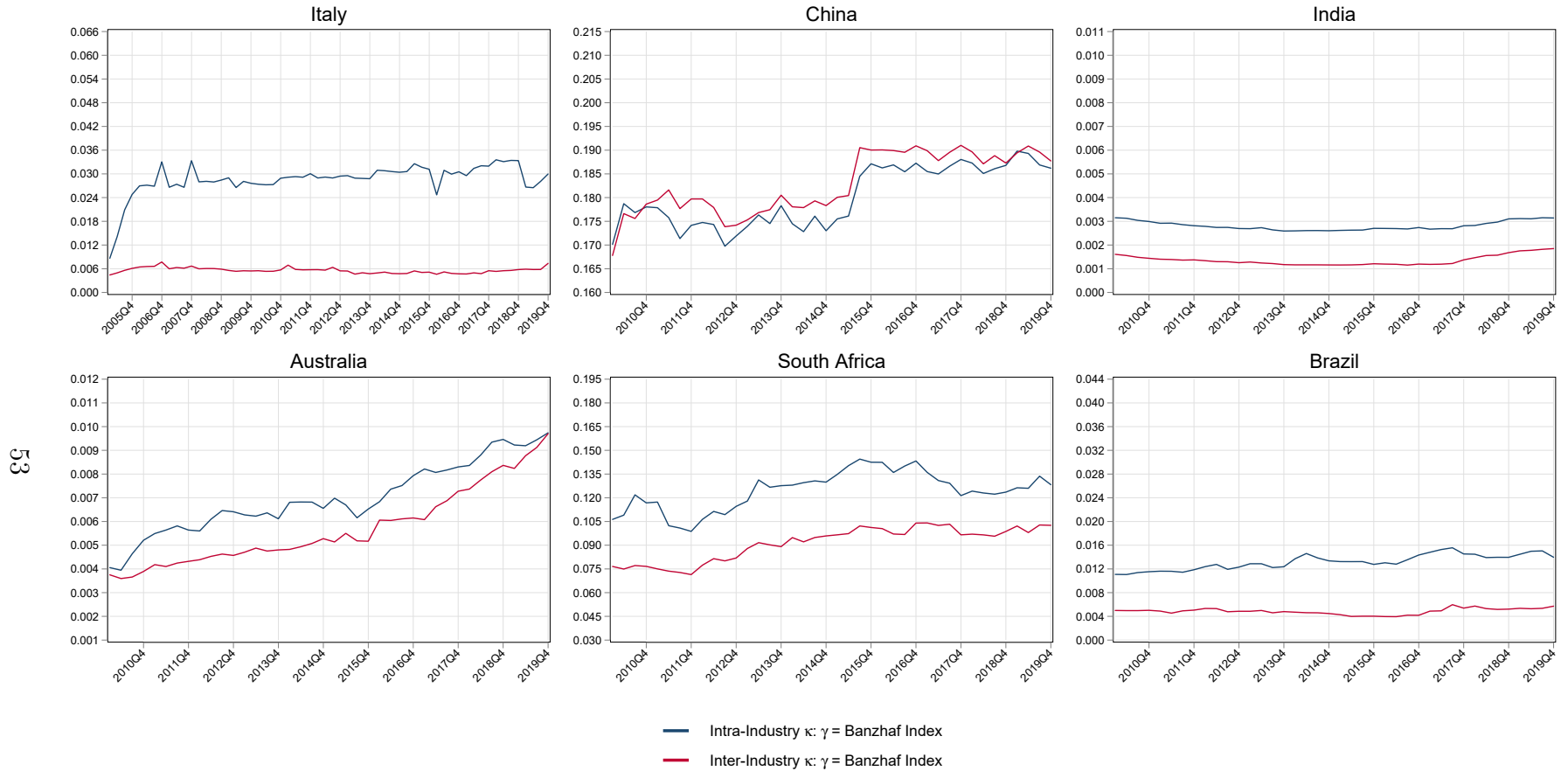


Figure 6C. Intra- vs Inter-Industry Common Ownership. For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)), conditional on whether a pair of firms share the same industry or not. We refer to the former as intra-industry common ownership and the latter as inter-industry common ownership. To track changes in ownership over time, we use a balanced panel of firms for Italy (# firms = 108), China (# firms = 1,587), India (# firms = 2,502), Australia (# firms = 824), South Africa (# firms = 152), and Brazil (# firms = 178). The solid blue line depicts the average intra-industry pairwise $\kappa_{Banzhaf}$. The solid red line shows the average inter-industry pairwise $\kappa_{Banzhaf}$.

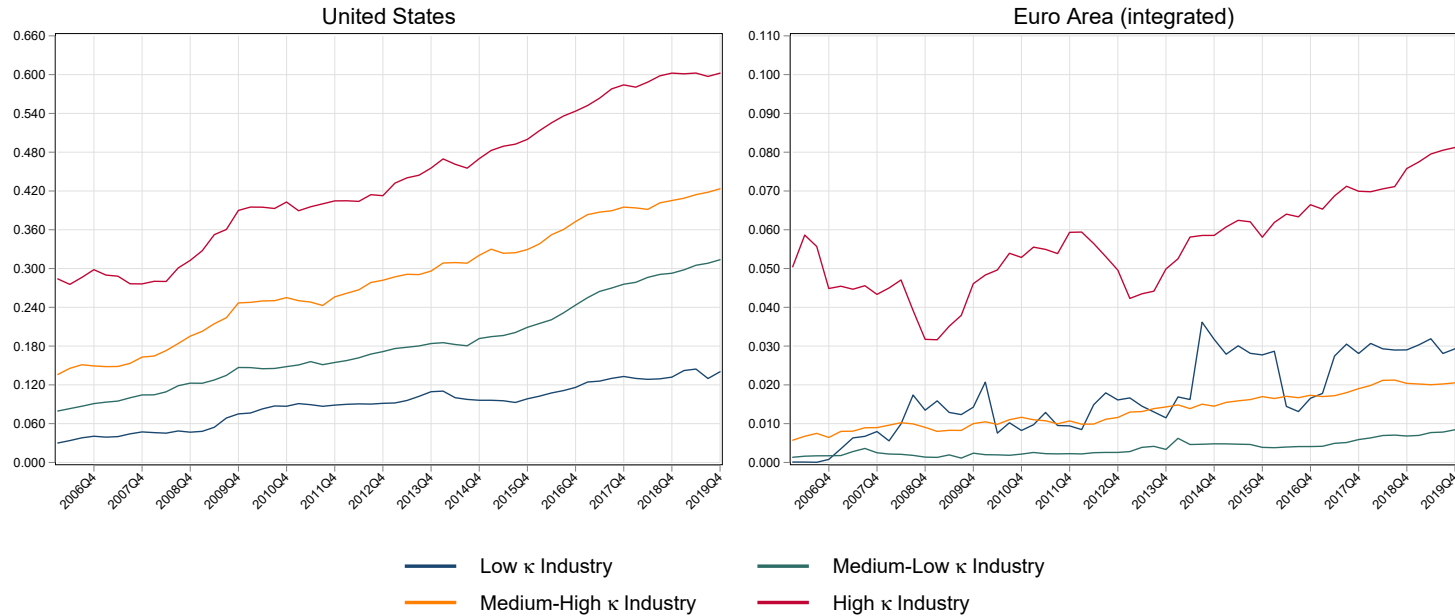


Figure 7A. Common Ownership Persistence by Industry $\kappa_{Banzhaf}$ Quartiles. For each country-industry-quarter combination, we first calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)). We refer to this as the industry $\kappa_{Banzhaf}$. Using industry $\kappa_{Banzhaf}$ values in the last quarter of the first year of data of each country, we sort industries into four buckets based on industry $\kappa_{Banzhaf}$ quartiles: low, medium-low, medium-high, and high $\kappa_{Banzhaf}$ industries. For each industry bucket in a given country and every quarter, we then calculate the equally weighted average of the industry $\kappa_{Banzhaf}$. To track changes in ownership over time, we use a balanced panel of firms for the United States (# firms = 1,588) and the Euro Area (# firms = 864). The Euro Area is treated as a single country and comprises the following countries: Austria (# firms = 32), Belgium (# firms = 63), Finland (# firms = 48), France (# firms = 270), Germany (# firms = 205), Ireland (# firms = 34), Italy (# firms = 108), Netherlands (# firms = 51), and Spain (# firms = 53). The solid red line depicts the evolution of the industry $\kappa_{Banzhaf}$ for high $\kappa_{Banzhaf}$ industries. The solid orange line depicts the evolution of the industry $\kappa_{Banzhaf}$ for medium-high $\kappa_{Banzhaf}$ industries. The solid green line depicts the evolution of the industry $\kappa_{Banzhaf}$ for medium-low $\kappa_{Banzhaf}$ industries. The solid blue line depicts the evolution of the industry $\kappa_{Banzhaf}$ for low $\kappa_{Banzhaf}$ industries.

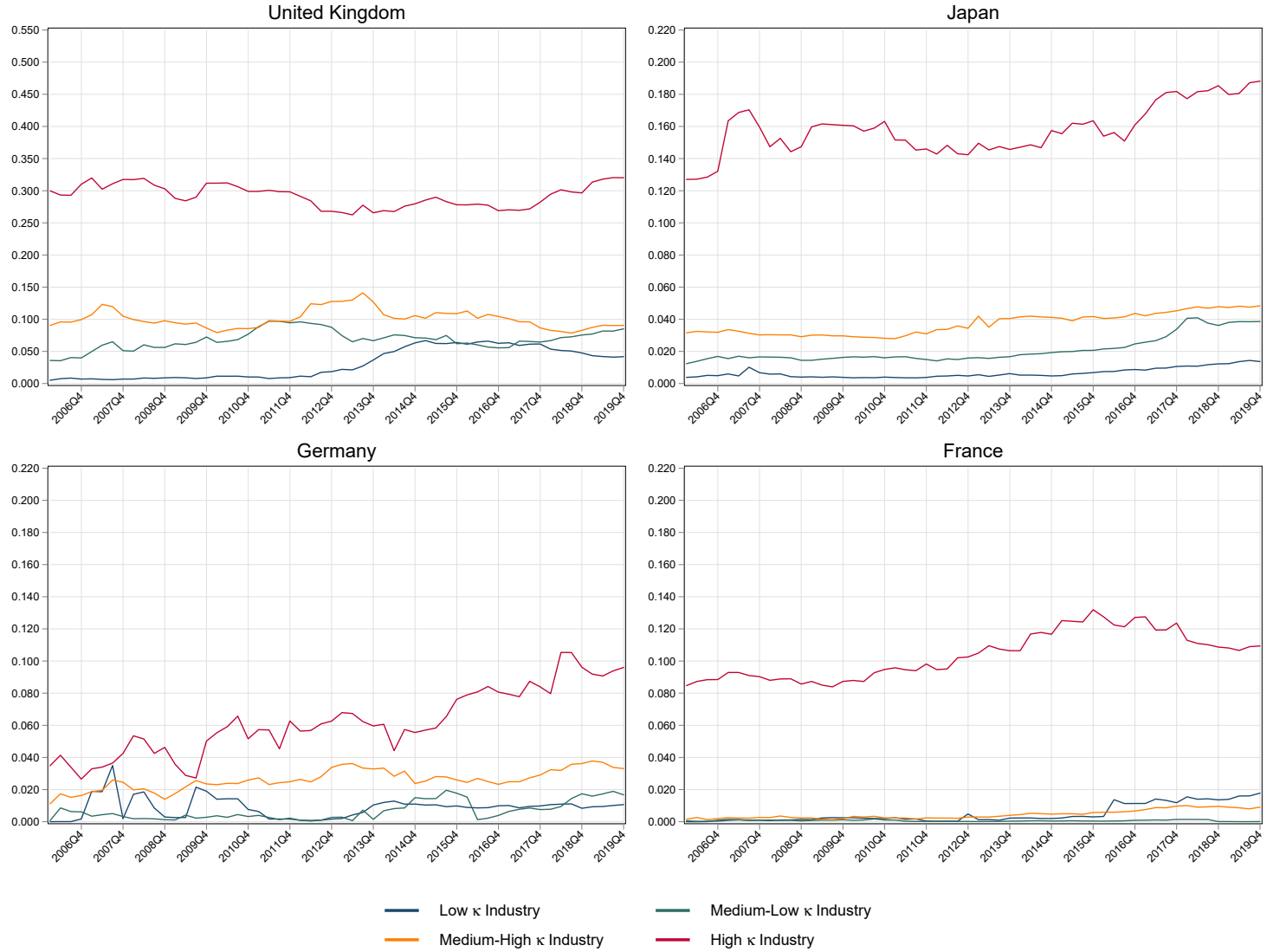


Figure 7B. Common Ownership Persistence by Industry $\kappa_{Banzhaf}$ Quartiles. For each country-industry-quarter combination, we first calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)). We refer to this as the industry $\kappa_{Banzhaf}$. Using industry $\kappa_{Banzhaf}$ values in the last quarter of the first year of data of each country, we sort industries into four buckets based on industry $\kappa_{Banzhaf}$ quartiles: low, medium-low, medium-high, and high $\kappa_{Banzhaf}$ industries. For each industry bucket in a given country and every quarter, we then calculate the equally weighted average of the industry $\kappa_{Banzhaf}$. To track changes in ownership over time, we use a balanced panel of firms for the United Kingdom (# firms = 573), Japan (# firms = 2,446), Germany (# firms = 205), and France (# firms = 270). The solid red line depicts the evolution of the industry $\kappa_{Banzhaf}$ for high $\kappa_{Banzhaf}$ industries. The solid orange line depicts the evolution of the industry $\kappa_{Banzhaf}$ for medium-high $\kappa_{Banzhaf}$ industries. The solid green line depicts the evolution of the industry $\kappa_{Banzhaf}$ for medium-low $\kappa_{Banzhaf}$ industries. The solid blue line depicts the evolution of the industry $\kappa_{Banzhaf}$ for low $\kappa_{Banzhaf}$ industries.

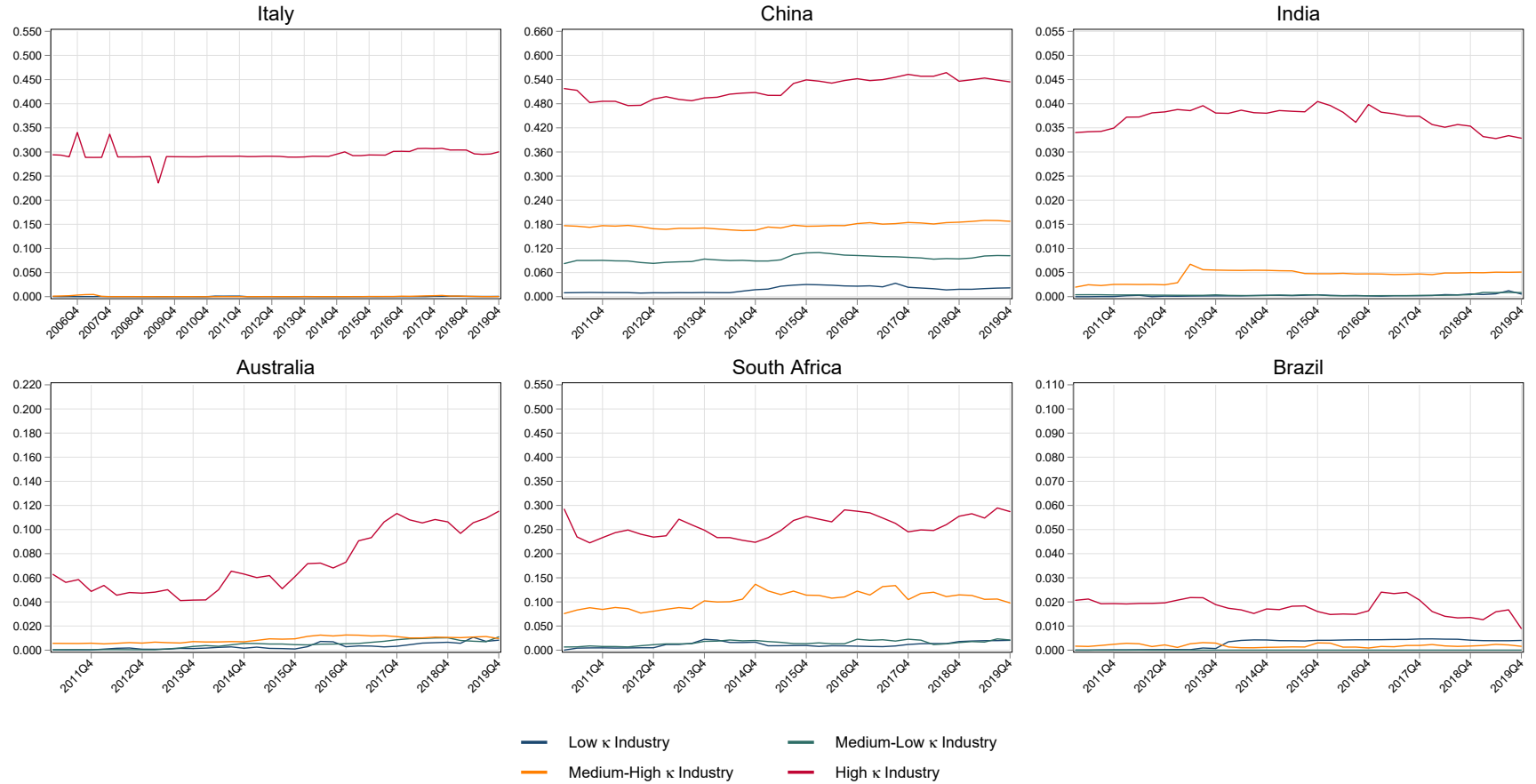


Figure 7C. Common Ownership Persistence by Industry $\kappa_{Banzhaf}$ Quartiles. For each country-industry-quarter combination, we first calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)). We refer to this as the industry $\kappa_{Banzhaf}$. Using industry $\kappa_{Banzhaf}$ values in the last quarter of the first year of data of each country, we sort industries into four buckets based on industry $\kappa_{Banzhaf}$ quartiles: low, medium-low, medium-high, and high $\kappa_{Banzhaf}$ industries. For each industry bucket in a given country and every quarter, we then calculate the equally weighted average of the industry $\kappa_{Banzhaf}$. To track changes in ownership over time, we use a balanced panel of firms for Italy (# firms = 108), China (# firms = 1,587), India (# firms = 2,502), Australia (# firms = 824), South Africa (# firms = 152), and Brazil (# firms = 178). The solid red line depicts the evolution of the industry $\kappa_{Banzhaf}$ for high $\kappa_{Banzhaf}$ industries. The solid orange line depicts the evolution of the industry $\kappa_{Banzhaf}$ for medium-high $\kappa_{Banzhaf}$ industries. The solid green line depicts the evolution of the industry $\kappa_{Banzhaf}$ for medium-low $\kappa_{Banzhaf}$ industries. The solid blue line depicts the evolution of the industry $\kappa_{Banzhaf}$ for low $\kappa_{Banzhaf}$ industries.

Table 1. Universal and Common Ownership Around the World (2019Q4)

Countries	#Unique Firms	Average Pairwise κ (Banzhaf)	Avg. Pairwise κ Decomposition		Avg. Pairwise κ Firm-Size Restricted Samples		Average Intra-Industry Pairwise κ	Average Inter-Industry Pairwise κ
			Big Three	Non-Big Three	Above Median	Top Tercile		
United States	4,233	0.1540	0.1319	0.0221	0.4226	0.5110	0.1548	0.1540
Canada	2,010	0.0039	0.0004	0.0035	0.0125	0.0220	0.0078	0.0035
Euro Area (integrated)	2,083	0.0073	0.0039	0.0034	0.0255	0.0482	0.0124	0.0072
United Kingdom	1,334	0.0409	0.0122	0.0287	0.1107	0.1583	0.1043	0.0386
France	580	0.0060	0.0018	0.0041	0.0176	0.0332	0.0112	0.0059
Germany	497	0.0095	0.0043	0.0051	0.0298	0.0555	0.0163	0.0093
Italy	313	0.0115	0.0007	0.0108	0.0176	0.0338	0.0236	0.0112
Spain	228	0.0066	0.0025	0.0041	0.0233	0.0429	0.0154	0.0063
Netherlands	119	0.0406	0.0184	0.0222	0.1010	0.1446	0.0743	0.0397
Belgium	113	0.0126	0.0033	0.0093	0.0374	0.0498	0.0394	0.0118
Ireland	75	0.1107	0.0838	0.0269	0.3441	0.4227	0.2244	0.1066
Austria	59	0.0072	0.0018	0.0054	0.0210	0.0364	0.0169	0.0069
Finland	99	0.0511	0.0031	0.0480	0.0913	0.1438	0.0560	0.0509
Sweden	398	0.0412	0.0003	0.0409	0.0546	0.0730	0.0665	0.0400
Norway	187	0.0190	0.0004	0.0186	0.0460	0.0698	0.0292	0.0185
Denmark	92	0.0146	0.0043	0.0103	0.0465	0.0754	0.0162	0.0145
Switzerland	189	0.0412	0.0216	0.0196	0.1143	0.1709	0.0484	0.0409
Poland	307	0.0090	0.0000	0.0089	0.0193	0.0304	0.0189	0.0087
Russian Federation	296	0.0064	0.0000	0.0064	0.0084	0.0096	0.0463	0.0046
Greece	175	0.0038	0.0001	0.0036	0.0114	0.0222	0.0200	0.0034
Croatia	106	0.0206	0.0000	0.0206	0.0172	0.0260	0.0301	0.0196
Romania	249	0.0184	0.0000	0.0184	0.0366	0.0595	0.0411	0.0175
Japan	3,811	0.0283	0.0038	0.0245	0.0751	0.1103	0.0380	0.0280
China	3,396	0.0964	0.0000	0.0963	0.1933	0.2383	0.0812	0.0968
India	3,969	0.0013	0.0000	0.0013	0.0038	0.0068	0.0019	0.0013
Hong Kong	1,431	0.0064	0.0001	0.0063	0.0150	0.0234	0.0057	0.0064
Taiwan	1,657	0.0095	0.0030	0.0066	0.0303	0.0491	0.0183	0.0090
South Korea	2,257	0.0025	0.0002	0.0023	0.0079	0.0149	0.0033	0.0024
Malaysia	905	0.0033	0.0000	0.0033	0.0102	0.0193	0.0037	0.0033
Indonesia	505	0.0006	0.0000	0.0006	0.0011	0.0017	0.0025	0.0006
Singapore	606	0.0013	0.0001	0.0013	0.0042	0.0073	0.0006	0.0013
Thailand	744	0.0024	0.0001	0.0023	0.0043	0.0058	0.0084	0.0022
Vietnam	784	0.0038	0.0000	0.0038	0.0053	0.0075	0.0280	0.0026
Philippines	208	0.0026	0.0000	0.0026	0.0054	0.0088	0.0092	0.0023
Australia	1,621	0.0059	0.0031	0.0028	0.0206	0.0413	0.0069	0.0059
New Zealand	121	0.0283	0.0038	0.0245	0.0735	0.0999	0.0944	0.0266
Brazil	269	0.0074	0.0017	0.0057	0.0184	0.0254	0.0155	0.0071
Mexico	62	0.0467	0.0192	0.0275	0.0635	0.0539	0.0936	0.0455
Chile	143	0.0112	0.0000	0.0111	0.0140	0.0184	0.0470	0.0099
Colombia	51	0.0152	0.0000	0.0152	0.0389	0.0304	0.1060	0.0111
Peru	59	0.0099	0.0000	0.0099	0.0160	0.0221	0.0785	0.0064
South Africa	238	0.0785	0.0031	0.0754	0.1914	0.2579	0.1001	0.0780
Egypt	219	0.0696	0.0000	0.0696	0.1061	0.0839	0.0929	0.0685
Morocco	69	0.0113	0.0000	0.0113	0.0154	0.0111	0.0243	0.0109

Continued on next page

Countries	#Unique Firms	Average Pairwise κ (Banzhaf)	Avg. Pairwise κ Decomposition		Avg. Pairwise κ Firm-Size Restricted Samples		Average Intra-Industry Pairwise κ	Average Inter-Industry Pairwise κ
			Big Three	Non-Big Three	Above Median	Top Tercile		
Israel	432	0.0082	0.0003	0.0079	0.0183	0.0248	0.0087	0.0082
United Arab Emirates	119	0.0233	0.0001	0.0232	0.0379	0.0451	0.0306	0.0228
Saudi Arabia	157	0.0454	0.0018	0.0436	0.1399	0.1880	0.0886	0.0432
Kuwait	160	0.0270	0.0001	0.0270	0.0465	0.0677	0.0189	0.0278
Oman	108	0.0713	0.0000	0.0713	0.1063	0.1311	0.1075	0.0701
Jordan	185	0.0245	0.0000	0.0245	0.0520	0.0674	0.0242	0.0246

This table presents the average value of the $\kappa_{Banzhaf}$ calculated for each pair of firms within each country as of 2019Q4, serving as a proxy for universal ownership. The table also provides a breakdown of the average pairwise $\kappa_{Banzhaf}$ into contributions from the Big Three and non-Big Three investors. Additionally, it reports the average pairwise $\kappa_{Banzhaf}$ for restricted firm samples, including firms with market capitalizations above the country median and those in the top tercile of the market capitalization distribution within their country in 2019Q4. Finally, the table displays the average pairwise $\kappa_{Banzhaf}$ for firms within the same country and industry in 2019Q4, which reflects intra-industry common ownership, as well as for firms in the same country but from different industries, capturing inter-industry common ownership. The Euro Area is treated as a single country and comprises the following countries: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, and Spain.

Table 2. Largest Owners (2019Q4)

Countries	#Unique Firms	Percentage (%) of Firms where the Largest Owner is. . .							
		(Owner's Classification)					(Owner's Country)		
		Individual/ Family	Big Three Inst. Inv.	Non-Big Three Inst. Inv.	Govt. Inst.	Other Investor	Domestic Investor	US Foreign Investor	Non-US Frgn. Inv.
United States	4,233	23.27	30.81	40.54	0.09	5.29	90.50	0.00	9.50
Canada	2,010	48.96	0.75	47.86	0.40	2.04	68.16	17.61	14.23
Euro Area (integrated)	2,083	39.13	3.41	50.02	3.79	3.65	80.36	8.11	11.52
United Kingdom	1,334	27.81	6.22	62.44	0.37	3.15	69.34	14.02	16.64
France	580	52.41	1.55	36.55	3.62	5.86	83.62	5.00	11.38
Germany	497	37.22	3.82	53.92	2.01	3.02	71.63	8.25	20.12
Italy	313	35.78	1.28	55.27	6.39	1.28	84.98	2.24	12.78
Spain	228	36.84	2.19	57.02	2.19	1.75	74.12	4.82	21.05
Netherlands	119	27.73	8.40	55.46	2.52	5.88	39.50	26.89	33.61
Belgium	113	43.36	2.65	46.02	5.31	2.65	61.06	5.31	33.63
Ireland	75	18.67	24.00	50.67	4.00	2.67	18.67	46.67	34.67
Austria	59	18.64	1.69	76.27	1.69	1.69	69.49	8.47	22.03
Finland	99	23.23	2.02	58.59	10.10	6.06	77.78	3.03	19.19
Sweden	398	34.17	0.50	55.53	0.75	9.05	81.91	2.01	16.08
Norway	187	6.95	0.53	82.35	3.74	6.42	78.61	3.21	18.18
Denmark	92	15.22	2.17	77.17	1.09	4.35	82.61	6.52	10.87
Switzerland	189	33.33	8.47	48.68	5.82	3.70	62.96	14.29	22.75
Poland	307	43.00	0.00	52.77	3.91	0.33	77.85	2.93	19.22
Russian Federation	296	16.55	0.00	78.38	5.07	0.00	85.81	0.00	14.19
Greece	175	65.71	0.00	30.86	3.43	0.00	90.29	0.57	9.14
Croatia	106	19.81	0.00	72.64	7.55	0.00	81.13	0.00	18.87
Romania	249	24.50	0.00	55.82	7.23	12.45	85.14	0.40	14.46
Japan	3,811	22.12	1.15	75.73	0.13	0.87	92.31	3.96	3.73
China	3,396	28.00	0.00	48.32	23.29	0.38	87.34	0.38	12.28
India	3,969	48.17	0.00	49.21	1.94	0.68	94.33	0.88	4.79
Hong Kong	1,431	39.48	0.07	53.11	6.99	0.35	53.46	0.70	45.84
Taiwan	1,657	24.50	0.97	72.78	0.91	0.84	94.27	2.05	3.68
South Korea	2,257	51.22	0.00	47.94	0.09	0.75	97.08	0.40	2.53
Malaysia	905	29.17	0.00	66.96	3.76	0.11	90.61	0.22	9.17
Indonesia	505	9.50	0.00	90.10	0.40	0.00	80.79	0.59	18.61
Singapore	606	41.09	0.17	54.29	3.63	0.83	73.10	1.32	25.58
Thailand	744	46.51	0.13	51.34	1.88	0.13	89.92	0.40	9.68
Vietnam	784	32.65	0.00	64.16	2.81	0.38	93.88	0.13	5.99
Philippines	208	11.54	0.00	87.50	0.96	0.00	90.38	0.48	9.13

Continued on next page

Countries	#Unique Firms	Percentage (%) of Firms where the Largest Owner is. . .							
		(Owner's Classification)					(Owner's Country)		
		Individual/ Family	Big Three Inst. Inv.	Non-Big Three Inst. Inv.	Govt. Inst.	Other Investor	Domestic Investor	US Foreign Investor	Non-US Frgn. Inv.
Australia	1,621	38.49	3.58	54.90	0.25	2.78	76.68	7.28	16.04
New Zealand	121	34.71	0.83	57.02	6.61	0.83	71.90	2.48	25.62
Brazil	269	15.61	0.37	75.46	8.18	0.37	85.87	5.20	8.92
Mexico	62	40.32	6.45	51.61	1.61	0.00	82.26	14.52	3.23
Chile	143	13.29	0.00	86.71	0.00	0.00	88.81	1.40	9.79
Colombia	51	9.80	0.00	86.27	3.92	0.00	84.31	1.96	13.73
Peru	59	3.39	0.00	93.22	1.69	1.69	55.93	3.39	40.68
South Africa	238	16.39	0.00	66.81	16.81	0.00	87.39	0.42	12.18
Egypt	219	34.70	0.00	41.55	22.37	1.37	81.74	0.46	17.81
Morocco	69	23.19	0.00	72.46	4.35	0.00	75.36	0.00	24.64
Israel	432	45.37	0.23	48.38	0.00	6.02	82.18	6.94	10.88
United Arab Emirates	119	25.21	0.00	39.50	35.29	0.00	87.39	0.00	12.61
Saudi Arabia	157	29.30	0.64	47.13	22.93	0.00	77.71	1.27	21.02
Kuwait	160	15.63	0.00	76.25	8.13	0.00	91.25	0.63	8.13
Oman	108	21.30	0.00	58.33	16.67	3.70	68.52	0.00	31.48
Jordan	185	42.70	0.00	49.73	7.57	0.00	75.14	0.00	24.86
All Countries	35,945	33.57	4.52	55.82	4.22	1.88	84.77	3.40	11.83

This table presents the percentage of firms in each country whose largest shareholder falls into one of the following categories as of 2019Q4: an individual or family, a Big Three institutional investor (BlackRock, Vanguard, or State Street), a non-Big Three institutional investor, a government institution, or another type of investor (primarily venture capital, private equity, or research firms). Additionally, it shows the percentage of firms whose largest shareholders are domestic, U.S. foreign, or non-U.S. foreign investors during the same period. The Euro Area is treated as a single country and comprises the following countries: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, and Spain. The last row of the table provides these summary statistics for the entire sample.

Table 3. Top 5 Universal Owners by Country (2019Q4)

Countries	Owner's Name	# Firms in Portfolio	As % of Country Sample Firms	As % of Country Sample Mkt. Cap.	Pct. (%) of Country Sample Firms where Stake is...		
					≥ 0.5%	≥ 1%	≥ 5%
United States	The Vanguard Group, Inc.	3,036	71.72	8.32	68.13	65.82	40.07
United States	BlackRock, Inc.	3,060	72.29	7.14	63.81	61.37	45.95
United States	State Street Corporation	2,583	61.02	4.29	54.67	51.05	5.27
United States	Fidelity Investments	2,121	50.11	2.22	27.50	23.06	6.87
United States	T Rowe Price Group, Inc.	2,160	51.03	2.00	19.09	16.56	6.90
Euro Area (integrated)	BlackRock, Inc.	795	38.17	4.58	26.55	19.92	7.92
Euro Area (integrated)	The Vanguard Group, Inc.	703	33.75	2.54	28.32	23.96	1.20
Euro Area (integrated)	Norges Bank Investment Management (NBIM)	774	37.16	1.62	32.65	25.73	0.34
Euro Area (integrated)	Amundi SA	760	36.49	1.13	15.17	8.59	0.53
Euro Area (integrated)	State Street Corporation	736	35.33	0.70	4.13	2.45	0.19
United Kingdom	BlackRock, Inc.	606	45.43	6.82	40.03	30.96	14.54
United Kingdom	The Vanguard Group, Inc.	509	38.16	2.75	23.46	18.89	0.37
United Kingdom	Legal & General Group plc	577	43.25	1.74	40.63	36.96	2.17
United Kingdom	State Street Corporation	542	40.63	1.52	19.27	11.92	0.15
United Kingdom	Schroder Investment Management, Ltd. (SIM)	560	41.98	1.07	29.09	23.09	8.77
France	BlackRock, Inc.	143	24.66	4.08	19.66	15.17	5.86
France	The Vanguard Group, Inc.	151	26.03	1.92	22.41	17.93	0.34
France	Norges Bank Investment Management (NBIM)	183	31.55	1.61	27.41	23.10	0.69
France	Amundi SA	201	34.66	1.53	18.79	11.90	1.03
France	MFS Investment Management	87	15.00	0.88	2.76	1.55	0.69
Germany	BlackRock, Inc.	162	32.60	5.54	25.75	21.33	8.85
Germany	The Vanguard Group, Inc.	160	32.19	1.99	25.55	22.13	0.00
Germany	Norges Bank Investment Management (NBIM)	166	33.40	1.83	28.37	20.72	0.40
Germany	DWS Investment GmbH	177	35.61	1.24	16.10	12.88	2.41
Germany	Amundi SA	174	35.01	1.14	13.08	7.44	0.00
Italy	Italian Government	15	4.79	11.29	4.79	4.79	4.79
Italy	BlackRock, Inc.	190	60.70	3.48	19.81	11.50	3.51
Italy	The Vanguard Group, Inc.	90	28.75	1.88	25.88	21.09	0.00
Italy	Norges Bank Investment Management (NBIM)	126	40.26	1.79	37.70	29.71	0.00
Italy	Dimensional Fund Advisors, LP	130	41.53	0.53	25.88	12.14	0.64
Japan	Nomura Asset Management Co., Ltd.	2,335	61.27	3.07	58.23	51.69	3.83
Japan	BlackRock, Inc.	2,238	58.72	2.41	25.72	18.47	2.26
Japan	The Vanguard Group, Inc.	1,452	38.10	1.96	36.05	32.35	0.00
Japan	Nikko Asset Management Co., Ltd.	2,326	61.03	1.49	49.65	15.14	0.58
Japan	Daiwa Asset Management Co., Ltd.	2,533	66.47	1.38	54.61	24.06	1.31

Continued on next page

Countries	Owner's Name	# Firms in Portfolio	As % of Country Sample Firms	As % of Country Sample Mkt. Cap.	Pct. (%) of Country Sample Firms where Stake is...		
					$\geq 0.5\%$	$\geq 1\%$	$\geq 5\%$
China	Government Of China	2,598	76.50	18.35	54.62	49.03	30.83
China	The Vanguard Group, Inc.	1,695	49.91	0.34	4.15	3.06	0.00
China	E Fund Management Co., Ltd.	1,129	33.24	0.25	7.01	3.06	0.09
China	Harvest Fund Management Co., Ltd.	1,394	41.05	0.22	6.86	3.00	0.21
China	Gf Fund Management Co., Ltd.	2,299	67.70	0.16	4.65	2.18	0.15
India	Government Of India	870	21.92	7.66	12.98	10.08	2.44
India	Life Insurance Corporation Of India	344	8.67	3.90	8.67	8.62	2.52
India	Sbi Funds Management Private, Ltd.	273	6.88	1.26	5.11	4.16	0.81
India	BlackRock, Inc.	357	8.99	1.04	4.43	1.91	0.00
India	Icici Prudential Asset Management Co., Ltd.	528	13.30	0.91	4.61	3.58	0.50
Australia	The Vanguard Group, Inc.	273	16.84	4.43	16.53	14.93	5.37
Australia	BlackRock, Inc.	273	16.84	4.26	12.65	9.56	3.89
Australia	Norges Bank Investment Management (NBIM)	277	17.09	1.17	15.36	11.72	0.12
Australia	State Street Corporation	264	16.29	0.79	2.47	0.99	0.56
Australia	Dimensional Fund Advisors, LP	401	24.74	0.60	14.13	9.50	1.17
South Africa	Public Investment Corporation SOC, Ltd.	117	49.16	10.50	49.16	49.16	44.96
South Africa	The Vanguard Group, Inc.	102	42.86	2.76	42.02	39.92	2.52
South Africa	BlackRock, Inc.	96	40.34	2.22	35.71	28.57	2.52
South Africa	Coronation Fund Managers, Ltd.	77	32.35	1.68	22.69	19.33	12.18
South Africa	Ninety One SA Pty., Ltd.	124	52.10	1.37	38.66	28.99	14.29
Brazil	BlackRock, Inc.	106	39.41	2.34	30.48	20.82	5.20
Brazil	The Vanguard Group, Inc.	98	36.43	1.24	34.20	27.14	0.00
Brazil	Itaú Unibanco SA	124	46.10	0.88	29.00	22.68	5.20
Brazil	Norges Bank Investment Management (NBIM)	114	42.38	0.81	28.62	17.84	1.12
Brazil	Dimensional Fund Advisors, LP	131	48.70	0.49	27.88	17.47	0.00

This table reports the top 5 universal owners as of 2019Q4 for 12 countries: United States, Euro Area, United Kingdom, France, Germany, Italy, Japan, China, India, Australia, South Africa, and Brazil. It also shows the number of firms in their portfolios, both in levels and as a percentage of the number of firms in the country sample, as well as the market capitalization of the country sample. It further reports the percentage of firms in the country sample where the universal owner has a stake of at least 0.5%, 1%, or 5%. The top 5 universal owners are identified as follows: We calculate a universal owner index as the product of the number of firms in the investor's portfolio, expressed as a fraction of the number of firms in the country sample, and the value of the investor's portfolio, expressed as a fraction of the market capitalization of all the firms in the country. We then sort all investors based on the value of this universal owner index and select the top five. The Euro Area is treated as a single country and comprises the following countries: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, and Spain.

Table 4. Ownership by the Top 5 Shareholders (2019Q4)

Countries	#Unique Firms	Top 5's Mean Ownership Ratio (%)	Top 5 Investors' Mean Ownership Decomposition (%)							
			(Owner's Classification)					(Owner's Country)		
			Individual/ Family	Big Three Inst. Inv.	Non-Big Three Inst. Inv.	Govt. Inst.	Other Investor	Domestic Investor	US Foreign Investor	Non-US Foreign Investor
United States	4,233	41.12	10.10	9.55	19.27	0.09	2.11	36.33	0.00	4.79
Canada	2,010	31.88	14.57	0.28	16.14	0.13	0.76	20.97	5.67	5.23
Euro Area (integrated)	2,083	57.83	22.44	1.14	30.52	1.83	1.90	46.71	4.20	6.92
United Kingdom	1,334	45.72	12.91	1.57	29.49	0.23	1.52	32.71	5.15	7.85
France	580	60.66	30.49	0.73	24.47	1.50	3.47	49.90	3.35	7.42
Germany	497	58.07	20.72	1.16	33.31	1.37	1.51	41.04	4.18	12.84
Italy	313	60.56	21.43	0.47	34.62	3.44	0.60	51.01	2.22	7.34
Spain	228	61.98	23.92	0.73	35.53	0.86	0.95	44.68	2.94	14.36
Netherlands	119	47.90	13.65	2.11	28.73	0.88	2.54	18.44	10.37	19.08
Belgium	113	54.20	23.19	1.11	25.84	2.62	1.44	31.95	3.18	19.07
Ireland	75	42.28	7.56	7.36	22.73	2.42	2.21	7.05	17.91	17.31
Austria	59	65.83	12.44	0.95	49.88	2.11	0.44	43.38	4.26	18.19
Finland	99	44.96	10.69	0.75	29.27	2.94	1.30	35.20	1.86	7.90
Sweden	398	47.19	15.85	0.20	27.58	0.23	3.33	39.74	1.14	6.32
Norway	187	49.49	4.15	0.31	41.14	1.61	2.29	38.96	1.78	8.75
Denmark	92	49.87	9.48	0.97	36.39	1.55	1.47	39.10	3.24	7.53
Switzerland	189	50.09	16.71	2.28	26.95	2.85	1.29	32.22	5.52	12.35
Poland	307	67.36	26.82	0.12	37.77	2.32	0.34	52.82	2.14	12.41
Russian Federation	296	81.56	11.83	0.10	65.70	3.88	0.06	68.76	0.31	12.49
Greece	175	67.15	43.44	0.32	20.95	2.44	0.00	58.73	2.19	6.23
Croatia	106	70.32	12.71	0.00	52.09	5.52	0.00	55.37	0.13	14.82
Romania	249	76.24	17.77	0.00	40.44	5.02	13.01	65.29	0.11	10.84
Japan	3,811	41.29	10.31	0.39	29.79	0.10	0.70	37.88	1.74	1.67
China	3,396	55.32	16.74	0.07	26.12	11.86	0.53	47.29	0.39	7.64
India	3,969	56.84	26.81	0.03	28.06	1.53	0.41	52.62	0.87	3.34
Hong Kong	1,431	61.53	23.74	0.29	32.87	4.28	0.35	31.83	1.30	28.39
Taiwan	1,657	37.51	9.27	0.48	27.14	0.37	0.25	34.88	1.01	1.62
South Korea	2,257	45.83	21.14	0.28	23.84	0.12	0.45	43.09	1.19	1.54
Malaysia	905	57.21	17.55	0.06	36.32	3.21	0.07	51.15	0.25	5.81
Indonesia	505	75.74	9.23	0.15	65.81	0.54	0.02	58.78	1.00	15.96
Singapore	606	62.32	27.29	0.17	32.54	1.89	0.43	45.83	1.14	15.35
Thailand	744	43.26	22.25	0.10	20.05	0.79	0.06	38.63	0.25	4.38
Vietnam	784	55.25	15.75	0.00	37.37	1.94	0.19	50.87	0.15	4.23
Philippines	208	66.67	8.81	0.17	57.06	0.63	0.01	59.20	0.80	6.67
Continued on next page										

Countries	#Unique Firms	Top 5's Mean Ownership Ratio (%)	Top 5 Investors' Mean Ownership Decomposition (%)							
			(Owner's Classification)					(Owner's Country)		
			Individual/ Family	Big Three Inst. Inv.	Non-Big Three Inst. Inv.	Govt. Inst.	Other Investor	Domestic Investor	US Foreign Investor	Non-US Foreign Investor
Australia	1,621	38.73	14.44	0.91	22.27	0.17	0.94	29.80	2.29	6.64
New Zealand	121	44.00	14.08	0.93	25.14	3.57	0.29	32.00	1.93	10.06
Brazil	269	68.27	10.49	0.71	51.24	5.62	0.20	58.47	3.41	6.39
Mexico	62	51.46	23.48	1.23	26.20	0.39	0.16	45.61	4.75	1.10
Chile	143	74.86	8.16	0.05	66.63	0.02	0.00	65.67	1.80	7.39
Colombia	51	70.58	4.43	0.00	63.11	3.04	0.00	60.22	1.72	8.65
Peru	59	81.55	4.04	0.12	73.55	2.02	1.81	47.42	2.62	31.51
South Africa	238	57.68	9.63	0.82	40.48	6.74	0.03	49.85	2.25	5.58
Egypt	219	66.88	22.06	0.13	27.31	16.77	0.60	53.41	0.39	13.07
Morocco	69	76.09	15.04	0.00	57.10	3.43	0.52	57.60	0.15	18.35
Israel	432	63.77	27.02	0.21	33.64	0.05	2.85	54.22	3.70	5.85
United Arab Emirates	119	54.88	16.35	0.39	21.84	15.51	0.79	48.29	0.76	5.83
Saudi Arabia	157	41.86	12.13	1.05	19.97	8.66	0.06	33.90	1.52	6.44
Kuwait	160	53.93	10.29	0.20	38.81	4.63	0.00	49.01	0.41	4.51
Oman	108	66.71	14.18	0.01	36.94	13.72	1.85	47.85	0.36	18.50
Jordan	185	64.34	26.30	0.00	32.06	5.97	0.00	48.54	0.18	15.63
All Countries	35,945	50.00	16.76	1.46	28.47	2.36	0.94	41.69	1.62	6.69

This table presents descriptive statistics on the ownership by the top five largest shareholders of each firm as of 2019Q4 for every country in our sample. Namely, this table displays the mean ownership ratio by the top 5 shareholders and its decomposition based on the shareholder classifications and the countries of the top 5 owners. The Euro Area is treated as a single country and comprises the following countries: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, and Spain. The last row of this table shows the same summary statistics for the entire sample.

Table 5. Top 10 Industries with the Highest Levels of Intra-Industry Common Ownership (2019Q4)

Macro Sector	Sector	Industry	Average Industry Pairwise Kappa (Banzhaf)	Industry Firm Count	Average Industry Firm Count	Industry Market Cap.	Average Industry Market. Cap.
United States							
Consumer Discretionary	Retail	Retail (Footwear)	0.7552	7.00	42.43	16.39	284.47
Financials	REIT	REIT-Mixed Properties	0.6962	99.00	42.43	633.55	284.47
Financials	REIT	REIT-Apartments	0.6926	21.00	42.43	184.62	284.47
Utilities	Electric Utilities	Power Producers (Independ)	0.6325	13.00	42.43	176.88	284.47
Consumer Discretionary	Retail	Retail Stores-Dept Stores	0.5683	5.00	42.43	27.06	284.47
Financials	REIT	REIT-Factory Outlet Centers	0.5648	83.00	42.43	401.03	284.47
Health Care	Health Care	Health Care (Managed Care)	0.5402	10.00	42.43	535.47	284.47
Utilities	Non-Electric Utilities	Natural Gas-Distr-Pipe Line	0.5237	14.00	42.43	56.00	284.47
Industrials	Transportation	Airlines	0.5230	10.00	42.43	122.59	284.47
Consumer Discretionary	Retail	Retail (Discounters/Offprice)	0.4778	11.00	42.43	340.92	284.47
Euro Area (integrated)							
Financials	Non-Bank Financial	Insurance Brokers	0.2085	3.00	22.78	74.44	92.31
Energy	Energy	Oil & Gas (International Integrated)	0.1475	2.00	22.78	199.82	92.31
Financials	Non-Bank Financial	Insurance (Multi-Line)	0.0643	16.00	22.78	242.67	92.31
Consumer Staples	Consumer Staples	Distributors (Food & Health)	0.0568	17.00	22.78	67.23	92.31
Financials	Non-Bank Financial	Financial (Diversified)	0.0513	71.00	22.78	654.14	92.31
Technology	High Tech - Hardware	Semiconductors	0.0493	29.00	22.78	243.54	92.31
Industrials	Transportation	Airlines	0.0406	5.00	22.78	48.93	92.31
Industrials	Aerospace/Defense	Aerospace/Defense	0.0364	17.00	22.78	218.73	92.31
Materials	Chemicals	Chemicals	0.0356	56.00	22.78	447.76	92.31
Consumer Discretionary	Leisure Cyclical	Gaming, Lottery & Parimutuel	0.0347	10.00	22.78	17.05	92.31
United Kingdom							
Consumer Staples	Consumer Staples	Tobacco	0.8355	2.00	15.27	121.74	32.20
Consumer Discretionary	Consumer Cyclical	Hardware & Tools	0.6409	2.00	15.27	0.38	32.20
Consumer Staples	Consumer Staples	Distributors (Food & Health)	0.5328	4.00	15.27	51.81	32.20
Utilities	Non-Electric Utilities	Water Utilities	0.3653	4.00	15.27	22.31	32.20
Consumer Discretionary	Consumer Cyclical	Homebuilding	0.3025	11.00	15.27	53.95	32.20
Consumer Discretionary	Retail	Retail (Building Supplies)	0.2873	3.00	15.27	11.62	32.20
Financials	REIT	REIT-Mixed Properties	0.2692	10.00	15.27	13.98	32.20
Industrials	Aerospace/Defense	Aerospace/Defense	0.2618	12.00	15.27	80.59	32.20
Financials	Non-Bank Financial	Insurance (Life/Health)	0.2569	6.00	15.27	80.72	32.20
Telecommunication Services	Cellular/Wireless Telecom	Cellular/Wireless Telecoms	0.2392	3.00	15.27	55.74	32.20
Continued on next page							

Macro Sector	Sector	Industry	Average Industry Pairwise Kappa (Banzhaf)	Industry Firm Count	Average Industry Firm Count	Industry Market Cap.	Average Industry Market. Cap.
Australia							
Financials	REIT	REIT-Mixed Properties	0.4610	7.00	18.95	20.46	14.58
Financials	Non-Bank Financial	Insurance (Property-Casualty)	0.3946	4.00	18.95	36.79	14.58
Financials	REIT	REIT-Factory Outlet Centers	0.1566	13.00	18.95	42.68	14.58
Financials	Non-Bank Financial	Insurance (Life/Health)	0.1317	5.00	18.95	11.82	14.58
Consumer Discretionary	Leisure Cyclical	Restaurants	0.1087	2.00	18.95	3.90	14.58
Financials	Non-Bank Financial	Insurance Brokers	0.1043	3.00	18.95	3.31	14.58
Financials	Non-Bank Financial	Financial (Diversified)	0.0774	27.00	18.95	322.08	14.58
Consumer Staples	Consumer Staples	Distributors (Food & Health)	0.0743	5.00	18.95	47.61	14.58
Materials	Metals	Containers-Metal & Glass	0.0577	4.00	18.95	16.16	14.58
Consumer Discretionary	Media Cyclical	Broadcasting (TV, Radio, Cable)	0.0422	6.00	18.95	1.23	14.58
South Africa							
Energy	Energy	Oil & Gas (Exploration & Production)	0.4498	2.00	4.40	0.12	6.75
Consumer Staples	Consumer Staples	Distributors (Food & Health)	0.3315	5.00	4.40	19.01	6.75
Telecommunication Services	Cellular/Wireless Telecom	Cellular/Wireless Telecomms	0.2608	2.00	4.40	26.23	6.75
Consumer Discretionary	Retail	Retail Specialty-Apparel	0.2606	3.00	4.40	4.12	6.75
Health Care	Drugs/Pharmaceuticals	Health Care (Drugs/Pharms)	0.1811	3.00	4.40	4.62	6.75
Consumer Discretionary	Autos/Auto Parts	Auto Parts & Equipment	0.1776	5.00	4.40	3.27	6.75
Financials	REIT	REIT-Factory Outlet Centers	0.1702	17.00	4.40	15.46	6.75
Consumer Staples	Food & Beverages	Foods	0.1662	10.00	4.40	9.51	6.75
Consumer Staples	Consumer Staples	Retail Stores-Drug Store	0.1351	2.00	4.40	6.43	6.75
Materials	Mining	Metals Mining (other)	0.1237	4.00	4.40	5.47	6.75
Brazil							
Technology	High Tech - Software	Computer Software	0.4085	2.00	5.06	4.76	15.37
Consumer Discretionary	Consumer Cyclical	Textiles	0.0480	8.00	5.06	0.35	15.37
Industrials	Transportation	Miscellaneous Transportation	0.0437	3.00	5.06	13.25	15.37
Industrials	Transportation	Railroads	0.0434	9.00	5.06	27.75	15.37
Consumer Discretionary	Leisure Cyclical	Leisure Time (Products/Services)	0.0382	4.00	5.06	1.83	15.37
Materials	Paper & Forest Products	Paper & Forest Products	0.0213	4.00	5.06	16.32	15.37
Utilities	Electric Utilities	Electric Companies	0.0176	28.00	5.06	69.82	15.37
Financials	Real Estate	Real Estate	0.0173	24.00	5.06	30.81	15.37
Consumer Discretionary	Retail	Retail Specialty-Apparel	0.0157	4.00	5.06	17.34	15.37
Consumer Discretionary	Consumer Cyclical	Services (Commercial Consum)	0.0149	11.00	5.06	17.19	15.37

This table reports the top 10 industries with the highest levels of intra-industry common ownership for 12 countries: United States, Euro Area, United Kingdom, France, Germany, Italy, Japan, China, India, Australia, South Africa, and Brazil. It also shows the sector and macro-sector to which an industry belongs, the average value of pairwise $\kappa_{Banzhaf}$ for the industry, the number of firms in the industry, the average number of firms per industry, the market cap. of the industry (USD billion), and the average market cap. of industries (USD billion). The Euro Area is treated as a single country and comprises the following countries: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, and Spain.

Table 6. Firm-Level Drivers

Method of Estimation: OLS												
Dependent Variable:												
	Equal Weighted Average Kappa (UO)						Equal Weighted Average Kappa (CO)					
	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)	(2.7)	(2.8)	(2.9)	(2.10)	(2.11)	(2.12)
Log Market Capitalization	0.0102*** (0.0027)	0.0031*** (0.0010)	0.0124*** (0.0026)	0.0107*** (0.0027)	0.0050* (0.0027)	0.0067** (0.0027)	0.0123*** (0.0027)	0.0041*** (0.0011)	0.0158*** (0.0027)	0.0128*** (0.0027)	0.0064** (0.0028)	0.0081*** (0.0029)
Log Age	0.0023 (0.0032)	0.0017* (0.0009)	0.0000 (0.0037)	0.0019 (0.0032)	-0.0012 (0.0024)	0.0038 (0.0023)	0.0044 (0.0031)	0.0026*** (0.0009)	0.0018 (0.0037)	0.0039 (0.0031)	0.0004 (0.0024)	0.0060*** (0.0021)
Ownership Concentration (C5)	-0.0603*** (0.0134)	-0.0225*** (0.0057)	-0.0986*** (0.0237)	-0.0555*** (0.0140)	-0.0463*** (0.0091)	-0.0616*** (0.0120)	-0.0768*** (0.0161)	-0.0266*** (0.0076)	-0.1258*** (0.0270)	-0.0713*** (0.0169)	-0.0612*** (0.0126)	-0.0764*** (0.0145)
Foreign Inv. Holdings				-0.0310* (0.0155)						-0.0359** (0.0164)		
Big Three Holdings					0.9529*** (0.1736)						1.0694*** (0.1621)	
Govt. Inst. Holdings						0.8659** (0.3240)						0.9847*** (0.3432)
Individual/Fam. Holdings						-0.0129*** (0.0041)						-0.0218*** (0.0063)
Log GDP per Capita	-0.0074* (0.0039)	-0.0018* (0.0010)	-0.0095 (0.0084)	-0.0071* (0.0037)	-0.0052 (0.0047)	-0.0041** (0.0020)	-0.0086* (0.0043)	-0.0030 (0.0023)	-0.0098 (0.0083)	-0.0083** (0.0041)	-0.0062 (0.0051)	-0.0049* (0.0026)
Sample	Full Sample	Small Firms	Large Firms	Full Sample	Full Sample	Full Sample	Full Sample	Small Firms	Large Firms	Full Sample	Full Sample	Full Sample
Regional FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Observations	1,528,422	764,229	764,193	1,528,422	1,528,422	1,528,422	1,498,049	753,088	744,961	1,498,049	1,498,049	1,498,049
Adj. R-Squared	0.333	0.138	0.335	0.340	0.458	0.450	0.333	0.107	0.343	0.338	0.420	0.418
# Country Clusters	48	48	48	48	48	48	48	48	48	48	48	48

This table reports the results obtained from OLS regressions. The dependent variables are the equal-weighted average of the weights that a firm places on all the N-1 other firms in the country (UO) and only those that also belong to the same industry (CO). The key explanatory variables are the logarithm of market capitalization, the logarithm of firm age, ownership concentration measured by the ownership held by the top 5 largest shareholders of the firm, and the logarithm of GDP per capita. We further include other regressors like the ownership by foreign investors, the Big Three, government institutions, and individuals/families. Fixed effects are included as specified in the table. Standard errors are robust and clustered at the country level, they are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7. Antitrust Laws

Method of Estimation:						OLS					
Dependent Variable:		Equal Weighted Average Kappa (UO)					Equal Weighted Average Kappa (CO)				
		(6.1)	(6.2)	(6.3)	(6.4)	(6.5)	(6.6)	(6.7)	(6.8)	(6.9)	(6.10)
Competition Law Index (CLI)		-0.0234* (0.0136)					-0.0208 (0.0144)				
CLI - Abuse of Dominance Provisions			-0.0291** (0.0131)					-0.0306** (0.0143)			
CLI - Anticompetitive Agreement Provisions				-0.0328** (0.0126)		-0.0380*** (0.0104)			-0.0324** (0.0132)		-0.0394*** (0.0104)
CLI - Merger Control Provisions					0.0102 (0.0186)	0.0228** (0.0092)				0.0182 (0.0173)	0.0312*** (0.0085)
Control Variables		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional FE		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Observations		1,469,512	1,469,512	1,469,512	1,469,512	1,469,512	1,439,545	1,439,545	1,439,545	1,439,545	1,439,545
Adj. R-Squared		0.342	0.345	0.354	0.335	0.360	0.337	0.341	0.345	0.336	0.351
# Country Clusters		47	47	47	47	47	47	47	47	47	47

This table reports the results obtained from OLS regressions. The dependent variables are the equal-weighted average of the weights that a firm places on all the N-1 other firms in the country (UO) and only those that also belong to the same industry (CO). The key explanatory variables are: the competition law index, which ranges from 0 to 1 and captures provisions of a country's competition law; the abuse of dominance provisions index, which ranges from 0 to 1 and captures general prohibition of anticompetitive abuses of a dominant position; the anticompetitive agreement provisions index, which ranges from 0 to 1 and captures limits to both horizontal and vertical agreements between companies by a country's competition law; and merger control provisions index, which ranges from 0 to 1 and captures merger control provisions of a country's competition law ([Bradford and Chilton \(2018\)](#)). We include these variables by means of using their average values over the 1980-2005 period. Control variables and fixed effects are included as specified in the table. Standard errors are robust and clustered at the country level, they are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8. Market Entry Regulation

Method of Estimation:		OLS	
Dependent Variable:	Equal Weighted Average Kappa (UO)		Equal Weighted Average Kappa (CO)
	(7.1)	(7.2)	(7.3) (7.4)
Log # Proc. to Start Business (Avg.)	0.0215** (0.0083)		0.0229*** (0.0085)
Log #Days. to Start Business (Avg.)		0.0097* (0.0052)	0.0104* (0.0054)
Control Variables	Yes	Yes	Yes Yes
Regional FE	Yes	Yes	Yes Yes
Industry FE	Yes	Yes	Yes Yes
Year-Quarter FE	Yes	Yes	Yes Yes
# Observations	1,073,448	1,073,448	1,045,216 1,045,216
Adj. R-Squared	0.352	0.338	0.329 0.321
# Country Clusters	48	48	48 48

This table reports the results obtained from OLS regressions. The dependent variables are the equal-weighted average of the weights that a firm places on all the N-1 other firms in the country (UO) and only those that also belong to the same industry (CO). The key explanatory variables are: the logarithm of the number of administrative procedures required by the average entrepreneur to start and operate a business in each year and the logarithm of the number of days that it takes for the average entrepreneur to start up and formally operate a business in each year. These variables are obtained from the World Bank's Doing Business database. Control variables and fixed effects are included as specified in the table. Standard errors are robust and clustered at the country level, they are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9. Labor Laws

Method of Estimation:						OLS				
Dependent Variable:						Equal Weighted Average Kappa (UO)				
	(8.1)	(8.2)	(8.3)	(8.4)	(8.5)	Equal Weighted Average Kappa (CO)				
	(8.1)	(8.2)	(8.3)	(8.4)	(8.5)	(8.6)	(8.7)	(8.8)	(8.9)	(8.10)
Employment Laws	-0.0389*			-0.0461**	-0.0275	-0.0550**			-0.0638***	-0.0541**
	(0.0195)			(0.0180)	(0.0170)	(0.0216)			(0.0202)	(0.0208)
Collective Relations		-0.0531**			-0.0440*		-0.0421			-0.0227
		(0.0229)			(0.0221)		(0.0276)			(0.0246)
Social Security			0.0462	0.0533	0.0522			0.0511	0.0613	0.0606
			(0.0528)	(0.0536)	(0.0485)			(0.0507)	(0.0521)	(0.0494)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Observations	1,507,811	1,507,811	1,507,811	1,507,811	1,507,811	1,479,856	1,479,856	1,479,856	1,479,856	1,479,856
Adj. R-Squared	0.342	0.346	0.343	0.349	0.354	0.342	0.340	0.341	0.348	0.348
# Country Clusters	44	44	44	44	44	44	44	44	44	44

This table reports the results obtained from OLS regressions. The dependent variables are the equal-weighted average of the weights that a firm places on all the N-1 other firms in the country (UO) and only those that also belong to the same industry (CO). The key explanatory variables are: the employment laws index, which ranges from 0 to 1 and captures labor protection laws; the collective relations index, which ranges from 0 to 1 and captures labor union power and collective disputes; and the social security index, which ranges from 0 to 1 and measures social security benefits (Botero et al. (2004)). Control variables and fixed effects are included as specified in the table. Standard errors are robust and clustered at the country level, they are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 10. Investor Protection

Method of Estimation:		OLS				
Dependent Variable:	Equal Weighted Average Kappa (UO)			Equal Weighted Average Kappa (CO)		
	(9.1)	(9.2)	(9.3)	(9.4)	(9.5)	(9.6)
Anti-Self-Dealing Index	0.0361*** (0.0125)			0.0360** (0.0154)		
Ex Ante Private Self-Dealing		0.0287** (0.0110)			0.0270** (0.0122)	
Ex Post Private Self-Dealing		-0.0233 (0.0272)			-0.0173 (0.0291)	
Creditors Rights			-0.0047 (0.0066)			-0.0067 (0.0077)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Regional FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
# Observations	1,486,283	1,486,283	1,528,422	1,458,823	1,458,823	1,498,049
Adj. R-Squared	0.349	0.357	0.335	0.354	0.357	0.335
# Country Clusters	43	43	48	43	43	48

This table reports the results obtained from OLS regressions. The dependent variables are the equal-weighted average of the weights that a firm places on all the N-1 other firms in the country (UO) and only those that also belong to the same industry (CO). The key explanatory variables are: the anti-self-dealing index, which is a variable that takes values from 0 to 1 and captures disclosure requirements for self-dealing transactions by managers and controlling shareholders; the ex-ante and ex-post private control of self-dealing index, both indexes range from 0 to 1 ([Djankov et al. \(2008\)](#)); and the creditor rights index, which ranges from 0 to 4 ([Djankov et al. \(2007\)](#)). We include the latter using its average value from 1978 to 2003. Control variables and fixed effects are included as specified in the table. Standard errors are robust and clustered at the country level, they are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 11. ESG Disclosure Regulations

Method of Estimation:					OLS			
Dependent Variable:					Equal Weighted Average Kappa (UO)		Equal Weighted Average Kappa (CO)	
	(11.1)	(11.2)	(11.3)	(11.4)	(11.5)	(11.6)	(11.7)	(11.8)
Mandatory ESG Disclosure (MESGD)	-0.0045 (0.0101)				-0.0077 (0.0100)			
MESGD - All at Once		-0.0046 (0.0121)				-0.0080 (0.0119)		
MESGD - Gradual		-0.0042 (0.0055)				-0.0067 (0.0074)		
MESGD - Government			-0.0137** (0.0059)				-0.0168** (0.0069)	
MESGD - Stock Exchange			-0.0002 (0.0141)				-0.0035 (0.0136)	
MESGD - Full Compliance				-0.0038 (0.0121)				-0.0067 (0.0119)
MESGD - Comply-or-Explain				-0.0068 (0.0049)				-0.0109* (0.0055)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Observations	1,519,662	1,519,662	1,519,662	1,519,662	1,490,040	1,490,040	1,490,040	1,490,040
Adj. R-Squared	0.336	0.336	0.339	0.336	0.336	0.336	0.338	0.336
# Country Clusters	46	46	46	46	46	46	46	46

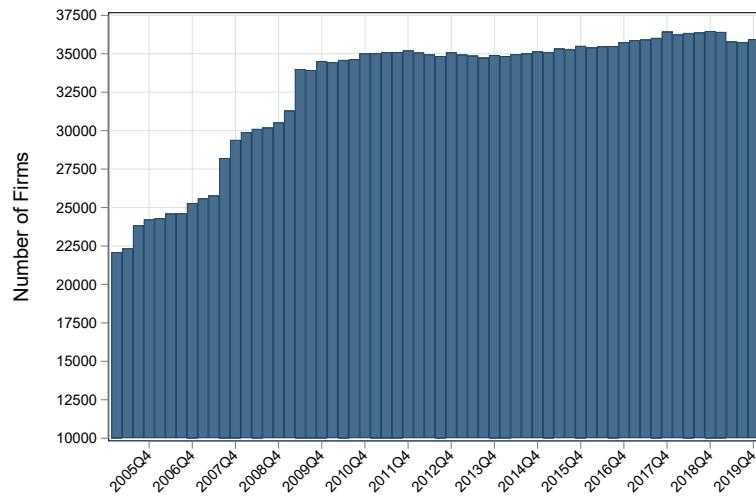
This table reports the results obtained from OLS regressions. The dependent variables are the equal-weighted average of the weights that a firm places on all the N-1 other firms in the country (UO) and only those that also belong to the same industry (CO). The key explanatory variables are: an indicator variable of ESG disclosure that takes a value of 1 starting from the first year in which a country introduced mandatory ESG disclosure, two indicator variables that capture whether mandatory ESG disclosure is implemented all at once or gradually, two indicator variables that capture whether mandatory ESG disclosure is issued by government institution or stock exchange, and two indicator variables that capture whether mandatory ESG disclosure is implemented on a full compliance or a comply-or-explain basis (Krueger et al. (2024)). Control variables and fixed effects are included as specified in the table. Standard errors are robust and clustered at the country level, they are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 12. Political Institution Quality

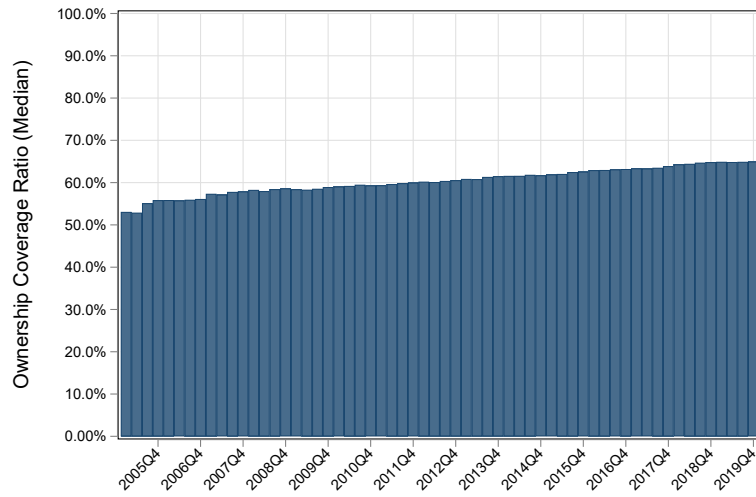
Method of Estimation:				OLS		
Dependent Variable:	Equal Weighted Average Kappa (UO)			Equal Weighted Average Kappa (CO)		
	(10.1)	(10.2)	(10.3)	(10.4)	(10.5)	(10.6)
Political Instability	0.0027 (0.0072)			-0.0025 (0.0101)		
Poor Regulatory Quality		0.0229* (0.0128)			0.0230* (0.0121)	
Corruption			0.0110 (0.0083)			0.0136 (0.0092)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Regional FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
# Observations	1,528,422	1,528,422	1,528,422	1,498,049	1,498,049	1,498,049
Adj. R-Squared	0.333	0.340	0.335	0.333	0.337	0.334
# Country Clusters	48	48	48	48	48	48

This table reports the results obtained from OLS regressions. The dependent variables are the equal-weighted average of the weights that a firm places on all the N-1 other firms in the country (UO) and only those that also belong to the same industry (CO). The key explanatory variables are indicator variables that capture: perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism (political instability); perceptions of the inability of the government to formulate and implement sound policies and regulations that permit and promote private sector development (poor regulatory quality); and perceptions of the extent to which public power is exercised for private gain (corruption). We construct these indicator variables using data from the World Bank's website (namely, from the Worldwide Governance Indicators) on the political stability, regulatory quality, and control of corruption indexes. For each index and every year, we group the countries in our sample into quartile buckets and create an indicator variable that takes a value of 1 for countries in the bottom quartile and zero otherwise. Control variables and fixed effects are included as specified in the table. Standard errors are robust and clustered at the country level, they are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

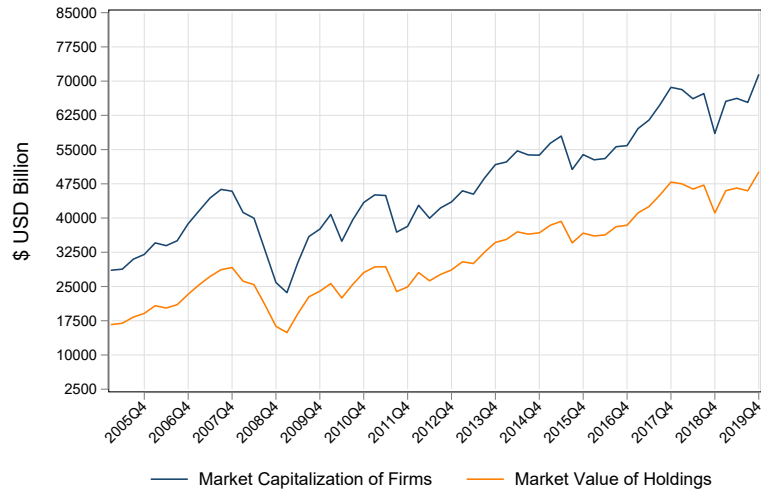
Appendix to
“Common Ownership Around The World”



(A) Number of covered firms



(B) Median ownership coverage ratio



(C) Market capitalization

Figure A1. Data Quality. This figure provides descriptions of the data quality. Panel A presents the number of firms covered in our sample for each quarter. Panel B illustrates the median ownership coverage ratio for each quarter. Panel C depicts the total market capitalization of the firms in our sample for each quarter, alongside the value of the holdings recorded in our data.

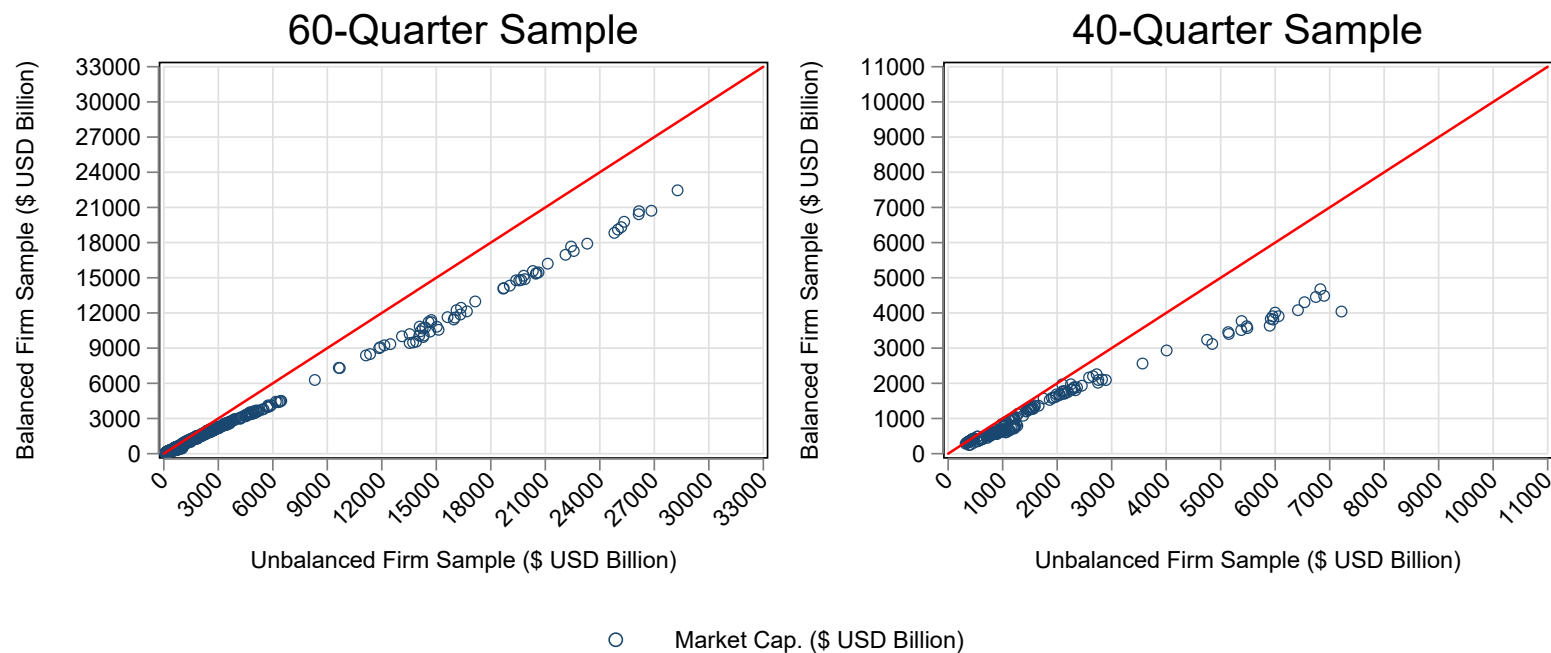


Figure A2. Is the Balanced Panel a Good Representation of the Country Samples? This figure illustrates the total market capitalization of each country-quarter combination, comparing values derived from a balanced panel with those from an unbalanced panel. The figure based on the 60-quarter sample depicts the comparison for the countries in our balanced panel of 60 quarters, which includes the United States, United Kingdom, countries in the Euro Area, and Japan. The Euro Area countries comprise Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, and Spain. The figure based on the 40-quarter sample presents the same comparison for the countries in our balanced panel of 40 quarters, including China, India, Australia, South Africa, and Brazil.

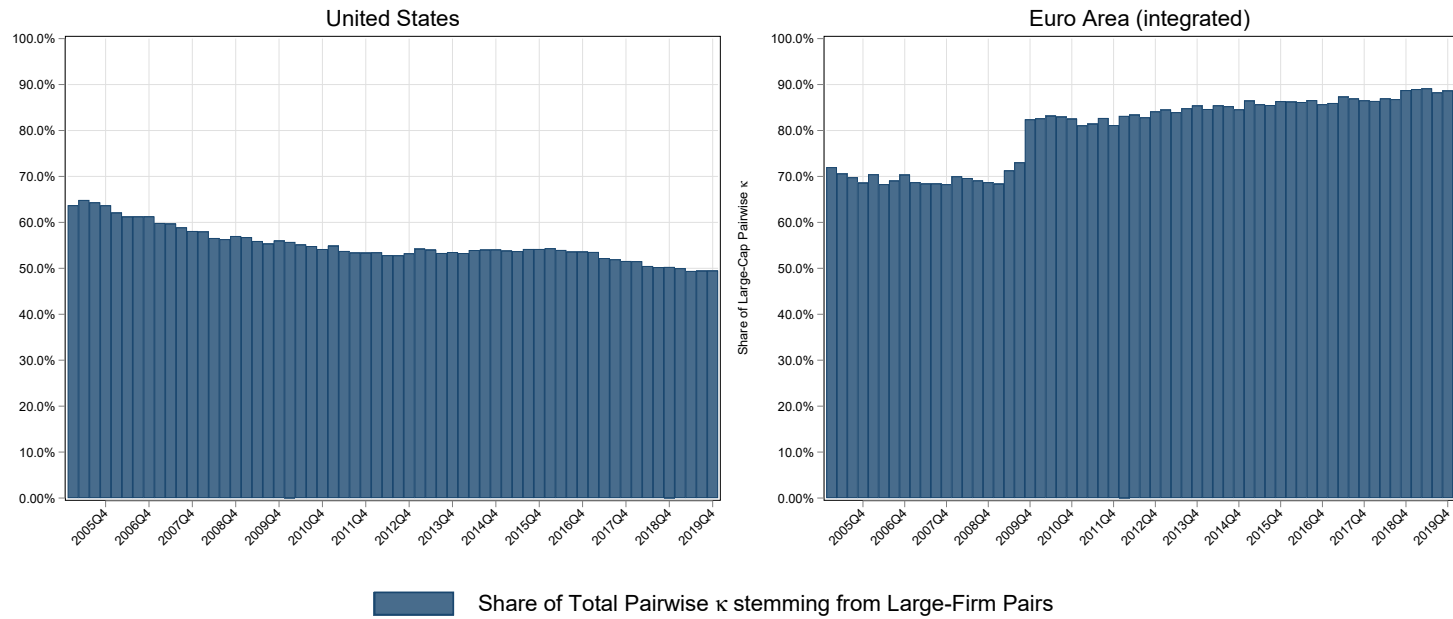


Figure A3A. Share of Total Pairwise $\kappa_{Banzhaf}$ stemming from Large-Firm Pairs. For each country-quarter combination, we calculate the sum of pairwise $\kappa_{Banzhaf}$ conditional on firm pairs where both firms are large and then divide it by the sum of pairwise $\kappa_{Banzhaf}$ using all firms in the country sample. To track changes in ownership over time, we use a balanced panel of firms for the United States (# firms = 1,588) and the Euro Area (# firms = 864). The Euro Area is treated as a single country and comprises the following countries: Austria (# firms = 32), Belgium (# firms = 63), Finland (# firms = 48), France (# firms = 270), Germany (# firms = 205), Ireland (# firms = 34), Italy (# firms = 108), Netherlands (# firms = 51), and Spain (# firms = 53). Large firms are those whose market capitalization is above the median in their country in each quarter. The blue bars represent the share of total pairwise $\kappa_{Banzhaf}$ stemming from large-firm pairs.

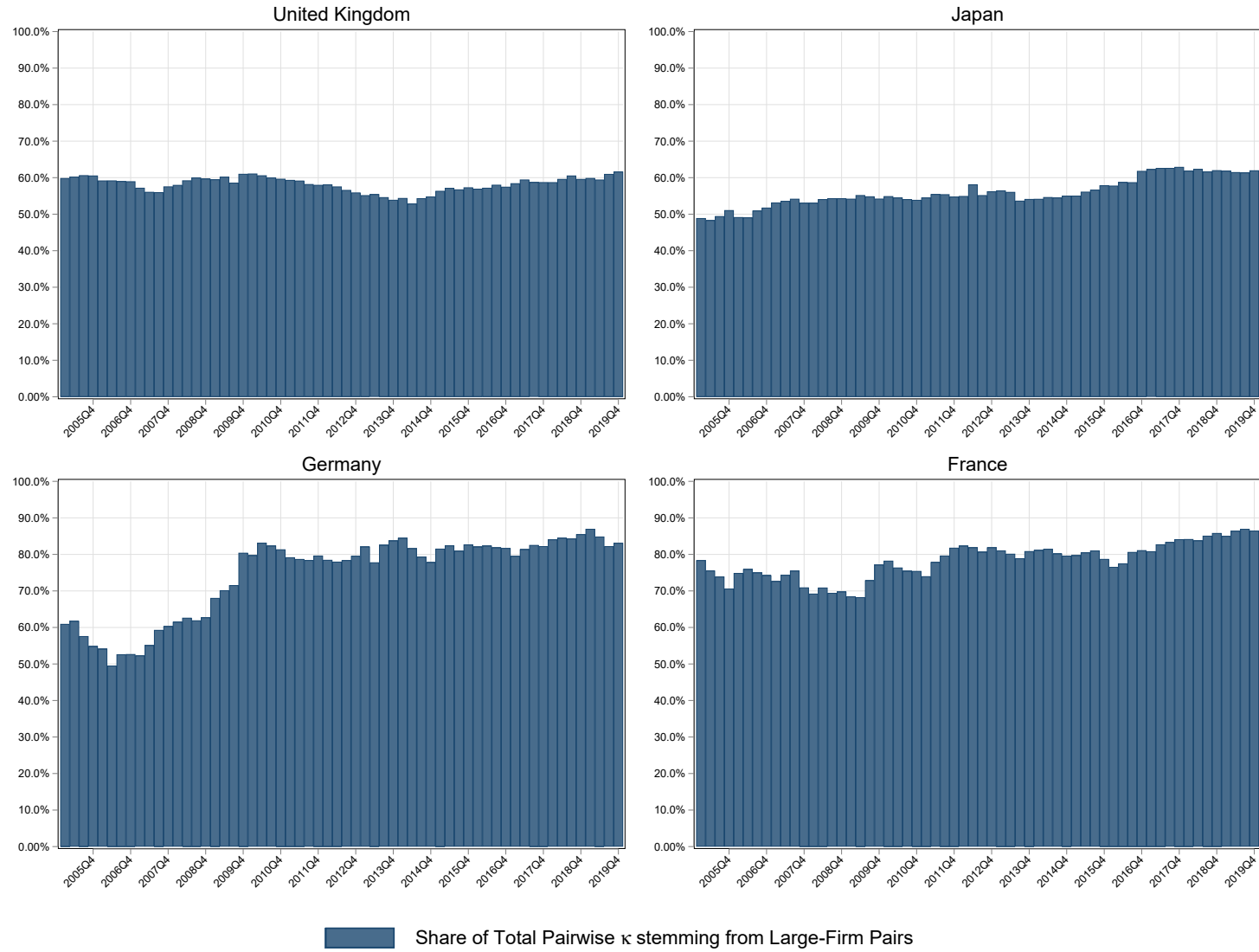


Figure A3B. Share of Total Pairwise $\kappa_{Banzhaf}$ stemming from Large-Firm Pairs. For each country-quarter combination, we calculate the sum of pairwise $\kappa_{Banzhaf}$ conditional on firm pairs where both firms are large and then divide it by the sum of pairwise $\kappa_{Banzhaf}$ using all firms in the country sample. To track changes in ownership over time, we use a balanced panel of firms for the United Kingdom (# firms = 573), Japan (# firms = 2,446), Germany (# firms = 205), and France (# firms = 270). Large firms are those whose market capitalization is above the median in their country in each quarter. The blue bars represent the share of total pairwise $\kappa_{Banzhaf}$ stemming from large-firm pairs.

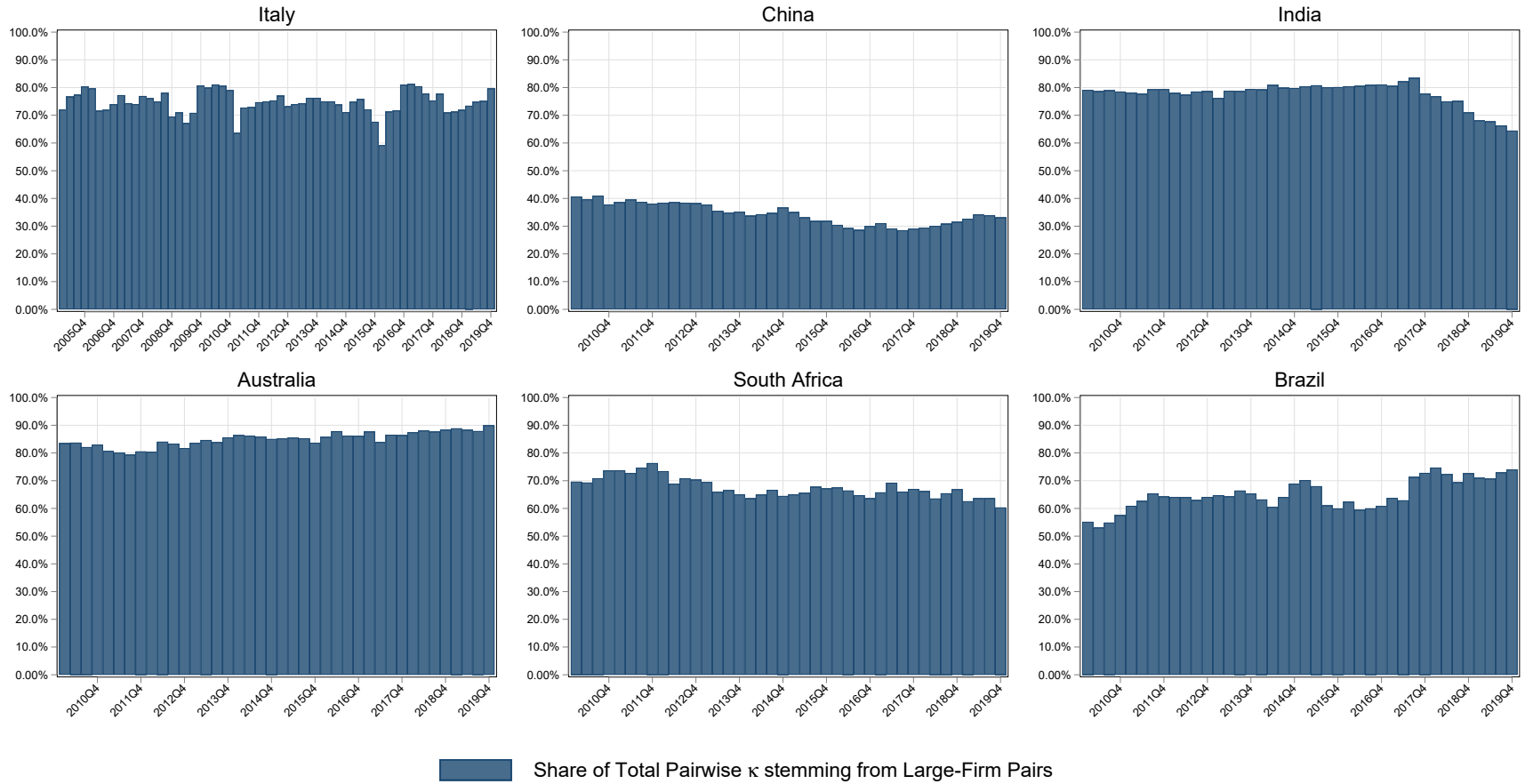


Figure A3C. Share of Total Pairwise $\kappa_{Banzhaf}$ stemming from Large-Firm Pairs. For each country-quarter combination, we calculate the sum of pairwise $\kappa_{Banzhaf}$ conditional on firm pairs where both firms are large and then divide it by the sum of pairwise $\kappa_{Banzhaf}$ using all firms in the country sample. To track changes in ownership over time, we use a balanced panel of firms for Italy (# firms = 108), China (# firms = 1,587), India (# firms = 2,502), Australia (# firms = 824), South Africa (# firms = 152), and Brazil (# firms = 178). Large firms are those whose market capitalization is above the median in their country in each quarter. The blue bars represent the share of total pairwise $\kappa_{Banzhaf}$ stemming from large-firm pairs.

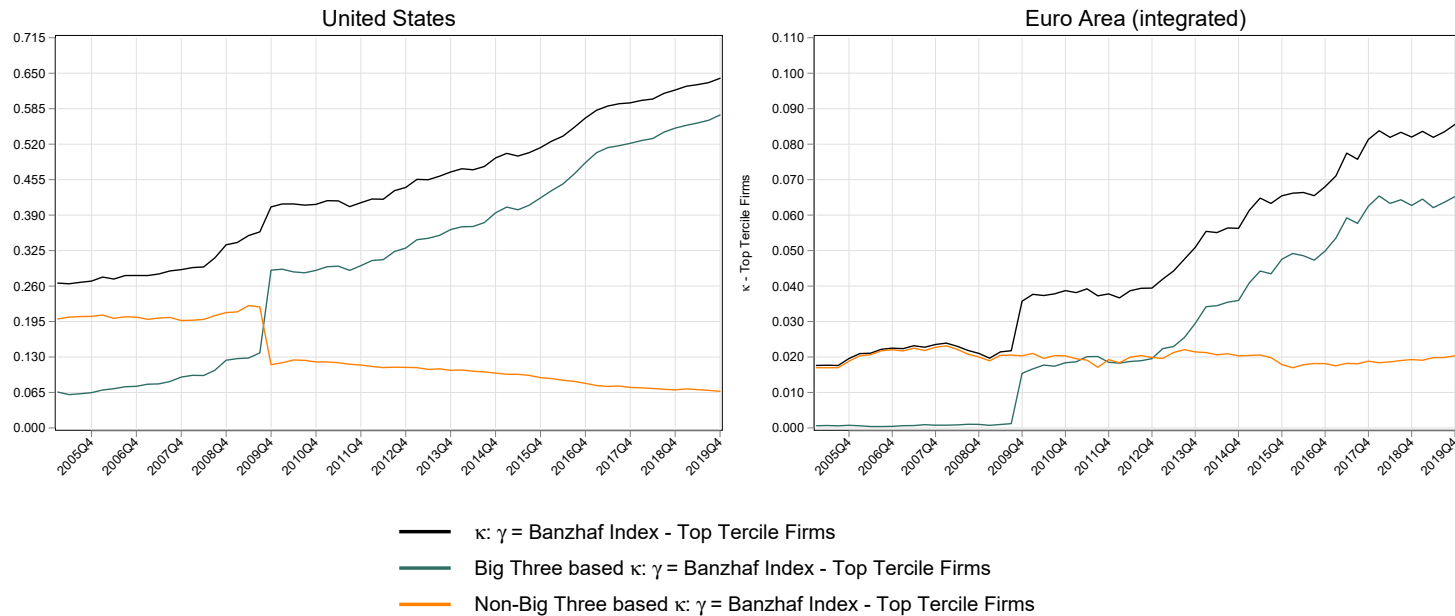


Figure A4A. Big Three Contribution to Universal Ownership (Top Tercile Firms). For firms whose market capitalization is in the top tercile in each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)) and a breakdown of it into two terms, one driven by the Big Three (BlackRock, Vanguard, and State Street) and another driven by shareholders other than the Big Three. To track changes in ownership over time, we use a balanced panel of firms for the United States (# firms = 1,588) and the Euro Area (# firms = 864). The Euro Area is treated as a single country and comprises the following countries: Austria (# firms = 32), Belgium (# firms = 63), Finland (# firms = 48), France (# firms = 270), Germany (# firms = 205), Ireland (# firms = 34), Italy (# firms = 108), Netherlands (# firms = 51), and Spain (# firms = 53). The solid black line shows the overall trend of the average pairwise $\kappa_{Banzhaf}$ for the restricted sample of firms. The solid green line shows the average pairwise $\kappa_{Banzhaf}$ generated by the Big Three. The solid orange line shows the average pairwise $\kappa_{Banzhaf}$ generated by other shareholders.

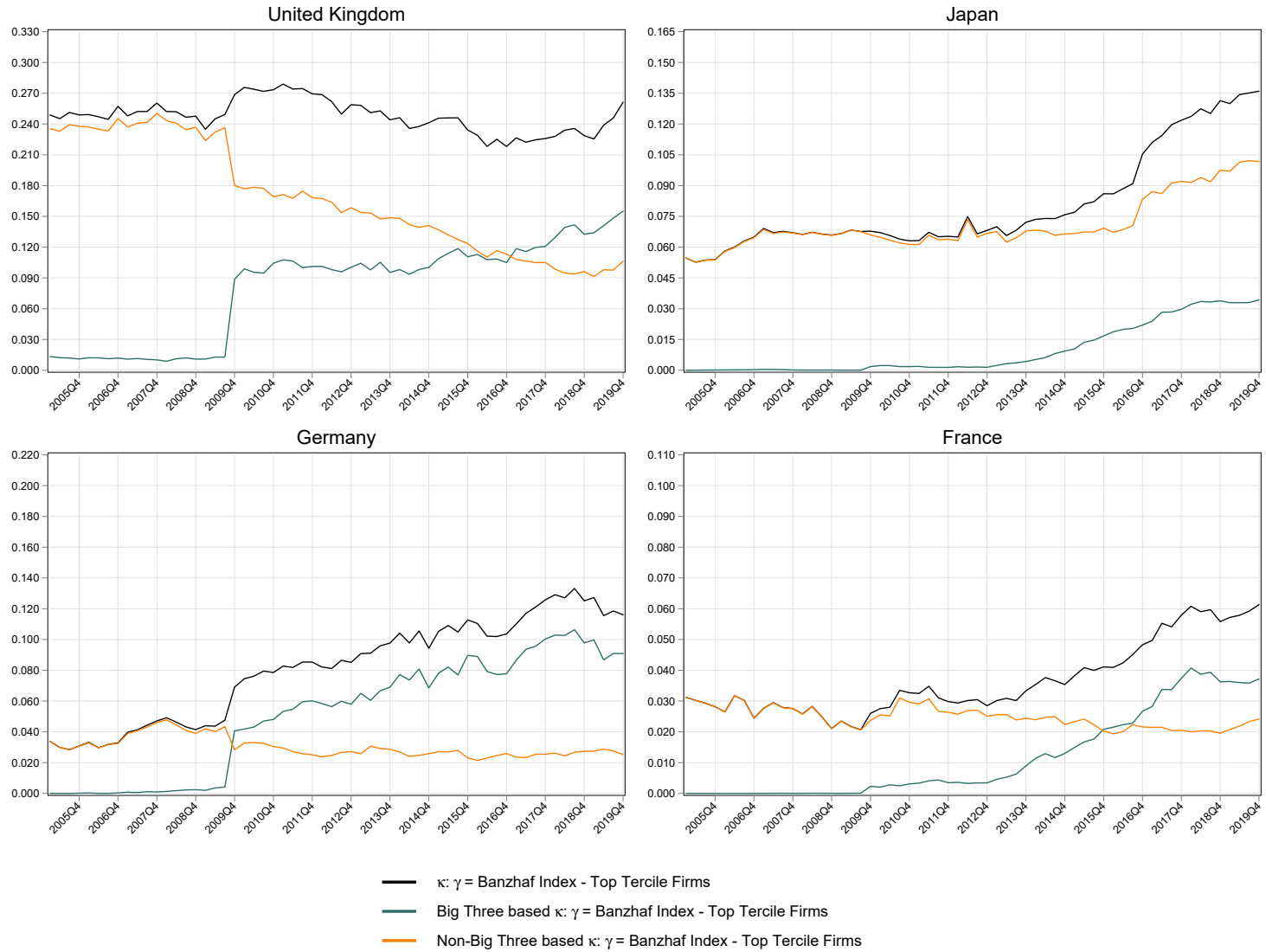


Figure A4B. Big Three Contribution to Universal Ownership (Top Tercile Firms). For firms whose market capitalization is in the top tercile in each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Bakus et al. (2021)) and a breakdown of it into two terms, one driven by the Big Three (BlackRock, Vanguard, and State Street) and another driven by shareholders other than the Big Three. To track changes in ownership over time, we use a balanced panel of firms for the United Kingdom (# firms = 573), Japan (# firms = 2,446), Germany (# firms = 205), and France (# firms = 270). The solid black line shows the overall trend of the average pairwise $\kappa_{Banzhaf}$ for the restricted sample of firms. The solid green line shows the average pairwise $\kappa_{Banzhaf}$ generated by the Big Three. The solid orange line shows the average pairwise $\kappa_{Banzhaf}$ generated by other shareholders.

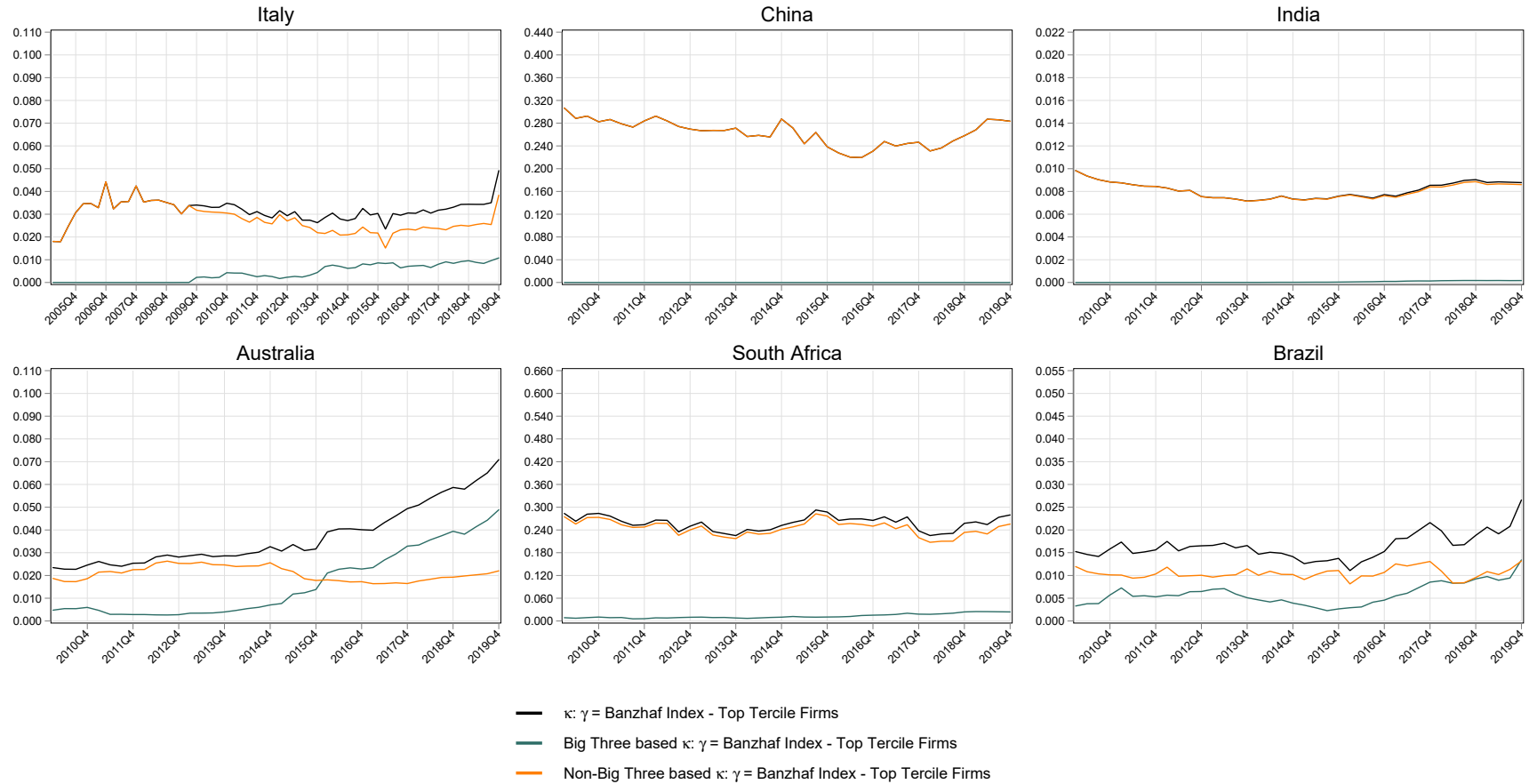


Figure A4C. Big Three Contribution to Universal Ownership (Top Tercile Firms). For firms whose market capitalization is in the top tercile in each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)) and a breakdown of it into two terms, one driven by the Big Three (BlackRock, Vanguard, and State Street) and another driven by shareholders other than the Big Three. To track changes in ownership over time, we use a balanced panel of firms for Italy (# firms = 108), China (# firms = 1,587), India (# firms = 2,502), Australia (# firms = 824), South Africa (# firms = 152), and Brazil (# firms = 178). The solid black line shows the overall trend of the average pairwise $\kappa_{Banzhaf}$ for the restricted sample of firms. The solid green line shows the average pairwise $\kappa_{Banzhaf}$ generated by the Big Three. The solid orange line shows the average pairwise $\kappa_{Banzhaf}$ generated by other shareholders.

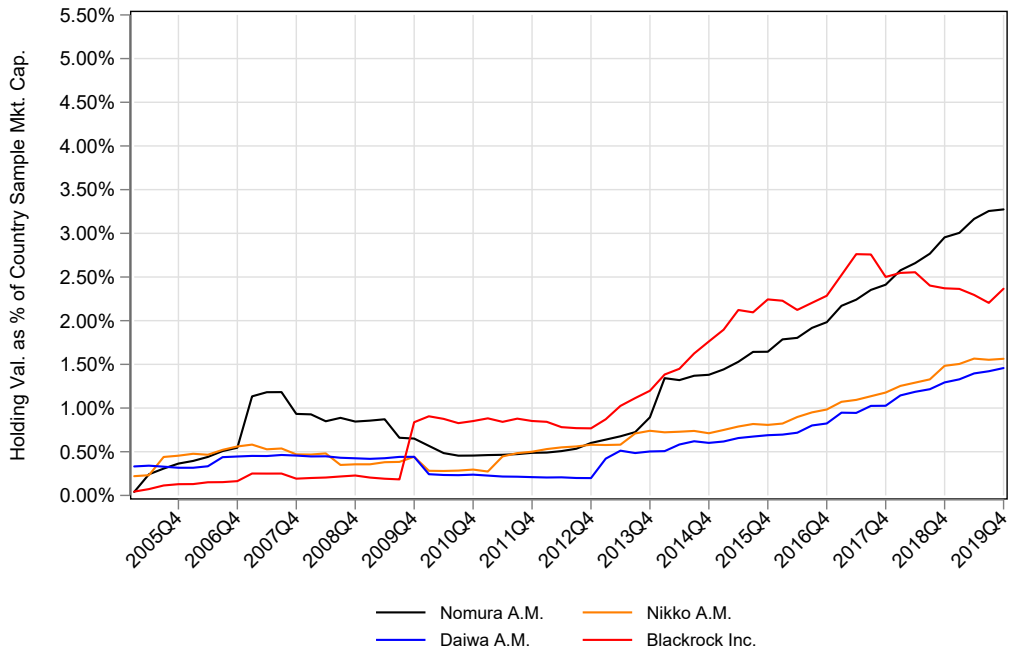


Figure A3. Did the Japanese ETF Purchasing program enhance Universal and Common Ownership?
 To provide evidence on the impact of the Bank of Japan’s ETF purchasing program, we analyze the evolution of holdings by the so-called “Big Three” Japanese institutional investors (Nomura, Nikko, and Daiwa) and BlackRock as a fraction of Japan’s total market capitalization in a balanced panel.

Table A1. Descriptive Statistics

Countries	# Unique Firms	Ownership Ratio			Market Cap. (\$USD bn)			Holdings Value (\$USD bn)		
		Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
United States	13,219	0.6391	0.6848	0.2807	3.0880	0.1206	18.5991	2.4323	0.0650	12.7974
Canada	5,114	0.3468	0.2987	0.2207	0.5764	0.0109	3.9817	0.3509	0.0027	2.5468
United Kingdom	3,210	0.6218	0.6552	0.2258	1.7522	0.0789	11.8565	1.0283	0.0468	5.1614
France	1,155	0.6781	0.7148	0.2121	3.0435	0.1043	12.3314	1.8376	0.0677	7.2907
Germany	1,059	0.5914	0.6313	0.2530	2.8107	0.1136	10.9803	1.5938	0.0643	5.6220
Italy	526	0.6565	0.7072	0.1985	2.3343	0.2162	8.6903	1.3761	0.1444	4.8015
Spain	357	0.6652	0.7095	0.2227	4.1564	0.2946	13.0660	2.3241	0.1893	6.7800
Netherlands	252	0.6098	0.6428	0.2276	4.3498	0.6531	10.4516	2.6223	0.3639	6.5106
Belgium	197	0.5503	0.5843	0.2363	1.3037	0.2381	3.7092	0.7744	0.1332	2.4214
Ireland	151	0.6350	0.6634	0.2432	5.5480	0.4627	13.9320	4.2669	0.2832	11.4579
Austria	117	0.6770	0.7290	0.2254	1.8336	0.3664	4.8925	1.1179	0.2294	2.3364
Finland	158	0.6470	0.6784	0.1915	2.3787	0.2070	10.3600	1.1398	0.1253	4.2288
Sweden	597	0.5564	0.6071	0.2446	0.7996	0.0954	2.9215	0.5140	0.0495	1.9498
Norway	377	0.6203	0.6657	0.2324	1.4983	0.1361	8.3157	1.0417	0.0795	5.3447
Denmark	202	0.4843	0.4855	0.2385	1.2167	0.0940	3.5472	0.6621	0.0369	2.0482
Switzerland	343	0.5666	0.5941	0.2218	4.9352	0.4808	20.7595	2.3061	0.2621	7.6415
Poland	522	0.6745	0.7399	0.2448	0.4028	0.0415	1.4899	0.3087	0.0269	1.1591
Russian Federation	670	0.7606	0.8221	0.2102	2.0744	0.0843	10.5798	1.3225	0.0627	6.8585
Greece	288	0.6493	0.6852	0.1829	0.2626	0.0177	0.9358	0.1694	0.0109	0.6418
Croatia	242	0.6613	0.7207	0.2450	0.1247	0.0151	0.5324	0.0947	0.0092	0.4532
Romania	309	0.7017	0.7691	0.2395	0.2088	0.0104	0.8711	0.1399	0.0071	0.7039
Japan	5,113	0.5335	0.5342	0.1692	1.2295	0.1309	5.6192	0.5748	0.0649	2.5009
China	3,964	0.5963	0.6243	0.1877	1.4561	0.6597	5.7049	0.9548	0.3609	3.7037
India	5,256	0.6691	0.7027	0.1955	0.3802	0.0057	2.7658	0.2990	0.0037	2.1789
Hong Kong	1,711	0.6081	0.6572	0.1878	1.2623	0.1120	7.6330	0.8907	0.0647	5.9274
Taiwan	1,804	0.4617	0.4483	0.1756	0.5868	0.0971	3.7396	0.2945	0.0404	1.8661
South Korea	2,821	0.4961	0.5021	0.2009	0.6420	0.0814	5.0258	0.3725	0.0361	2.7875
Malaysia	1,157	0.6965	0.7290	0.1668	0.4543	0.0415	1.8871	0.3586	0.0281	1.4915
Indonesia	616	0.7444	0.7767	0.1670	0.6859	0.1018	2.6863	0.5269	0.0711	2.1842
Singapore	941	0.6515	0.6822	0.1768	0.5846	0.0559	2.8167	0.3770	0.0342	1.7680
Thailand	839	0.5197	0.4436	0.2299	1.2474	0.1200	4.8527	0.4731	0.0510	2.2484
Vietnam	1,484	0.5227	0.5384	0.2315	0.0955	0.0074	0.6211	0.0685	0.0033	0.5091
Philippines	249	0.6828	0.7232	0.2083	1.0282	0.1382	2.3696	0.7416	0.0938	1.7170
Australia	2,809	0.5014	0.4904	0.2147	0.5574	0.0231	3.5394	0.2098	0.0106	0.9579
New Zealand	191	0.5658	0.5673	0.2247	0.5064	0.0986	1.0607	0.2349	0.0518	0.4574
Continued on next page										

Countries	# Unique Firms	Ownership Ratio			Market Cap. (\$USD bn)			Holdings Value (\$USD bn)		
		Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
Brazil	429	0.8056	0.8561	0.1939	2.7942	0.3657	17.0272	1.9859	0.2904	8.5566
Mexico	103	0.5827	0.6980	0.3031	3.1577	0.6882	6.8778	2.1315	0.3117	5.2623
Chile	219	0.8257	0.8818	0.1826	1.2264	0.2079	2.8668	0.9851	0.1817	2.3208
Colombia	82	0.8438	0.8959	0.1618	2.1273	0.2487	7.9420	1.9191	0.1988	7.4436
Peru	142	0.7764	0.8706	0.2290	0.9382	0.0692	3.1352	0.8097	0.0508	2.9202
South Africa	500	0.6036	0.6339	0.2223	1.4179	0.1607	4.6990	0.8891	0.0886	2.8132
Egypt	313	0.6763	0.7185	0.2195	0.2447	0.0407	0.6782	0.1694	0.0272	0.4537
Morocco	86	0.7954	0.8205	0.1223	0.8335	0.1410	2.0507	0.6874	0.1153	1.7201
Israel	811	0.6933	0.7484	0.1935	0.3035	0.0361	1.6124	0.1854	0.0251	0.8005
United Arab Emirates	132	0.5493	0.5690	0.2201	1.6590	0.2902	4.3489	0.9640	0.1404	2.6434
Saudi Arabia	190	0.4240	0.4250	0.2163	2.8685	0.4827	8.0983	1.6989	0.1962	5.8635
Kuwait	224	0.5465	0.5419	0.2217	0.6356	0.1019	3.8483	0.3315	0.0536	3.0931
Oman	136	0.6587	0.6696	0.2081	0.1778	0.0398	0.4129	0.1073	0.0260	0.2474
Jordan	262	0.7642	0.8005	0.1681	0.1161	0.0158	0.5436	0.0896	0.0120	0.3937
All Countries	61,649	0.5851	0.6075	0.2388	1.4344	0.0782	9.7221	0.9513	0.0407	6.2445

This table reports the number of unique firms by country over the 2005Q1-2019Q4 period and summary statistics (mean, median, and standard deviation) on the following firm-level characteristics: the ownership ratio (number of recorded shares, divided by the number of shares outstanding), the market capitalization (in \$USD billion), and the market value of the recorded holdings (in \$USD billion). The last row of this table shows the same summary statistics for the full sample.

Table A2. Owner Classification

Owner Classifications	Owner Type Names
Individual/Family	Individual Investors Foundations
Institutional Investor	Pension Funds Insurance Companies Investment Advisors Hedge Funds Endowment Funds Bank And Trust Corporations Holding Companies
Government Institution	Government Agency Sovereign Wealth Fund
Other	Private Equity Venture Capital Research Firms Any Other Owner Type

This table outlines how we classify investors based on the reported owner type of each shareholder in the Thomson Reuters Global Ownership database.

Table A3. Example of Firms whose Largest Owners are not Institutional Investors - 2019Q4

Countries	Firm Name	Largest Owner	Share (%)
United States	Oracle Corp.	Lawrence Ellison	35.50
United States	Tesla Inc.	Elon Musk	18.83
United States	Amazon.com Inc.	Jeffrey Bezos	15.54
United Kingdom	Anglo American plc	Public Investment Corporation SOC, Ltd.	11.26
France	Christian Dior SE	Arnault Family	97.50
France	Hermes International SCA	Hermes Family	66.70
France	L'Oreal SA	Bettencourt Meyers Family	33.28
Germany	Bayerische Motoren Werke (BMW) AG	Stefan Norbert Quandt	25.83
Germany	Mercedes Benz Group AG	Shufu Li	9.69
Italy	Enel SpA	Government of Italy	23.58
Spain	Industria de Diseño Textil S.A.	Amancio Ortega	59.29
Netherlands	Heineken NV	Heineken Family	50.01
Japan	Softbank Group Corp.	Masayoshi Son	22.13
Japan	Fast Retailing Co Ltd.	Tadashi Yanai	19.18
China	Kweichow Moutai Co Ltd.	Government Of China	66.51
China	Industrial Bank Co. Ltd.	Government Of China	38.49
India	State Bank of India	Government of India	56.92
India	Kotak Mahindra Bank Ltd.	Uday Kotak	29.67
Brazil	Petroleo Brasileiro SA Petrobras	Government of Brazil	50.26
Brazil	Banco do Brasil SA	Government of Brazil	50.00

This table portrays some examples of the case where the largest shareholder of a sizeable firm is not an institutional investor. First, we construct a list of the 500 largest firms around the world in 2019Q4 based on their market capitalization. Then, we restricted our sample to cases where the largest shareholder is not an institutional investor and took some examples for ease of exposition. In all cases, the largest shareholders are individuals/families or government institutions.

Table A4. Variables Description

Variables	Definitions
<i>Firm Level Variables (continuous variables are winsorized at the 5% level)</i>	
Equal Weighted Average Kappa (UO)	Average of the weights that the shareholders of a firm place on the profits of the N - 1 other firms in the country. We assume that a shareholder's weight in the objective function of a firm is proportional to her Banzhaf voting power index, which measures the number of coalitions in which the shareholder would be pivotal in a corporate election.
Equal Weighted Average Kappa (CO)	Average of the weights that the shareholders of a firm place on the profits of the other firms in the same country and industry. We assume that a shareholder's weight in the objective function of a firm is proportional to her Banzhaf voting power index, which measures the number of coalitions in which the shareholder would be pivotal in a corporate election.
Ownership Concentration (C5)	Ownership by the five largest shareholders of a firm, which is calculated using the Thomson Reuters Global Ownership database.
Foreign Inv. Holdings	Ownership by foreign investors, which is calculated using the Thomson Reuters Global Ownership database.
Big Three Holdings	Ownership by the Big Three institutional investors (BlackRock, Vanguard and State Street), which is calculated using the Thomson Reuters Global Ownership database.
Govt. Inst. Holdings	Ownership by government institutions, which is calculated using the Thomson Reuters Global Ownership database.
Individual/Fam. Holdings	Ownership by individuals or families, which is calculated using the Thomson Reuters Global Ownership database.
Log Market Capitalization	Logarithm of a firm's market capitalization in USD billion. The latter is calculated using the Thomson Reuters Global Ownership database.
Log Age	Logarithm of a firm's age, which is calculated as the number of years since its foundation year. The latter is obtained from Capital IQ.
<i>Country Level Variables (continuous variables are winsorized at the 5% level)</i>	
Log GDP per Capita	Logarithm of the Gross Domestic Product per capita in current USD.
Competition Law Index (CLI)	An index, which ranges from 0 to 1, that captures stringency of a country's competition law. We use the mean value over the period 1980 to 2005. (Bradford and Chilton (2018))
CLI - Abuse of Dominance Provisions	An index, which ranges from 0 to 1, that captures general prohibition of anticompetitive abuses of a dominant position. We use the mean value over the period 1980 to 2005. (Bradford and Chilton (2018))
CLI - Anticompetitive Agreement Provisions	An index, which ranges from 0 to 1, that captures limits to both horizontal and vertical agreements between companies. We use the mean value over the period 1980 to 2005. (Bradford and Chilton (2018))
CLI - Merger Control Provisions	An index, which ranges from 0 to 1, that captures merger control provisions of a country's competition law. We use the mean value over the period 1980 to 2005. (Bradford and Chilton (2018))
Log # Proc. to Start Business (Avg.)	Logarithm of the number of administrative procedures required by an entrepreneur to start and operate a business, which is estimated using the yearly average number of procedures for men and women and obtained from the World Bank's Doing Business database.
Log # Days. to Start Business (Avg.)	Logarithm of the number of the number of days that it takes to an entrepreneur to start and operate a business, which is estimated using the yearly average number of days for men and women and obtained from the World Bank's Doing Business database.
Employment Laws	An index, which ranges from 0 to 1, that captures labor protection laws. (Botero et al. (2004))
Collective Relations	An index, which ranges from 0 to 1, that captures labor union power and collective disputes. (Botero et al. (2004))
Social Security	An index, which ranges from 0 to 1, that captures social security benefits. (Botero et al. (2004))
Anti-Self-Dealing Index	An index, which ranges from 0 to 1, that captures the strength of minority shareholder protection against self-dealing by the controlling shareholder. (Djankov et al. (2008))
Ex Ante Private Self-Dealing	An index, which ranges from 0 to 1, that captures disclosures and the approval of the transaction by disinterested shareholders. (Djankov et al. (2008))
Ex Post Private Self-Dealing	An index, which ranges from 0 to 1, that captures the disclosure requirements after the transaction is approved and the ease of proving wrongdoing. (Djankov et al. (2008))
Creditor Rights	An index, which ranges from 0 to 4, that captures the strength of creditors' rights as specified in securities
Continued on next page	

Variables	Definitions
Political Instability	and corporate law legislation. We use the mean value over the period 1978 to 2003. (Djankov et al. (2007)) Indicator variable that equals 1 if a country belongs to the bottom quartile of the yearly distribution of the political stability index obtained from the Worldwide Governance Indicators, and 0 otherwise.
Poor Regulatory Quality	Indicator variable that equals 1 if a country belongs to the bottom quartile of the yearly distribution of the regulatory quality index obtained from the Worldwide Governance Indicators, and 0 otherwise.
Corruption	Indicator variable that equals 1 if a country belongs to the bottom quartile of the yearly distribution of the control of corruption index obtained from the Worldwide Governance Indicators, and 0 otherwise.
Mandatory ESG Disclosure (MESGD)	Indicator variable that equals 1 starting from the first year in which a country introduced mandatory ESG disclosure, and 0 otherwise. (Krueger et al. (2024))
MESGD - All at Once	Indicator variable that equals 1 starting from the first year in which a country with all-at-once implementation of ESG disclosure introduced mandatory ESG disclosure, and 0 otherwise. (Krueger et al. (2024))
MESGD - Gradual	Indicator variable that equals 1 starting from the first year in which a country with gradual implementation of ESG disclosure introduced mandatory disclosure on the last of the three E, S, and G topics, and 0 otherwise. (Krueger et al. (2024))
MESGD - Government	Indicator variable that equals 1 starting from the first year in which a government institution in a country introduced mandatory ESG disclosure, and 0 otherwise. (Krueger et al. (2024))
MESGD - Stock Exchange	Indicator variable that equals 1 starting from the first year in which a stock exchange in a country introduced mandatory ESG disclosure, and 0 otherwise. (Krueger et al. (2024))
MESGD - Full Compliance	Indicator variable that equals 1 starting from the first year in which a country introduced mandatory ESG disclosure if the disclosure is on a full-compliance basis, and 0 otherwise. (Krueger et al. (2024))
MESGD - Comply-or-Explain	Indicator variable that equals 1 starting from the first year in which a country introduced mandatory ESG disclosure if the disclosure is on a comply-or-explain basis, and 0 otherwise. (Krueger et al. (2024))

This table shows the definition of the variables included in our regression analysis.

Table A5. Regression Variables - Summary Statistics

Variables	Mean	SD	P10	P90	N
Equal-Weighted Average Kappa (UO)	0.0269	0.0547	0.0000	0.1066	1,528,422
Equal-Weighted Average Intra-Industry Kappa (CO)	0.0368	0.0736	0.0000	0.1526	1,498,049
Ownership Concentration (C5)	0.4691	0.2089	0.1880	0.7686	1,528,422
Foreign Inv. Holdings	0.0948	0.1572	0.0000	0.3381	1,528,422
Big Three Holdings	0.0119	0.0285	0.0000	0.0465	1,528,422
Govt. Inst. Holdings	0.0085	0.0236	0.0000	0.0202	1,528,422
Individual/Fam. Holdings	0.1802	0.2123	0.0000	0.5514	1,528,422
Log Market Capitalization	-2.2903	2.3299	-5.6087	0.9276	1,528,422
Log Age	3.3006	0.8490	2.0794	4.4998	1,528,422
Log GDP per Capita	9.9702	1.1930	7.6214	10.9268	1,528,422
Competition Law Index	0.6336	0.2589	0.2118	0.9832	1,469,512
CLI - Abuse of Dominance Provisions	0.5764	0.2438	0.1875	0.9375	1,469,512
CLI - Anticompetitive Agreement Provisions	0.5886	0.2822	0.2885	0.9269	1,469,512
CLI - Merger Control Provisions	0.5150	0.3291	0.0625	0.8750	1,469,512
Log # Proc. to Start Business (Avg.)	1.7298	0.5554	1.0986	2.3979	1,073,448
Log # Days to Start Business (Avg.)	2.2552	0.8291	0.9163	3.4452	1,073,448
Employment Laws	0.3376	0.1567	0.1639	0.5676	1,507,811
Collective Relations	0.3881	0.1478	0.1964	0.6280	1,507,811
Social Security	0.6469	0.1288	0.4003	0.7869	1,507,811
Anti-Self-Dealing Index	0.6336	0.1775	0.4200	0.9500	1,486,283
Ex Ante Private Self-Dealing	0.4896	0.3218	0.2200	1.0000	1,486,283
Ex Post Private Self-Dealing	0.7878	0.1784	0.5300	0.9800	1,486,283
Creditors Rights	2.2260	0.9231	1.0000	3.0000	1,528,422
Political Instability	0.2408				1,528,422
Poor Regulatory Quality	0.2519				1,528,422
Corruption	0.2182				1,528,422
Mandatory ESG Disclosure (MESGD)	0.3600				1,519,662
MESGD - All at Once	0.2456				1,519,662
MESGD - Gradual	0.1144				1,519,662
MESGD - Government	0.1284				1,519,662
MESGD - Stock Exchange	0.2316				1,519,662
MESGD - Full Compliance	0.2943				1,519,662
MESGD - Comply-or-Explain	0.0657				1,519,662

This table reports summary statistics for the variables included in our regression analysis. All continuous variables are winsorized at 5% level.