Common Ownership around the World*

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Abstract

We study common ownership in 49 countries from 2005 to 2019. Common ownership is pervasive and rising around the world. However, despite its widespread growth around the world common ownership considerably lower in the most important developed and emerging economies compared to the US. The rise of common ownership stems not only from increased institutional investment but also from its growing concentration, with the Big 3 (BlackRock, Vanguard, State Street) dominating in the United States and non-Big 3 institutional investors becoming increasingly important in other countries. Common ownership is highest and is growing most strongly among the largest firms, a trend that holds across all countries and regions. 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.

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1 Introduction

Over the last decade, common ownership—the practice whereby two or more firms are partially owned by the same investors—has drawn the attention of scholars (e.g., Elhauge (2016) and Posner (2021)) and antitrust authorities (e.g., Phillips (2018) and Vestager (2018)) due to its potential corrosive effects on product market competition (e.g., Azar et al. (2018) and He and Huang (2017)).[1] However, despite the burgeoning research on common ownership, much of the existing work is primarily focused on the United States and even in the US context little effort has been devoted to describing and understanding the drivers of the rise in 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 rising global phenomenon that started in the United States, but has increasingly spread around the world. However, the U.S. remains an outlier exhibiting the highest levels of common ownership by some distance. 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 3 institutional investors becoming increasingly important in other countries. Third, common ownership is highest and is growing most strongly among the largest firms in each country, a trend that holds across all countries and regions. Fourth, we investigate how universal and common ownership 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 begin our analysis by systematically documenting the global rise and prevalence of common ownership. While previous research has primarily focused on the United States, our analysis covers 61,649 unique firms from 49 countries (including 86% of the world's GDP) from 2005 to 2019 and reveals that universal and common ownership are global phenomena. They are rising

[1] During this period, the literature on common ownership has also grown into several directions yielding studies about its impact on advertising (Lu et al., 2021), asset prices (Anton and Polk, 2014), corporate governance (Antón et al., 2023b; Edmans et al., 2019; He et al., 2019; Kang et al., 2018), corporate social responsibility (Dai and Qiu, 2021), information disclosure (Park et al., 2019), innovation (Antón et al., 2025; López and Vives, 2019), 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 (Anton et al., 2022; Brooks et al., 2018; Antón et al., 2023a), and total welfare (Ederer and Pellegrino, 2021) among many others.

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

in nearly every major economy, driven by increasing institutional investment. However, the U.S. remains an outlier, exhibiting the highest levels of common ownership by some distance. Other countries with notably high levels include China, South Africa, and Ireland, while a second tier of economies—such as the United Kingdom, Finland, Sweden, and several Arab and European nations—also show significant but comparatively lower levels.

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. Large asset managers, particularly the Big Three, play a dominant role in the U.S. (and to a lesser extent in Ireland, Netherlands, and Switzerland), while government-linked ownership is the primary driver in China and South Africa. This highlights the heterogeneity in ownership structures across countries, with different institutional and government investors shaping corporate control in distinct ways.

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. This trend is particularly pronounced in developed capital markets such as the United States, the Euro Area, and Japan, where institutional investors hold larger stakes in high-market-cap firms. Over time, common ownership among large firms has increased significantly, particularly in the Euro Area post-2009 and in Japan after 2014, driven by institutional investment growth and central bank interventions. While the United States has experienced a more steady and long-term increase, other regions have seen more abrupt shifts due to regulatory changes or consolidation between asset managers.

We further examine how institutional, legal, and market characteristics shape common ownership across countries. Stronger antitrust enforcement correlates with lower common ownership, while more arduous market entry procedures are associated with higher common ownership, suggesting that regulatory barriers reinforce investor dominance. Similarly, rigid labor protections reduce 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, Section 3 contains descriptive results, Section 4 documents the relationship between common ownership and institutional, legal, and market characteristics, and Section 5 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 blockholders 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 Thomson Reuters Global Ownership database is that it displays a more accurate aggregation of ownership data compared to other sources such as Capital IQ Platform – in particular when capturing the ownership by individuals/families that are influential owners in non-US firms.[3] Having the right level of

[3]In the case of Christian Dior (France), Capital IQ reports an ownership of 87.95% by the Arnault Family, while

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 dataset spans from 2005Q1 to 2019Q4. The data provides detail on the shareholder identities, 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 ad 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

the Thomson Reuters Global Ownership database reports 97.50%. In the case of 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 Bayerische Motoren Werke (BMW) AG (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%. We looked into reports and news and found that the largest owners reported by the Thomson Reuters Global Ownership database for these cases and their ownership stakes are the correct ones.

[4]The 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]

quarter as 13F reports do. We exclude firm-quarter combinations where a single shareholder owns 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 take into consideration 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 2005Q1 to 2019Q4 - 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,

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

[7]To 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). We thank Allen et al. (2024) for sharing this list with us. 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.

Figure A1(A) shows that our sample includes an important number of firms: we start with 22,100 firms in 2005Q1, then 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 the 2005Q1-2019Q4 period. Finally, Figure A1(C) shows that the market capitalization of the firms included in our sample is sizable, around $USD 28.57 trillion in 2005Q1 and reaches $USD 71.38 trillion in 2019Q4.[8] This figure further shows that the market value of the holdings recorded in our data tracks very well the market capitalization of the sample firms. Table A1 shows some summary statistics for the ownership-related data. Most 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. For ease of exposition, we report only 20 of these cases. The examples in this table support the notion that only using data on 13f institutional investors when calculating common ownership may lead to poor estimates of it.

2.2 Measuring Universal and Common Ownership

While the existing literature proposes multiple measures of common ownership, not all of them are theoretically grounded. Therefore, we build on the work by Backus et al. (2021) and construct theoretically informed proxies for universal and common ownership as follows:

$$\kappa_{fg} = \frac{\sum\limits_{\forall s} \gamma_{fs}\beta_{gs}}{\sum\limits_{\forall s} \gamma_{fs}\beta_{fs}} \tag{1}$$

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} stands for the cash flow rights that shareholder s has in firm g.

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 a different version of the implied 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 cashflow rights ($\gamma_{fs} = \beta_{fs}^2$), which places more weight on the largest shareholders, we replace a shareholder's

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

control ownership (γ_{fs}) with their relative voting power index, which is measured using the normalized Banzhaf index (Banzhaf, 1965).[9] 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.[10] Importantly, this approach enables us to capture nuances of control and influence beyond the distinction between single- and multi-class share structures. 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. Our intra-industry common ownership measure considers only firm pairs within the same country and industry in a given quarter. Our inter-industry common ownership measure considers only firm pairs that share the same country but not the same industry in a given quarter.

3 Descriptive Results

3.1 Universal and Common Ownership at a Glance

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 inter- and intra-industry pairwise profit weights 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 ($\gamma = \textit{Banzhaf Index}$). Panel A of Figure 1 depicts the cross-country distribution of inter-industry common ownership or 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

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

[10] As a matter of computational tractability, we give a weight of zero to shareholders with ownership stakes lower than 0.5%.

a few 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 blue-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 is equal to 0.1540 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 is 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 these patterns. It reports average pairwise κ measures by country (where countries are grouped by geographical proximity) and splits them based on their ownership, size, and industry.

An important pattern that emerges from Table 1 is the role of firm size. 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 which emphasizes that universal ownership, though focused on larger companies that are part of top firm country indices, is substantially more pervasive than previously documented by contributions that exclusively focus on firms included in major indices.

We further explore the evolution of universal common ownership by country and firm size over time in Figures 4A, 4B, and 4C. First, as documented before at length in the common ownership literature, ownership concentration has risen substantially in the United States.Our analysis further shows that this is a global trend. In almost all major economies universal and common ownership has been on the rise, though the increase has generally been more muted than in the United States where average pairwise κ for all firms rose from around 0.07 in 2005 to over 0.3 by the end of 2019. Second, although the levels of universal ownership are very different across countries and geographical regions, the relationship between universal ownership and firm size is remarkably similar across the world. Universal ownership is larger everywhere for above median size firms (and even larger for top tercile firms) and this pattern also holds over time. 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.

In addition to firm size being a major driver of universal ownership, another much-discussed mechanism is the role of the Big 3 (BlackRock, Vanguard, State Street), the world's largest asset management companies. Table 1 decomposes the average pairwise κ by Big 3 and non-big 3 ownership. In the United States, the Big 3 are the primary contributors to high levels of universal ownership. The respective values for the average pairwise κ is 0.1319 for the Big 3 and only 0.0221 for all other owners. This much-discussed pattern for the United States (need references here) is, however, an exception in the global context. The only other countries where the contribution of the Big 3 to universal ownership is substantial are Ireland (0.0838 and 0.0222), Switzerland (0.0216 and 0.0196), the United Kingdom (0.0122 and 0.0287), and Mexico (0.0192 and 0.0275). In all other countries, the role of the Big 3 is relatively negligible and universal ownership is the result of other large owners holding stakes in several companies.

In addition to universal ownership, Table 1 also reports common ownership both within and across industries. 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). Intra- and inter-industry common ownership (as measured by average pairwise κ within the same industry and across different industries) 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 8A, 8B, and 8C 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 9A, and 9B. 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. Throughout the industry and firm distribution, common ownership has been on the rise for the last two decades. This persistence of common ownership by industries also holds for other economies where the level of common ownership increased less steadily.

3.2 Firm Size

Universal and common ownership increase with firm size, as shown in Table 1. Above-median and top-tercile firms have values of κ that are on average three times larger than all firms in most countries of our sample. The gap in κ between top tercile and all firms is even larger in Australia, Japan, Germany, and France and continues to increase over the sample period.

Figures 5A, 5B, and 5C 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 if not all public firms, but mostly rising in all other countries where universal ownership is a particular feature in 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.

As we have documented, the increase in universal ownership is not uniform across countries and across time. 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). However, it is more recent and sometimes more sudden in other countries. For instance, the increase in universal ownership is substantially muted from 2004 to 2009 in the Euro Area, until it received a kickstart in late 2009 with the merger of BlackRock and BGI and, since then, consistently continued thereafter as shown in Figure 4A and Figure 5A. In a similar vein, 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 4B.

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 entirely absent, even for

the largest firms. However, compared to the European economies experiencing large increases in universal ownership such as Germany and France reaching 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 is around 0.3.

3.3 Ownership Structure

3.3.1 The Role of the Big 3 and Institutional Investors

While the secular trend of the increase in institutional investors in the US has been well documented, it is less known how it has behaved across the globe. Table 3 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. This snapshot reveals significant heterogeneity in ownership structure across countries, shaped by factors such as market size, regulatory environment, historical corporate governance norms, and the presence of major global asset managers.

A striking observation from Table 3 is the dominant role played by the Big Three asset managers—BlackRock, Vanguard, and State Street—in certain economies, particularly in the United States and Ireland and to a lesser extent in the Netherlands, Switzerland, and the United Kingdom. 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. Figure 2A shows the fraction of firms in each country whose largest shareholder is either an individual or family, a Big 3 institutional investor, a non-Big 3 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 3 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 3 institutional investors as the largest owners declined from 65% of public companies in 2005 to only 30% in 2019 with a particular 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 3 it is apparent that the prominence of the Big 3 is slightly lower but still substantial in Ireland, where they represent 24% of total ownership.[11] Beyond the U.S. and Ireland, the footprint of the Big 3 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 3 do not dominate ownership structures in most countries. Instead, non-Big 3 institutional investors emerge as the largest shareholders in the majority of economies. Figures 2B, and 2C further illustrate this pattern. Although the share of the Big 3 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 3 investor as the largest owner approach 10%. Overall, the shares shown in Figures 2B and 2C are very stable compared to those of the US, perhaps the only significant change being in Japan where the rise of various non-Big 3 institutional investors crowded out individuals and families as the largest owners over time.

Table 3 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—whether domestic or foreign—is comparatively weaker, and other forms of ownership take precedence.

3.3.2 The Persistence of Family and Individual Ownership

Another key theme of Table 3 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. This is particularly true in countries with concentrated ownership structures, such as Italy, Spain, and

[11] Ireland has a relatively small number of publicly listed firms, which amplifies the influence of the Big 3 relative to other markets.

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.[12]

3.3.3 Geographic Patterns

Table 3 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

[12] A question that emerges from Table 3 is whether Norway's sovereign wealth fund should be classified under the category of non-Big 3 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.

the city's dual status as a global financial center and a gateway to mainland China.

Table 3 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 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 3 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 2 and 3 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 3 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 3 play a critical role in some markets, they are far from being the universal 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.

3.3.4 Largest Owners by Country

Table 5 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 cap. The Big Three hold small stakes 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% of US companies.

In the Euro Area, ownership is more fragmented compared to the U.S., with a mix of local institutional investors and international asset managers. While BlackRock and Vanguard maintain a presence, particularly in Germany and the Netherlands, they are not as dominant as in the U.S. 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 heavily influenced by domestic institutional investors, reflecting historical governance structures and regulatory preferences for local financial control.

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 hold a sizable presence, particularly for mid-sized stakes.

In continental Europe, the pattern shifts further toward local institutional investors. While the Big Three are still present—particularly BlackRock and Vanguard in Germany, the Netherlands, and to a lesser extent in France—they are frequently complemented or even overshadowed by domestic financial institutions. In Germany, major institutional investors include Norges Bank, DWS, and Amundi, while in France, key players include Norges Bank, Amundi, and MFS. This suggests that while global asset managers hold diversified stakes across markets, local institutions often play a primary role in controlling major national firms.

In Japan, the structure is even more distinct, with the Big Three having a relatively minor footprint. Instead, the largest asset managers are Nomura, Nikko, and Daiwa, which dominate domestic institutional holdings. This reflects the historically strong presence of domestic financial institutions and pension funds in Japanese equity markets.

Government ownership plays a particularly significant role in China, India, South Africa, and Italy, though the scale of this involvement varies. China stands out, with 2,598 firms under

government-linked ownership, contrasting sharply with Italy, where only 15 firms are in government portfolios. The South African Public Investment Corporation (PIC), a state-owned entity, is also a dominant investor, raising questions about its role in pension fund management and its impact on corporate governance.

The findings suggest that sovereign wealth funds and government-linked investors play different roles depending on the country. In China, government ownership is widespread and deeply integrated into corporate structures, whereas in Norway, Norges Bank manages sovereign wealth investments with a more diversified and less controlling approach. This variation underscores the complex interaction between state involvement and market-driven ownership across different economies.

3.4 Specific Regional Developments

3.4.1 The Global Footprint of Chinese Investments

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.[13] 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

[13]For 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.

3.4.2 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 being 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 Big 3 Japanese institutional investors 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 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 5 further supports the notion that the stock ownership by these four institutional investors might explain the rise of common ownership in Japan.

4 Empirical Analysis

Having documented the cross-sectional and time series variation of common ownership around the world, we now turn to analyzing how common ownership is related to institutional, legal, and market characteristics. 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:

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

$\bar{\kappa}_{f,c,t}^{Banzhaf}$ 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),[14] industry fixed effects - which are 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.

[14]Regions 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).

4.1 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.[15] 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

[15] Anticompetitive 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.

4.2 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 effects, 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 or 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.

4.3 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).

5 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.

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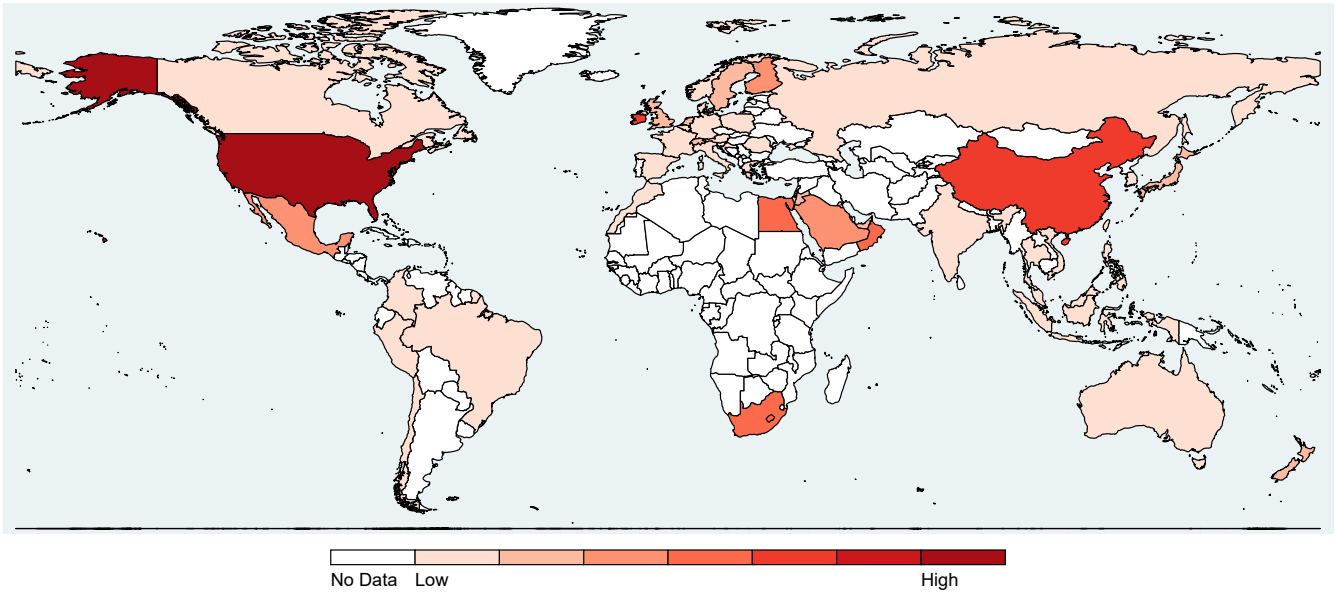
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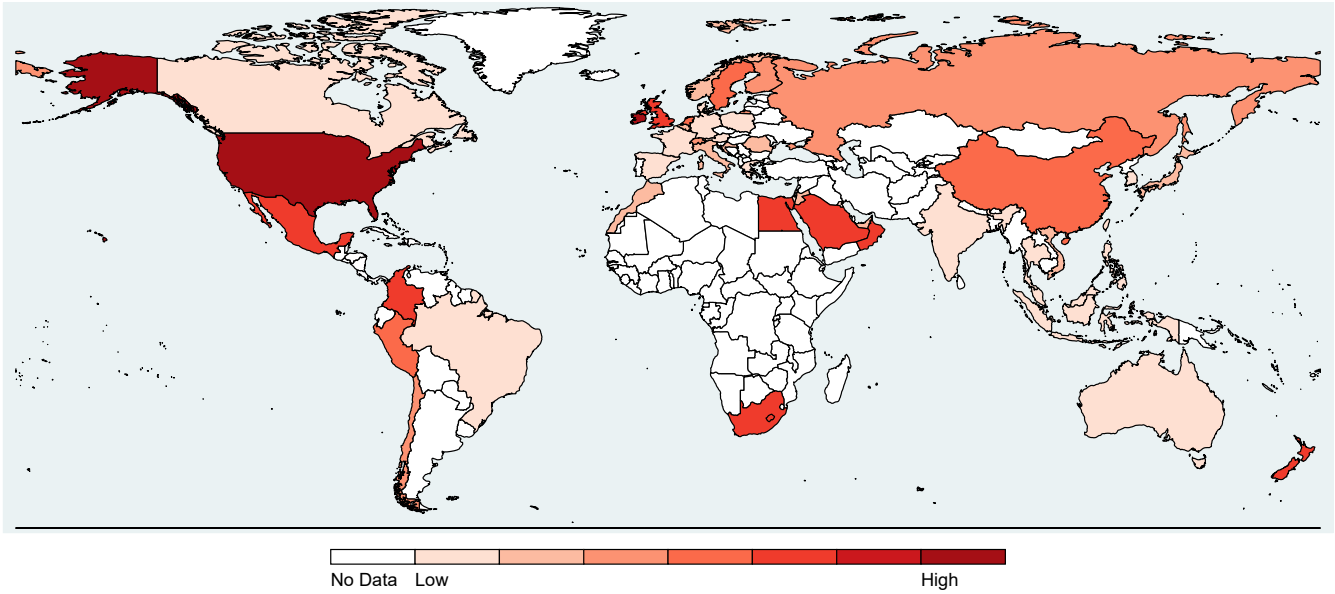
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A Figures and Tables

This section includes 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.

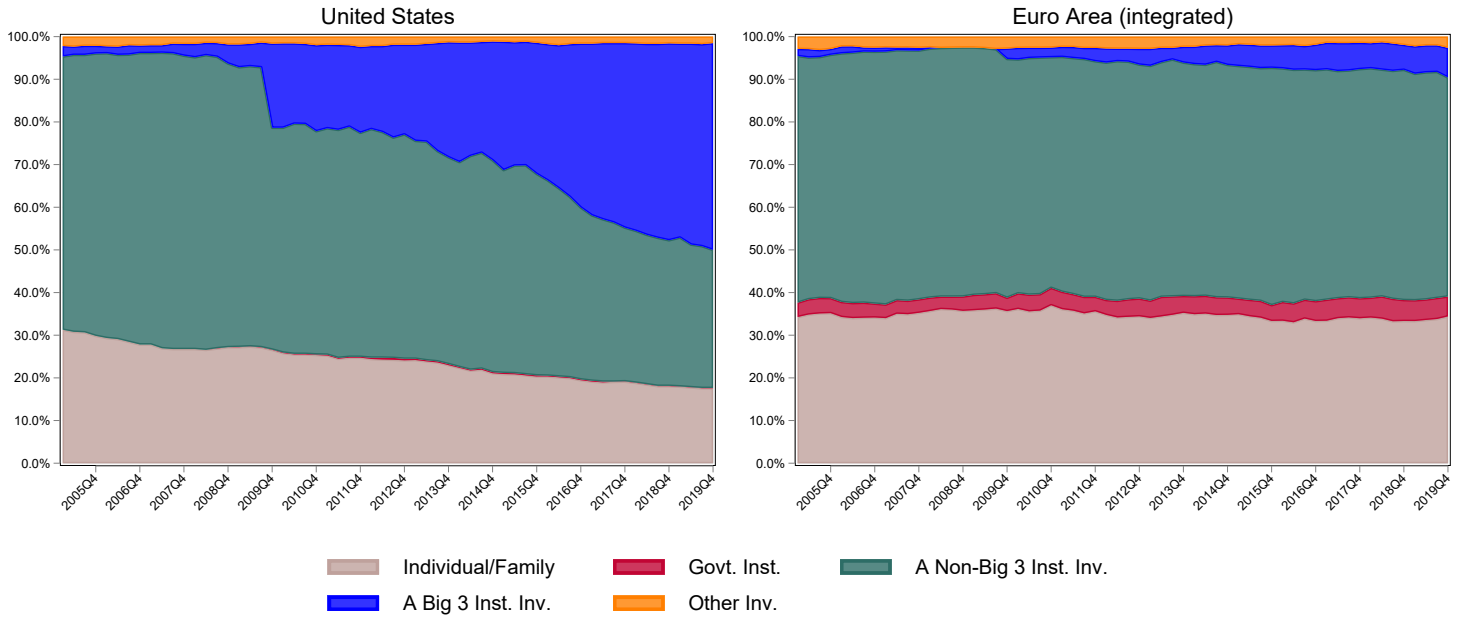


Figure 2A. Who are the Largest Owners? This figure presents the fraction of firms in each country whose largest shareholder falls into one of the following categories: an individual or family, a Big 3 institutional investor (BlackRock, Vanguard, or State Street), a non-Big 3 institutional investor, a 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).

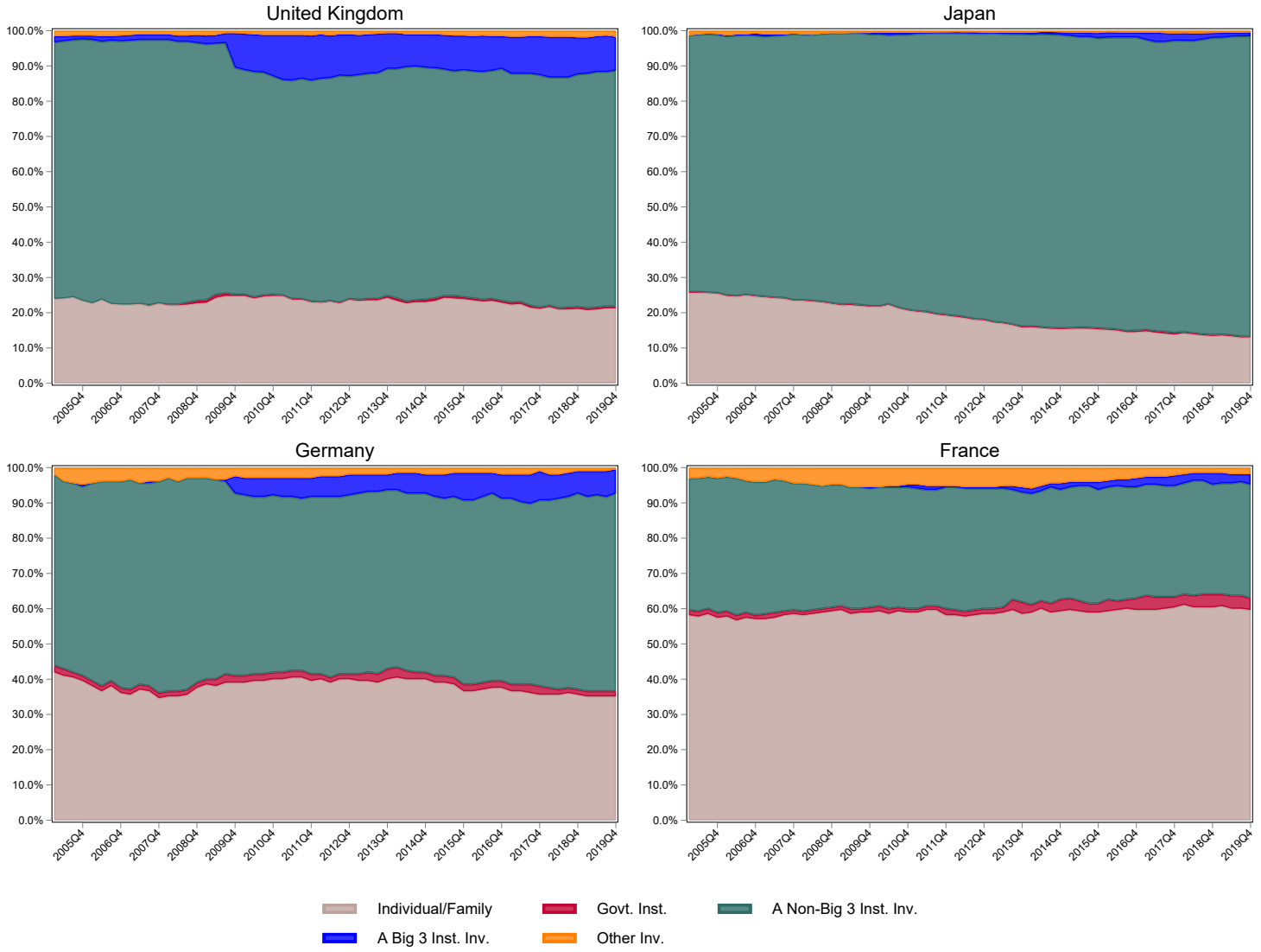


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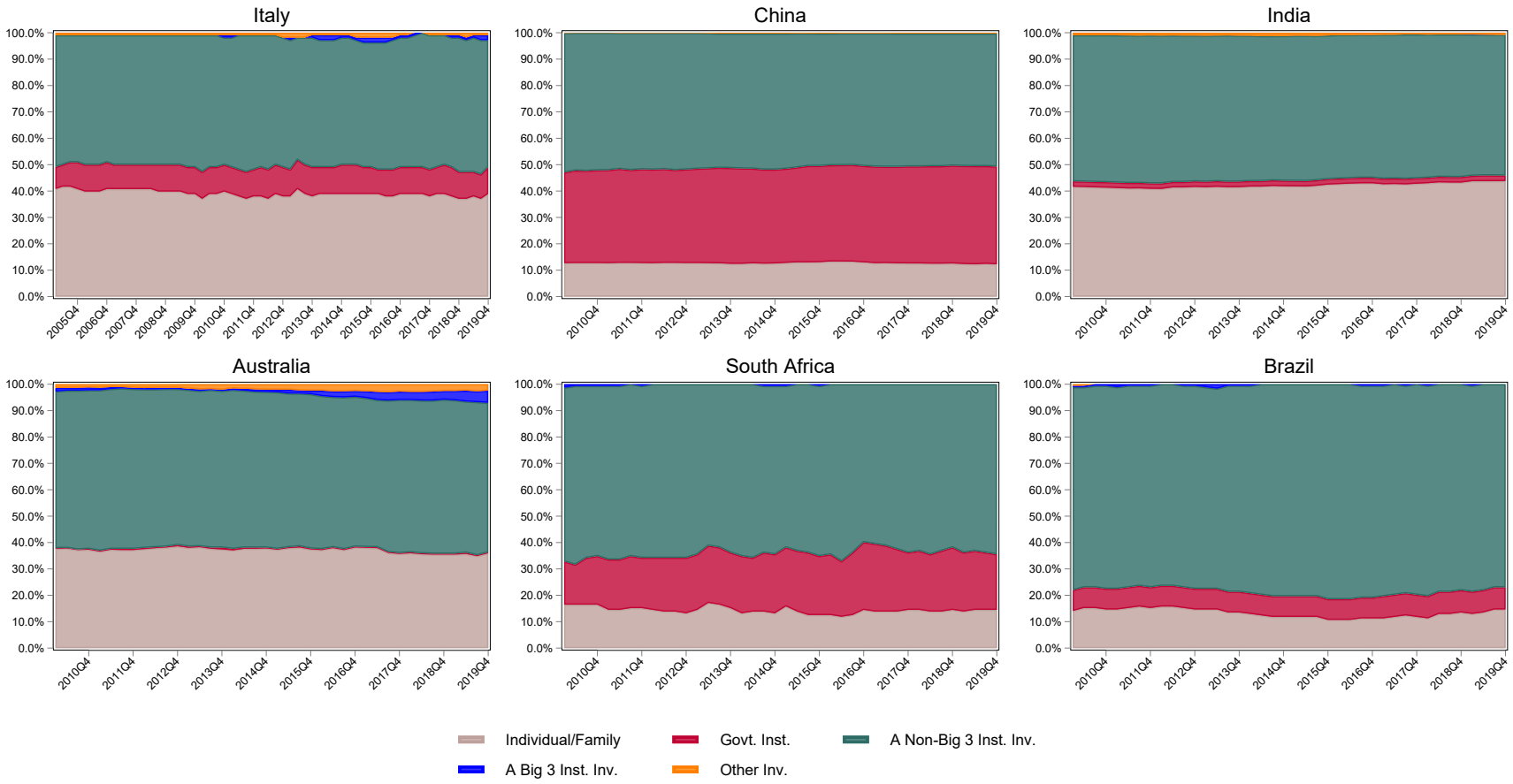


Figure 2C. Who are the Largest Owners? This figure presents the fraction of firms in each country whose largest shareholder falls into one of the following categories: an individual or family, a Big 3 institutional investor (BlackRock, Vanguard, or State Street), a non-Big 3 institutional investor, a 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).

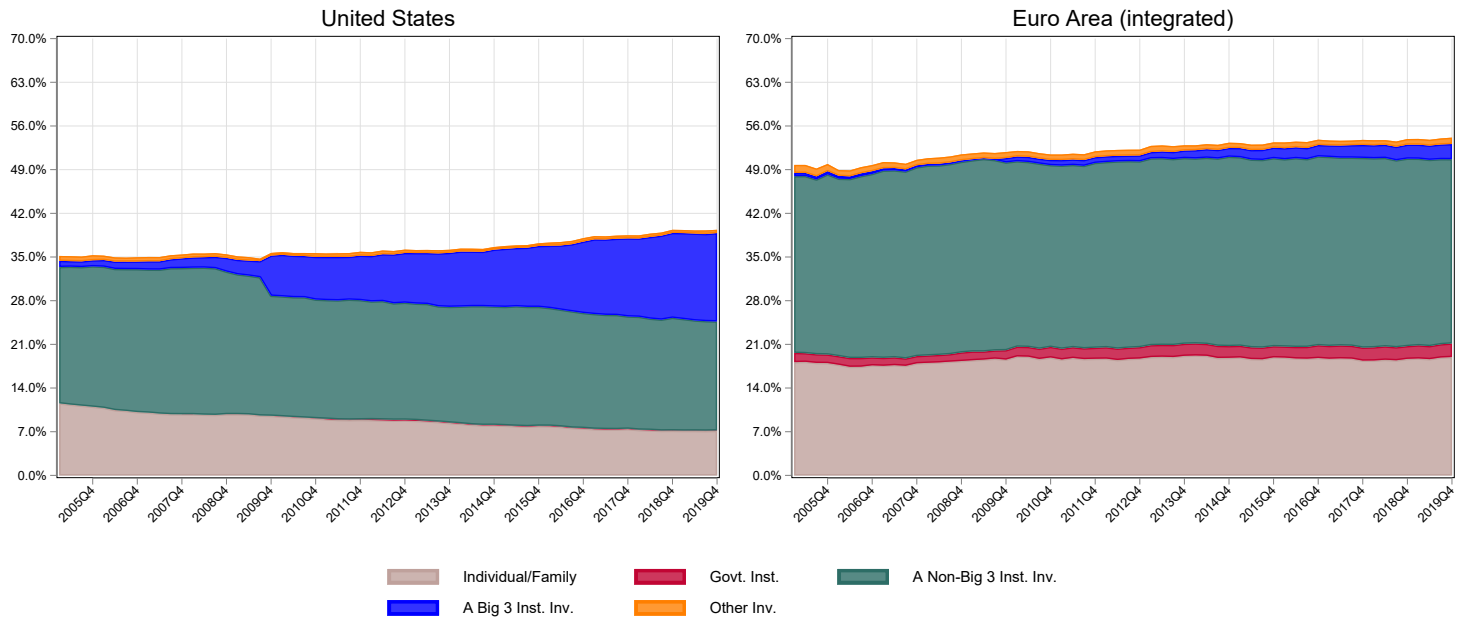


Figure 3A. Top 5 Investors' Mean Ownership Decomposition. This figure presents the mean ownership by the top five largest shareholders of each firm in each country sample. It also shows its decomposition into the following shareholder categories: individual or family, a Big 3 institutional investor (BlackRock, Vanguard, or State Street), a non-Big 3 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).

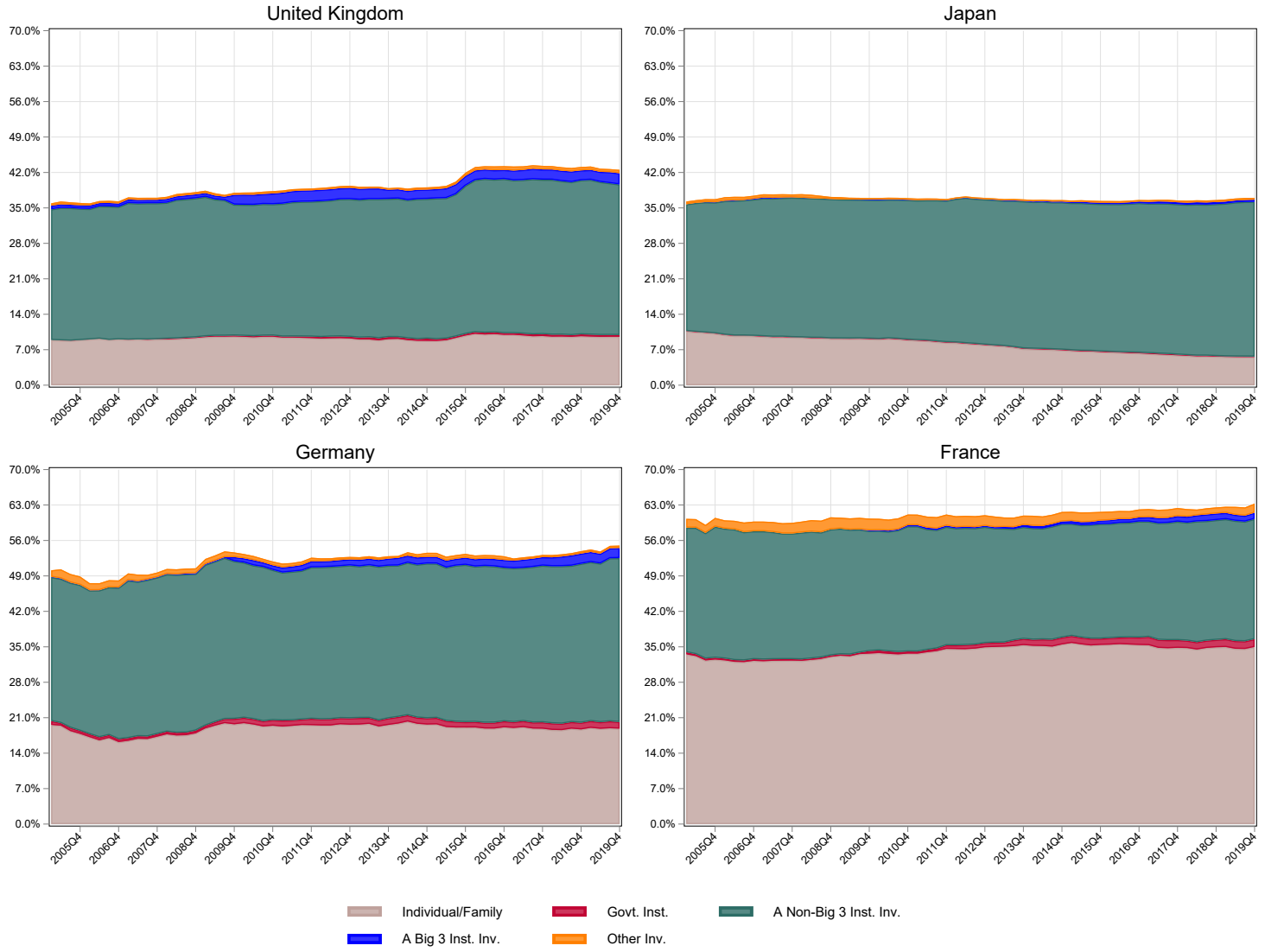


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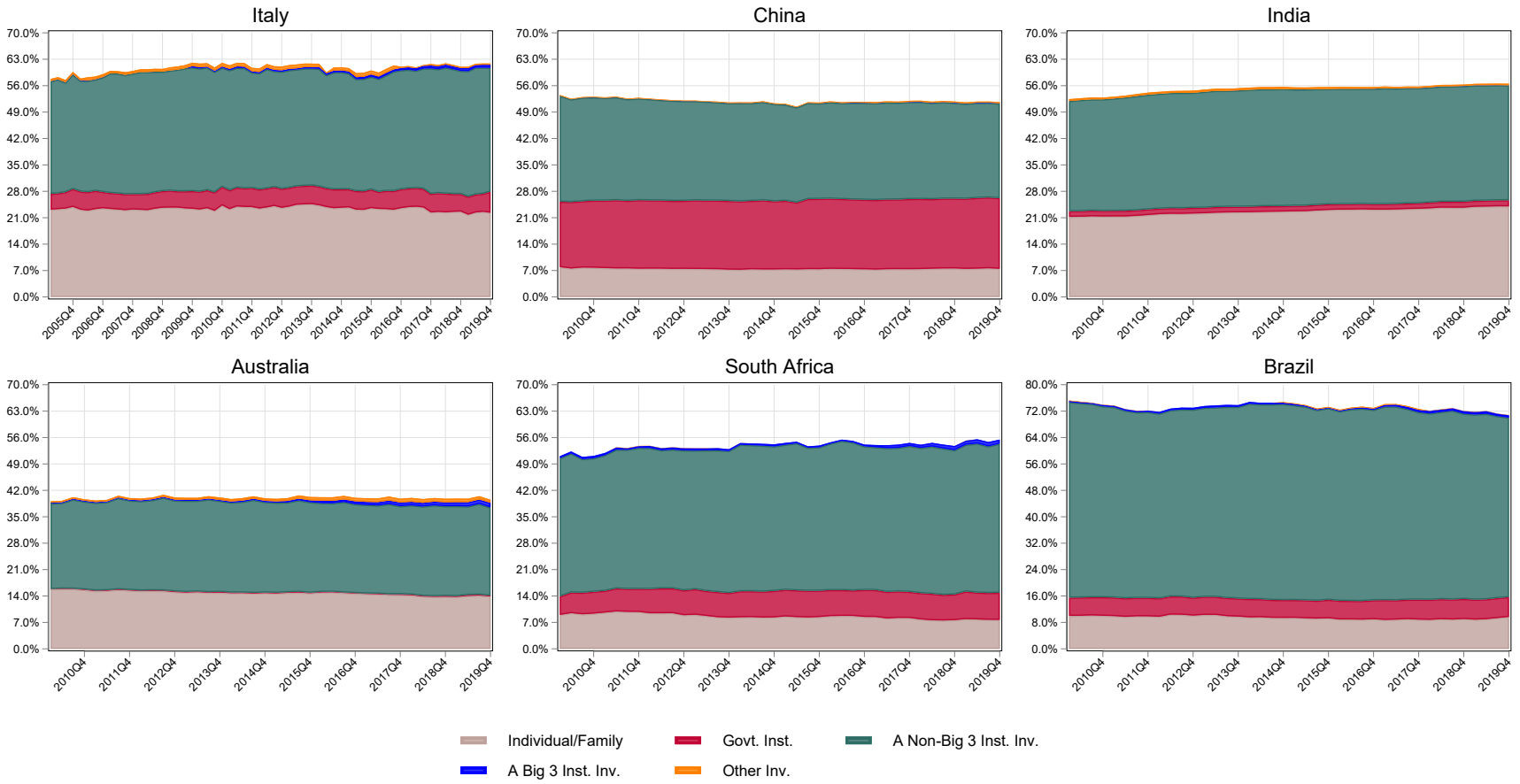


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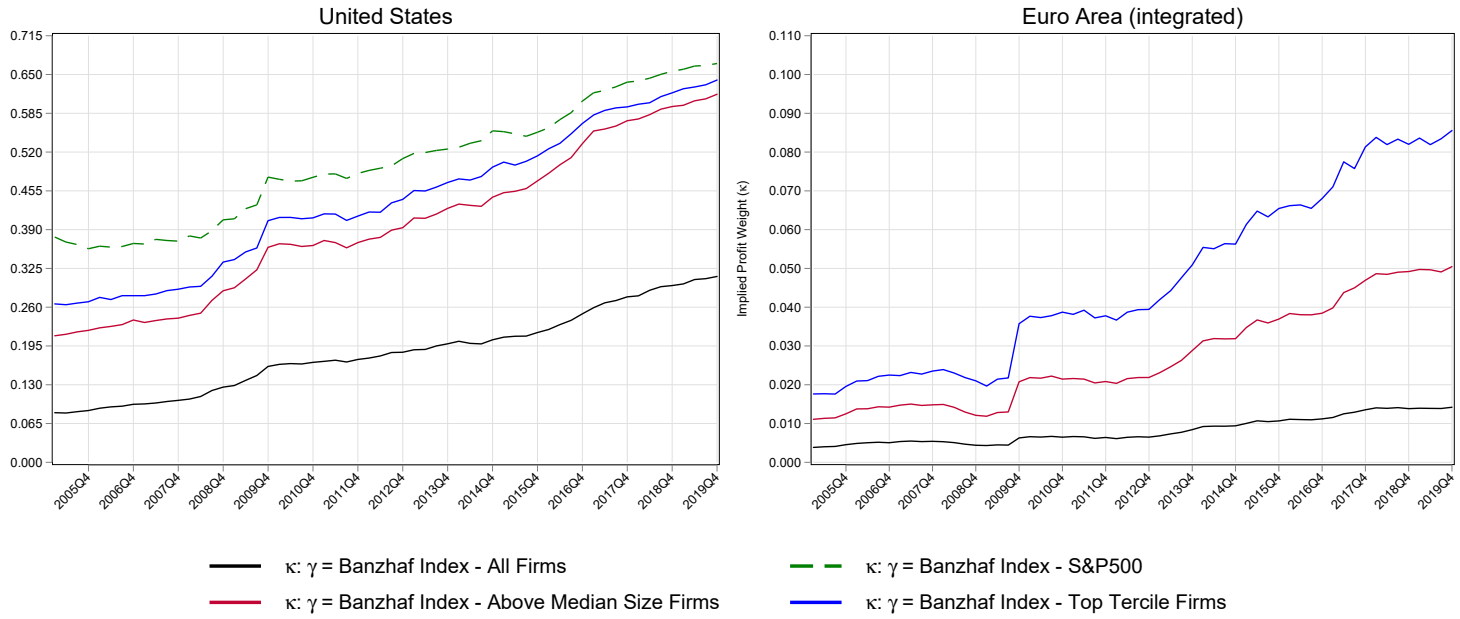


Figure 4A. Universal Ownership Trends. For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)). To track changes in ownership over time, we use a balanced panel of firms for the United 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.

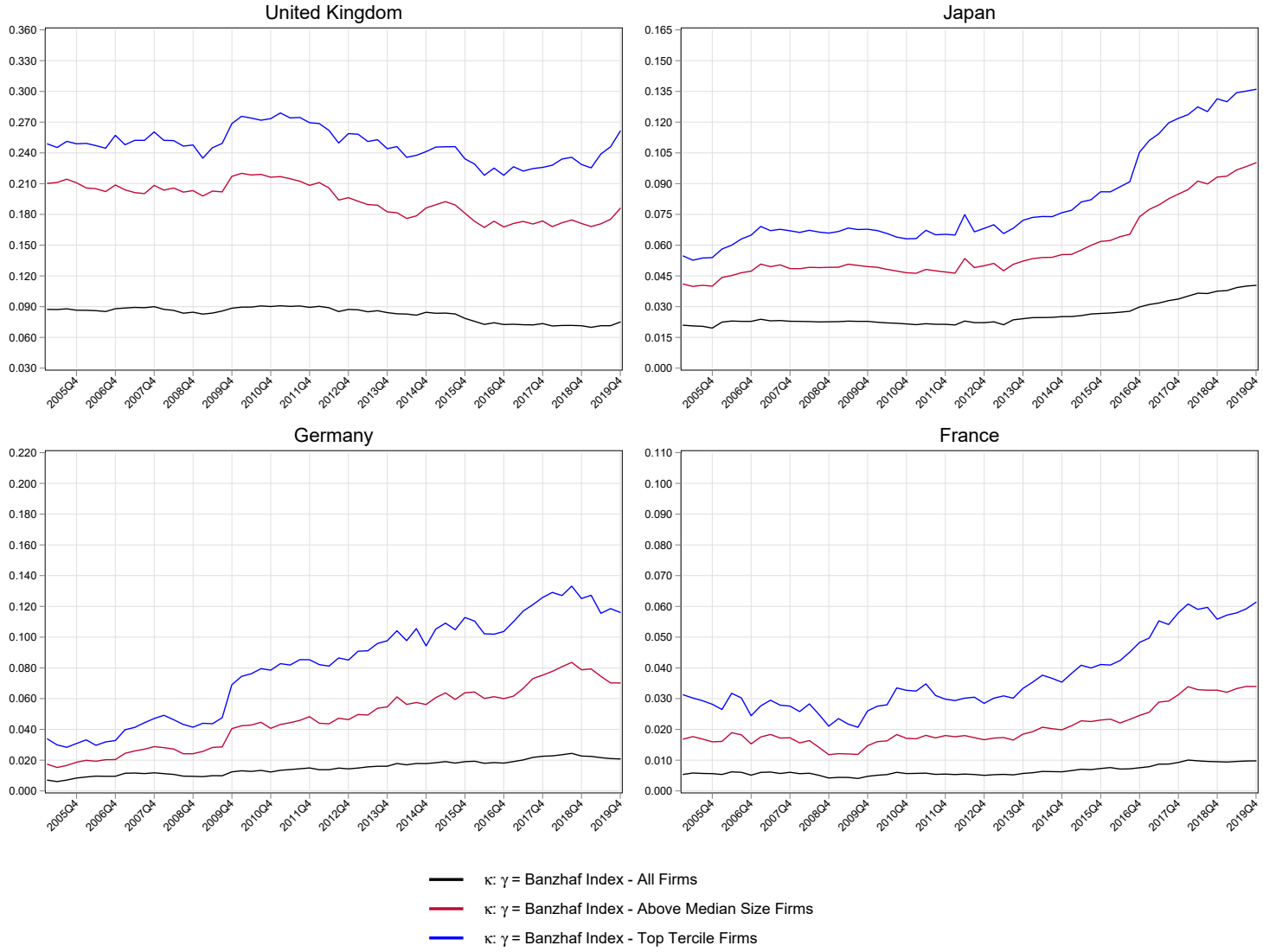


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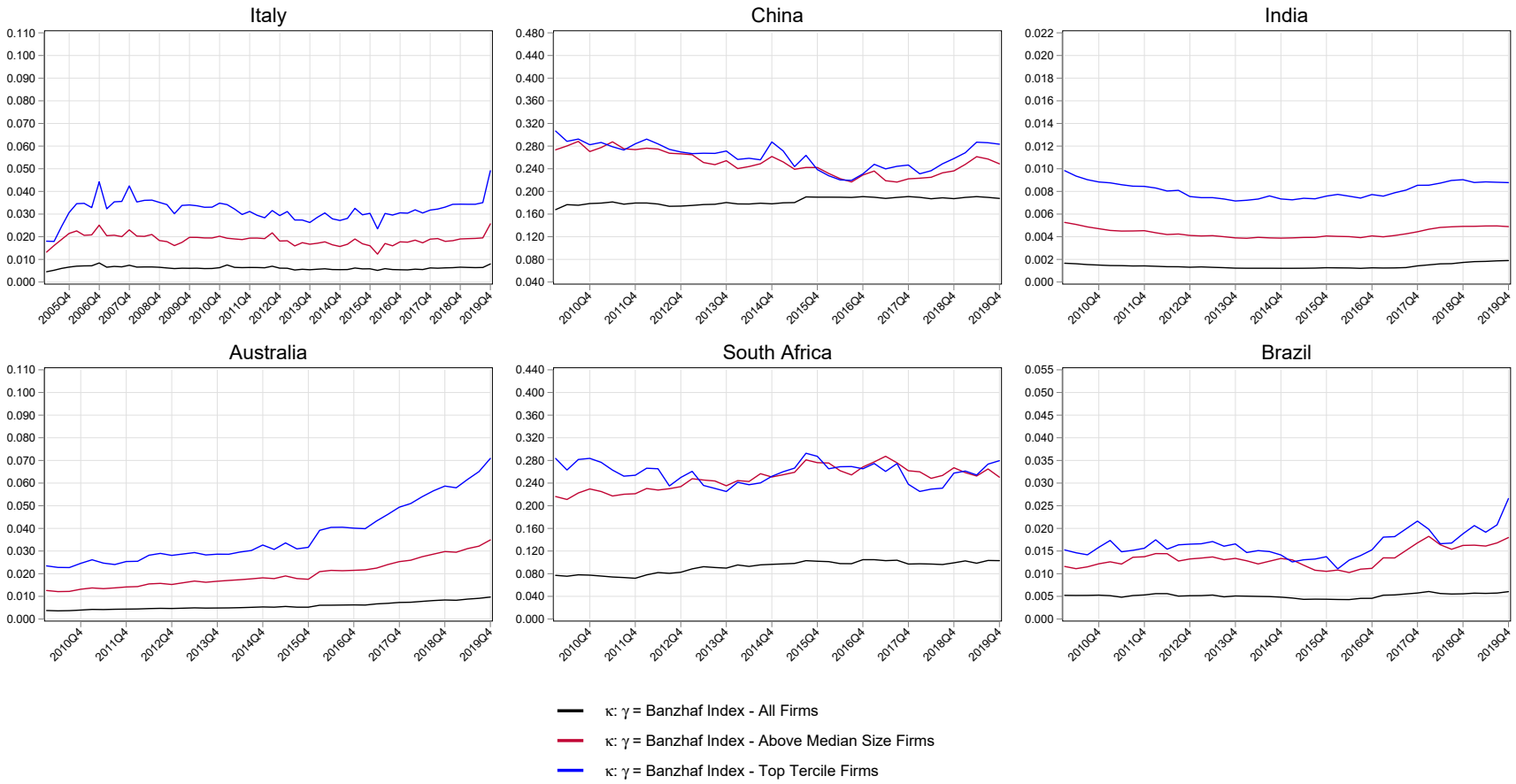


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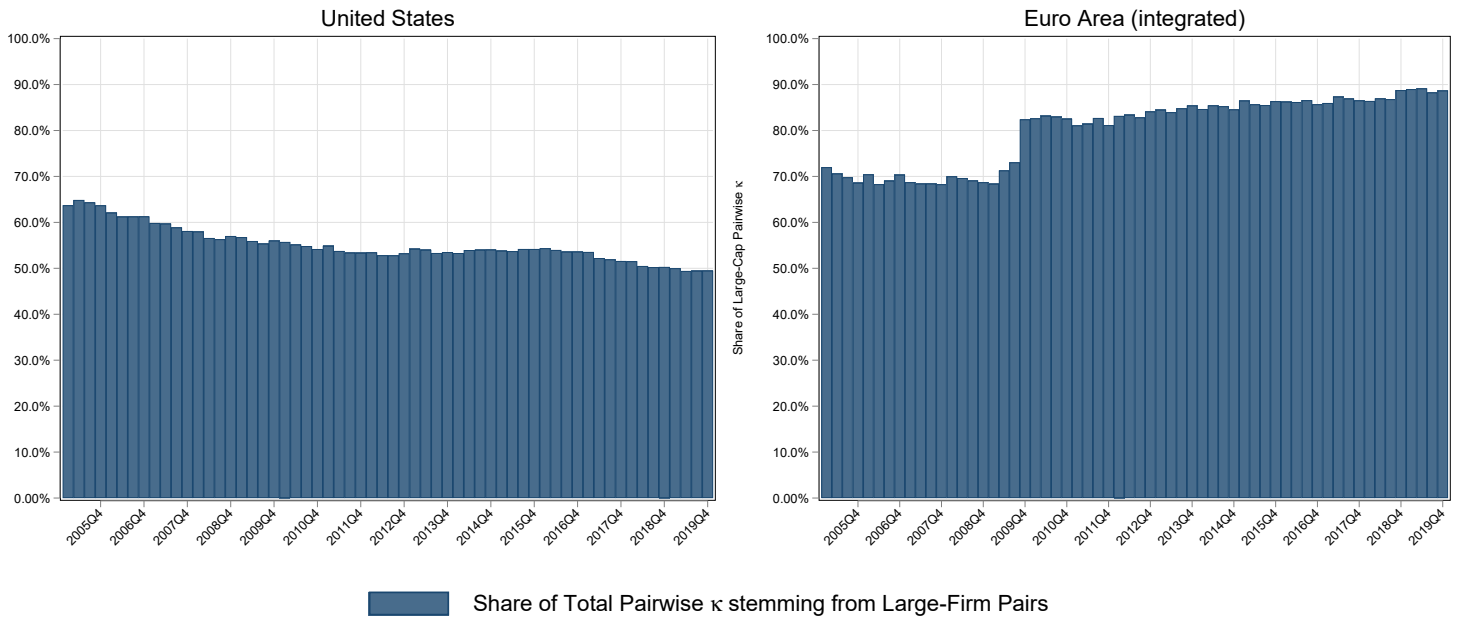


Figure 5A. Share of Total Pairwise $\kappa_{Banzhaf}$ stemming from Large-Firm Pairs. For each country-quarter combination, we calculate the sum of pairwise $\kappa_{Banzhaf}$ conditional on firm pairs where both firms are large and then divide it by the sum of pairwise $\kappa_{Banzhaf}$ using all firms 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.

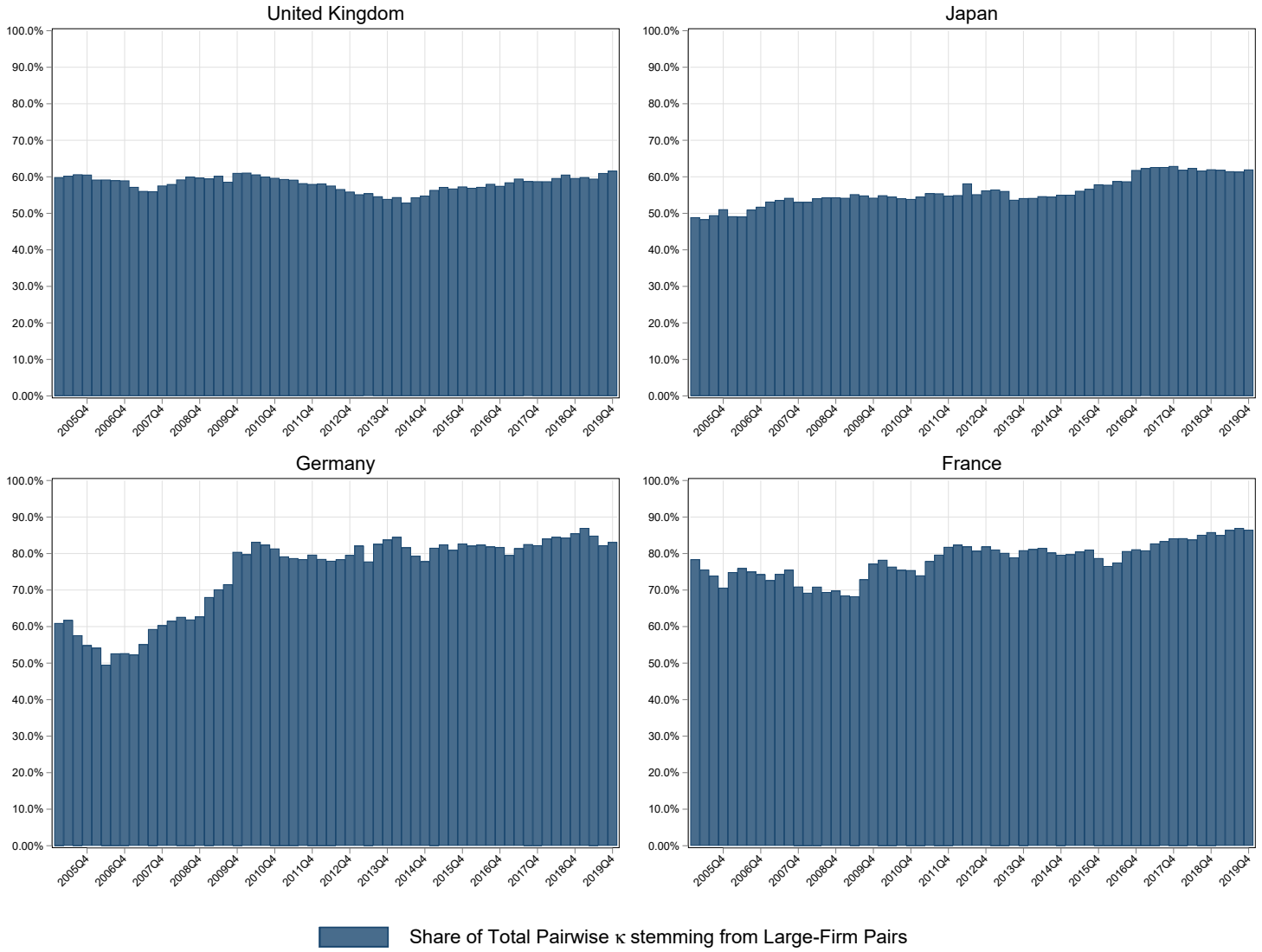


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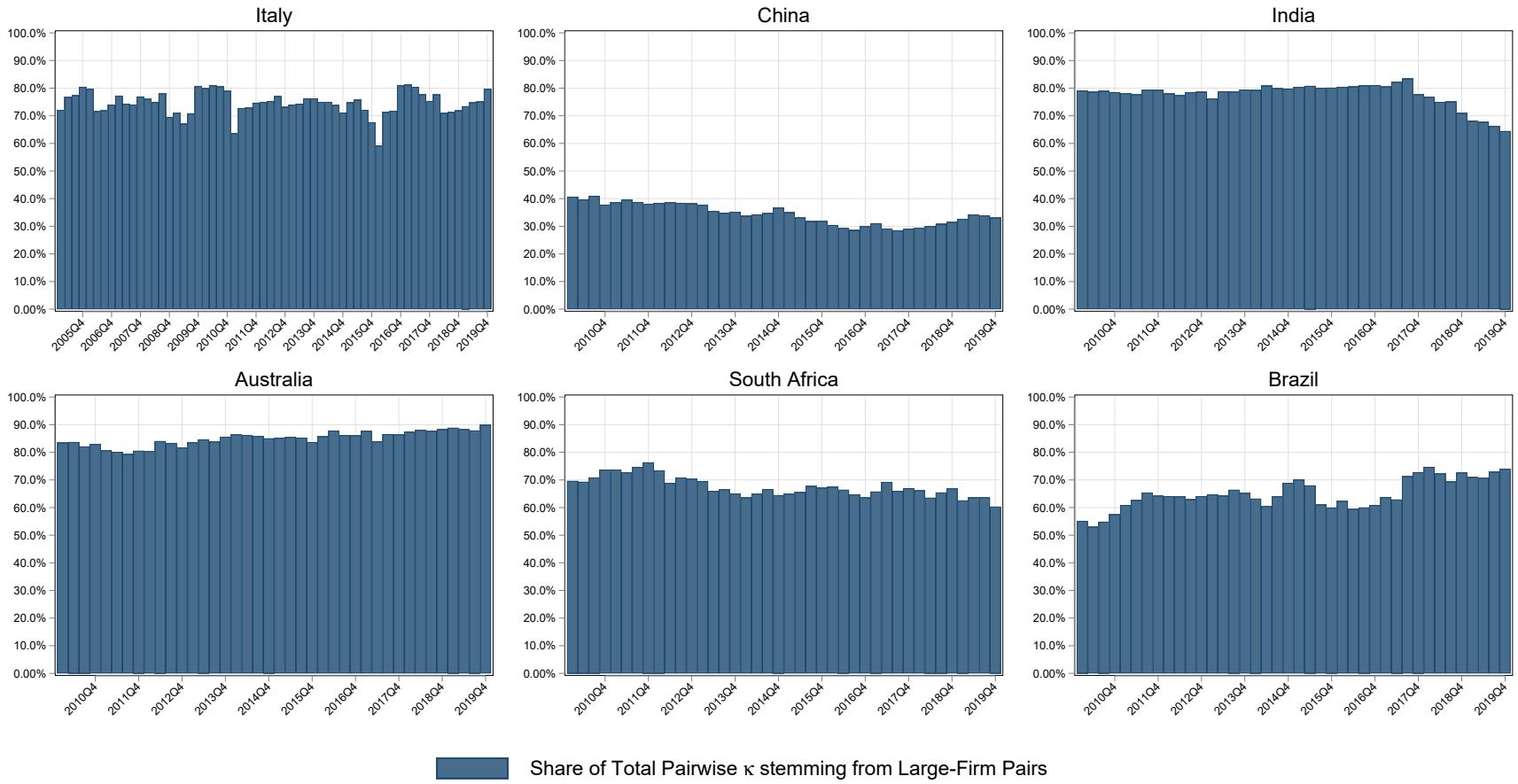


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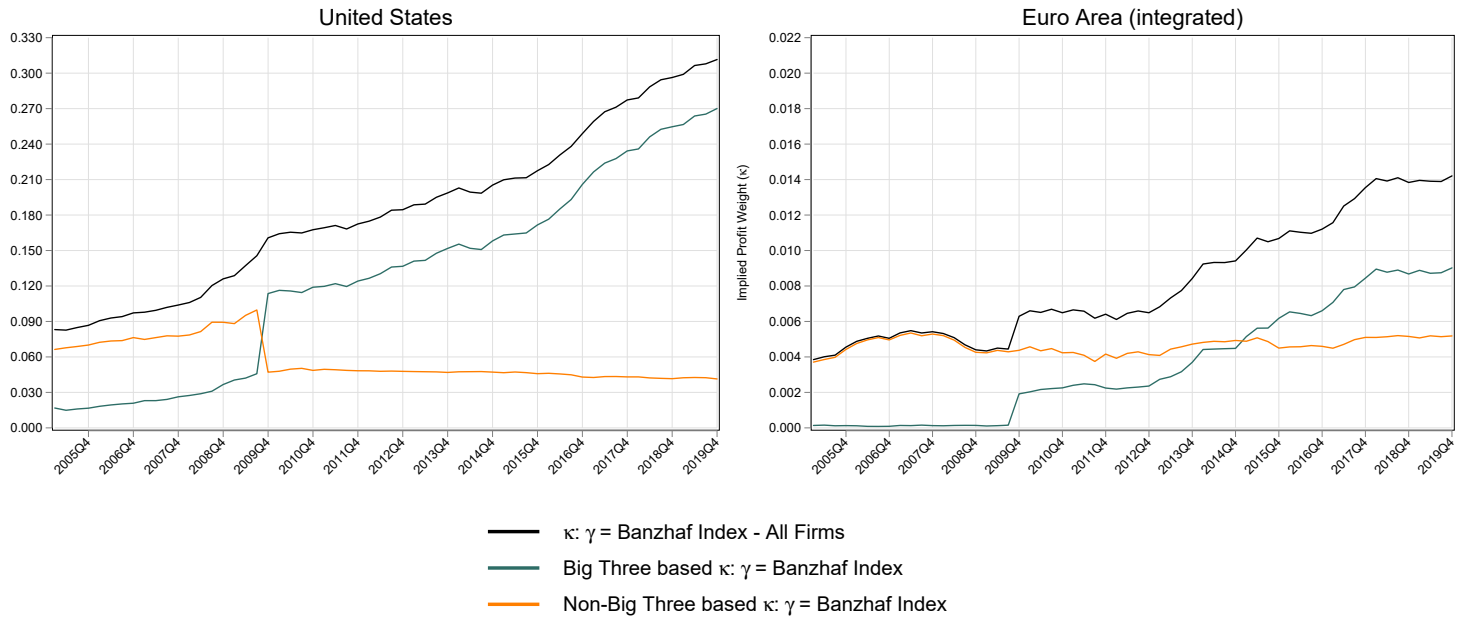


Figure 6A. Big Three Contribution to Universal Ownership (All Firms). For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)) and a breakdown of it into two terms, one driven by the Big 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.



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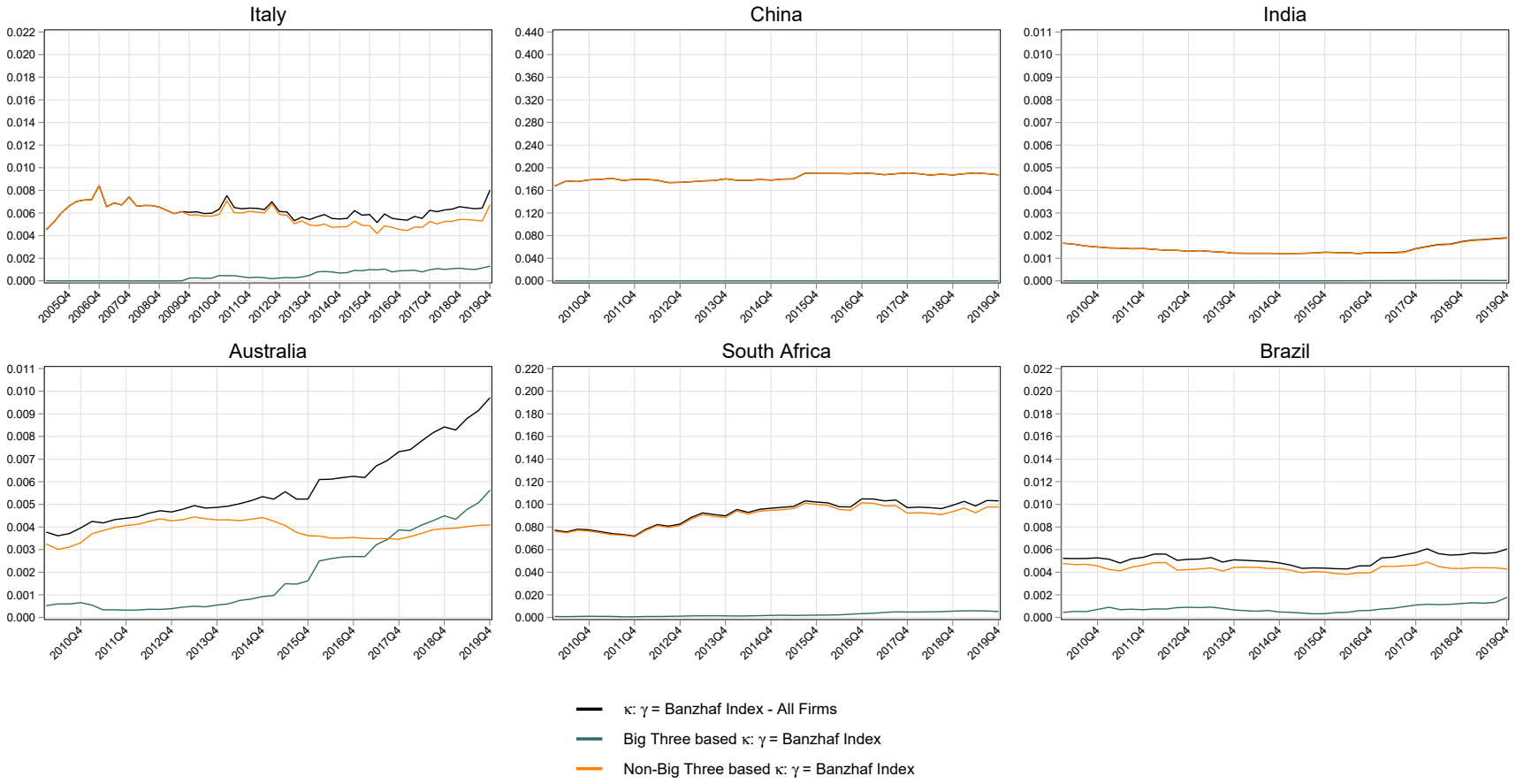


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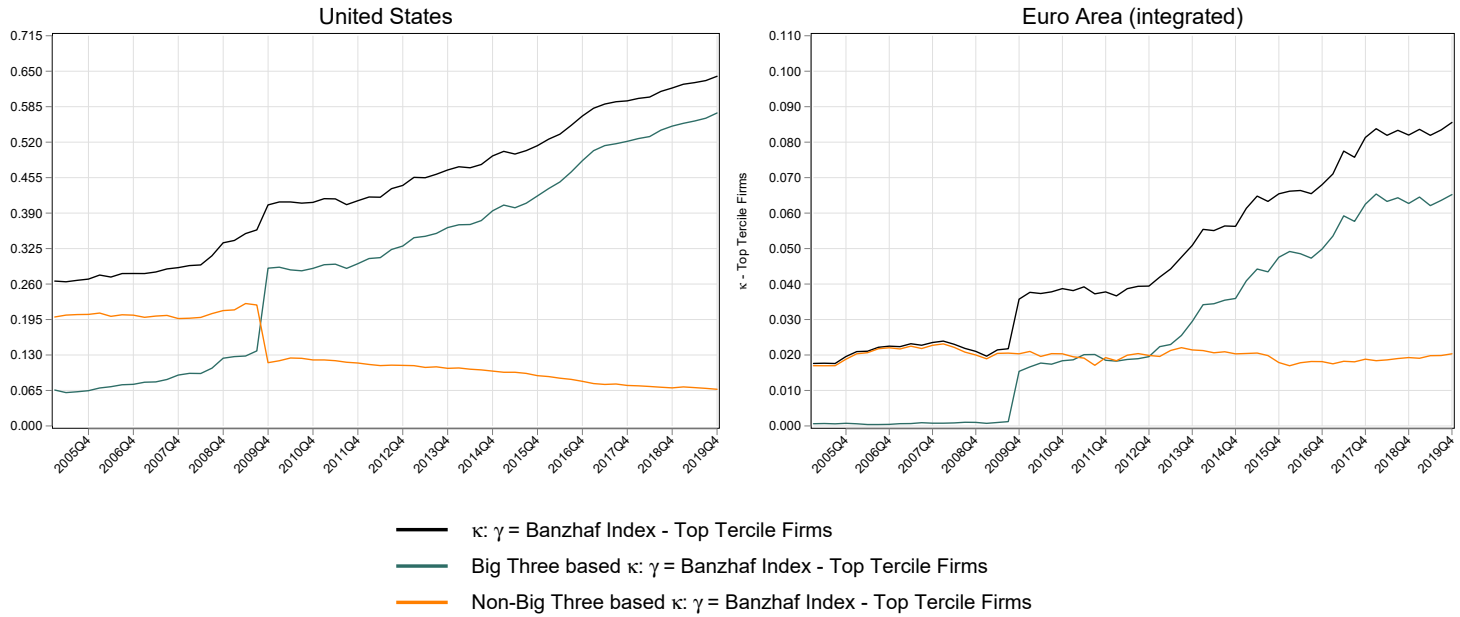


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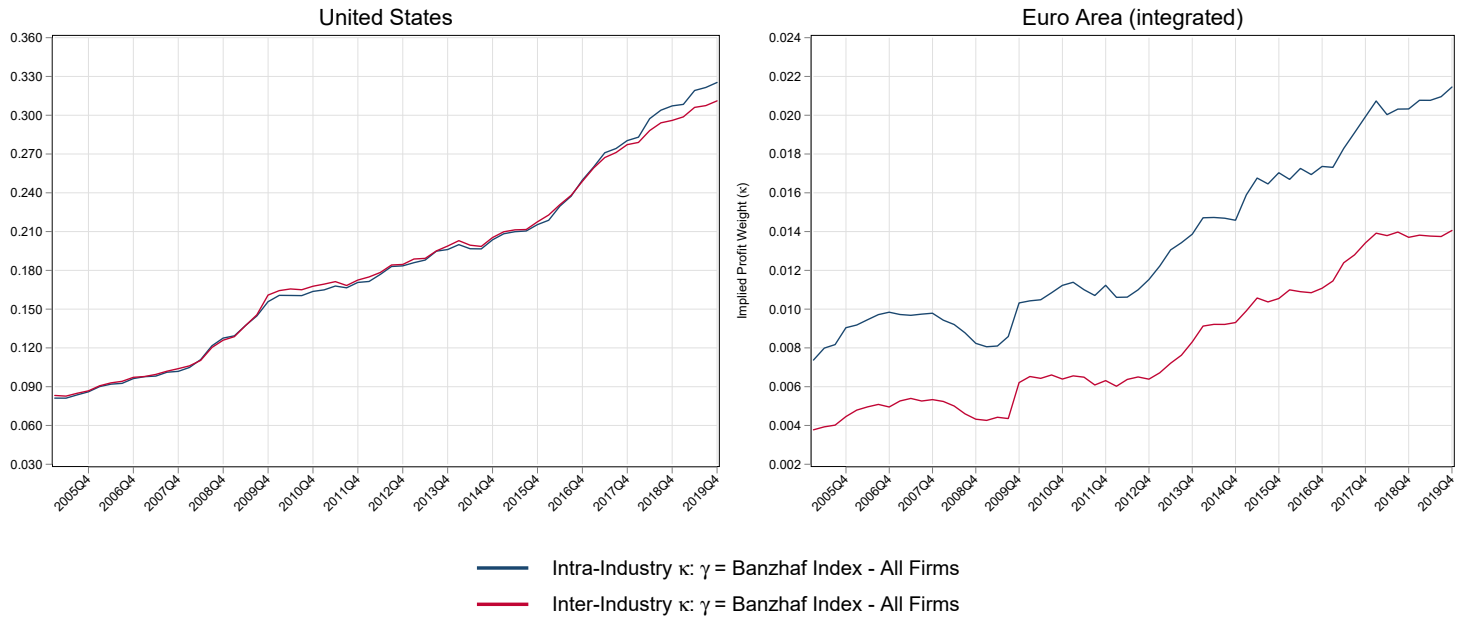


Figure 8A. Intra- vs Inter-Industry Common Ownership. For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)), conditional on whether a pair of firms share the same industry or not. We 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 $\kappa_{Banzhaf}$.

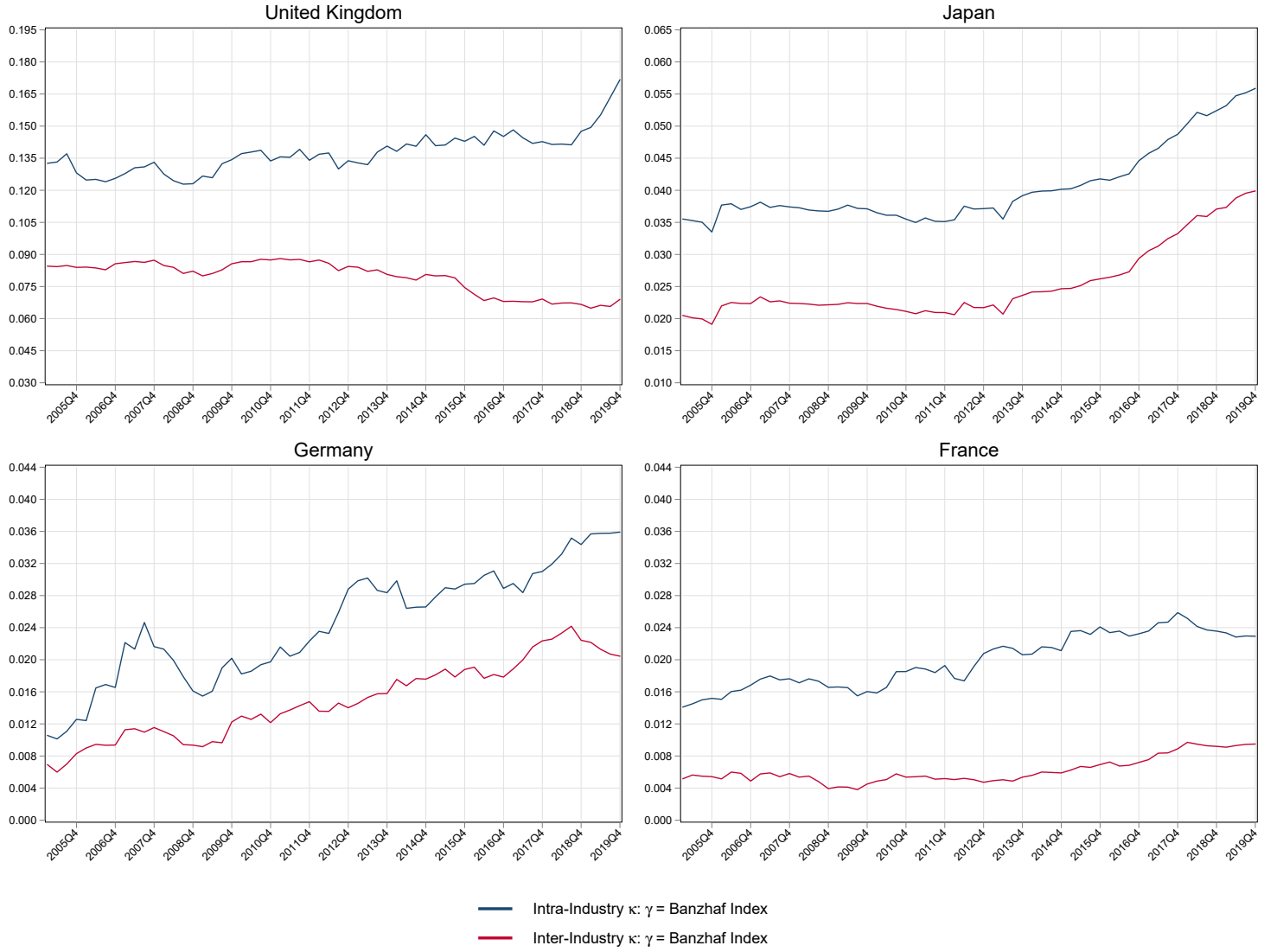


Figure 8B. Intra- vs Inter-Industry Common Ownership. For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)), conditional on whether a pair of firms share the same industry or not. We 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 $\kappa_{Banzhaf}$.

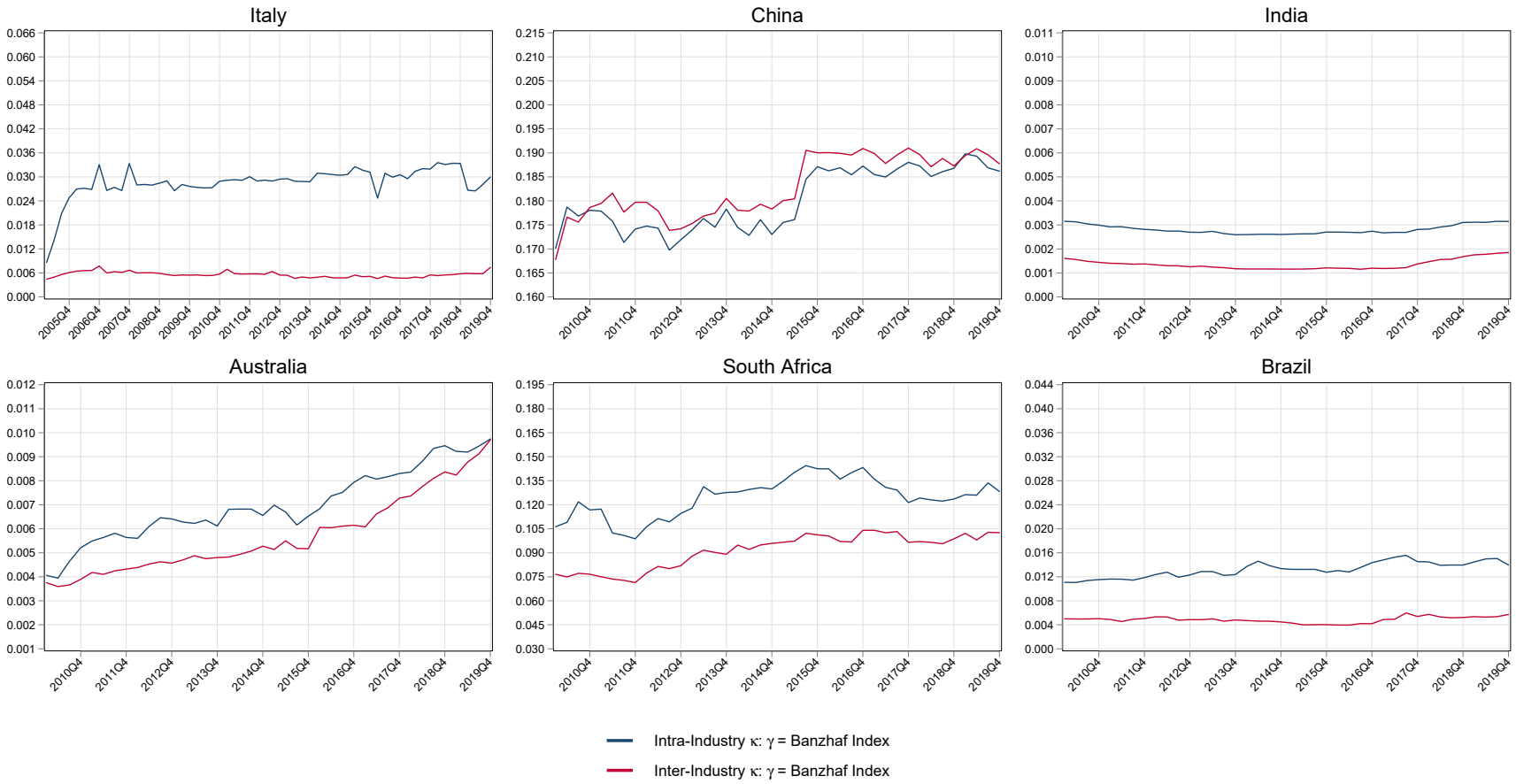


Figure 8C. Intra- vs Inter-Industry Common Ownership. For each country-quarter combination, we calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)), conditional on whether a pair of firms share the same industry or not. We 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 $\kappa_{Banzhaf}$.

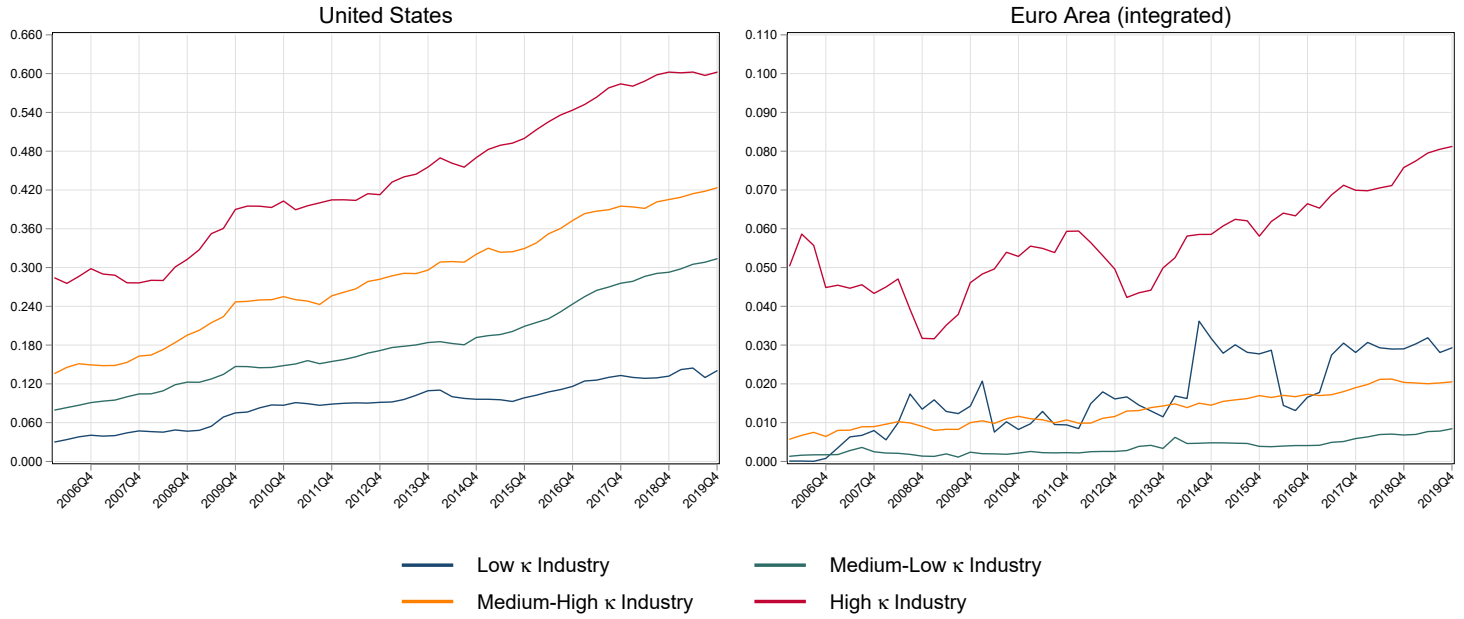


Figure 9A. Common Ownership Persistence by Industry $\kappa_{Banzhaf}$ Quartiles. For each country-industry-quarter combination, we first calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)). We refer to this as the industry $\kappa_{Banzhaf}$. 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.

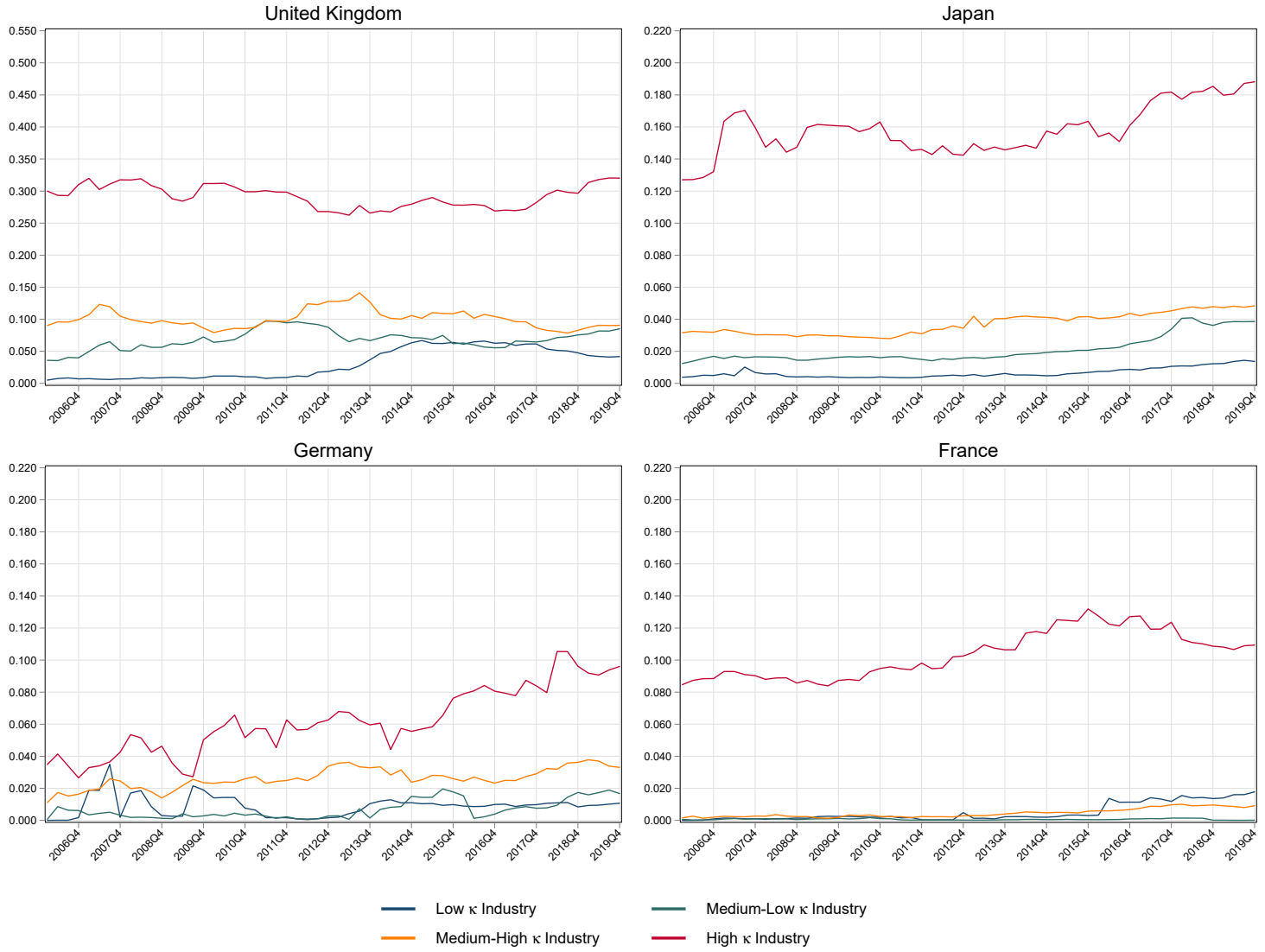


Figure 9B. Common Ownership Persistence by Industry $\kappa_{Banzhaf}$ Quartiles. For each country-industry-quarter combination, we first calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)). We refer to this as the industry $\kappa_{Banzhaf}$. 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.

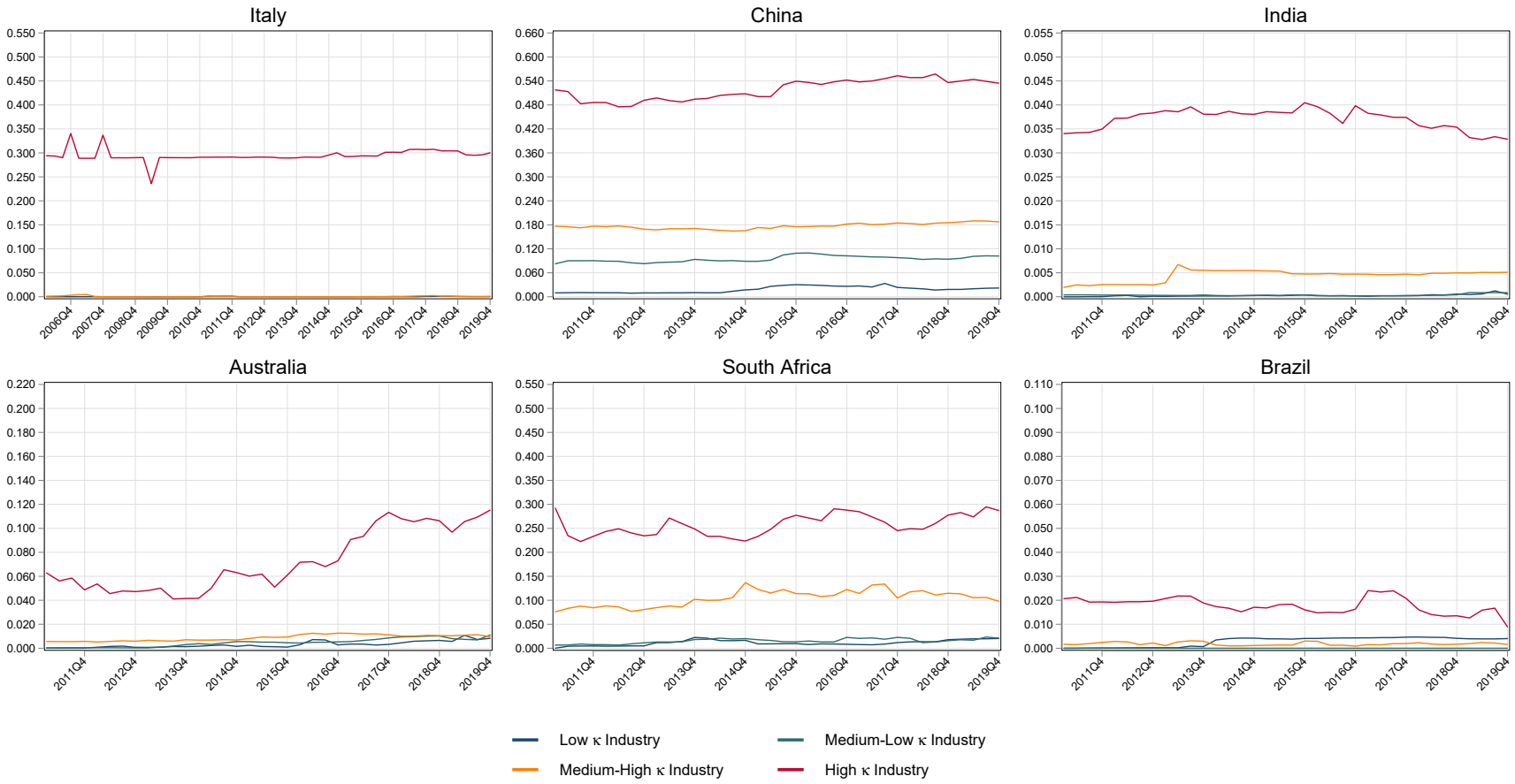


Figure 9C. Common Ownership Persistence by Industry $\kappa_{Banzhaf}$ Quartiles. For each country-industry-quarter combination, we first calculate the arithmetic average of pairwise $\kappa_{Banzhaf}$ as implied by the common ownership hypothesis (Backus et al. (2021)). We refer to this as the industry $\kappa_{Banzhaf}$. 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 in 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 3	Non-Big 3	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

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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 3	Non-Big 3	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 3 and non-Big 3 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. 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***	0.0031***	0.0124***	0.0107***	0.0050*	0.0067**	0.0123***	0.0041***	0.0158***	0.0128***	0.0064**	0.0081***
	(0.0027)	(0.0010)	(0.0026)	(0.0027)	(0.0027)	(0.0027)	(0.0027)	(0.0011)	(0.0027)	(0.0027)	(0.0028)	(0.0029)
Log Age	0.0023	0.0017*	0.0000	0.0019	-0.0012	0.0038	0.0044	0.0026***	0.0018	0.0039	0.0004	0.0060***
	(0.0032)	(0.0009)	(0.0037)	(0.0032)	(0.0024)	(0.0023)	(0.0031)	(0.0009)	(0.0037)	(0.0031)	(0.0024)	(0.0021)
Ownership Concentration (C5)	-0.0603***	-0.0225***	-0.0986***	-0.0555***	-0.0463***	-0.0616***	-0.0768***	-0.0266***	-0.1258***	-0.0713***	-0.0612***	-0.0764***
	(0.0134)	(0.0057)	(0.0237)	(0.0140)	(0.0091)	(0.0120)	(0.0161)	(0.0076)	(0.0270)	(0.0169)	(0.0126)	(0.0145)
Foreign Inv. Hodings				-0.0310*						-0.0359**		
				(0.0155)						(0.0164)		
Big 3 Holdings					0.9529***						1.0694***	
					(0.1736)						(0.1621)	
Govt. Inst. Holdings						0.8659**						0.9847***
						(0.3240)						(0.3432)
Individual/Fam. Holdings						-0.0129***						-0.0218***
						(0.0041)						(0.0063)
Log GDP per Capita	-0.0074*	-0.0018*	-0.0095	-0.0071*	-0.0052	-0.0041**	-0.0086*	-0.0030	-0.0098	-0.0083**	-0.0062	-0.0049*
	(0.0039)	(0.0010)	(0.0084)	(0.0037)	(0.0047)	(0.0020)	(0.0043)	(0.0023)	(0.0083)	(0.0041)	(0.0051)	(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 3, 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 3. Who Are the Most Influential Owners in 2019Q4?

Countries	#Unique Firms	Percentage (%) of Firms where the Largest Owner is...							
		(Owner's Classification)					(Owner's Country)		
		Individual/ Family	Big 3 Inst. Inv.	Non-Big 3 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

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Countries	#Unique Firms	Percentage (%) of Firms where the Largest Owner is...							
		(Owner's Classification)					(Owner's Country)		
		Individual/ Family	Big 3 Inst. Inv.	Non-Big 3 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 3 institutional investor (BlackRock, Vanguard, or State Street), a non-Big 3 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 4. Ownership by the Top 5 Shareholders in 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 3 Inst. Inv.	Non-Big 3 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

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Countries	#Unique Firms	Top 5's Mean Ownership Ratio (%)	Top 5 Investors' Mean Ownership Decomposition (%)							
			(Owner's Classification)					(Owner's Country)		
			Individual/ Family	Big 3 Inst. Inv.	Non-Big 3 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. Are the Top 5 Universal Owners the Same Across All Countries in 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...		
					$\geq 0.5\%$	$\geq 1\%$	$\geq 5\%$
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

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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 6. Top 10 Industries with the Highest Levels of Intra-Industry Common Ownership in 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 Cyclicals	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 Cyclicals	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 Cyclicals	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 Telecomms	0.2392	3.00	15.27	55.74	32.20

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Macro Sector	Sector	Industry	Average Industry Pairwise Kappa (Banzhaf)	Industry Firm Count	Average Industry Firm Count	Industry Market Cap.	Average Industry Market. Cap.
France							
Consumer Staples	Consumer Staples	Distributors (Food & Health)	0.6559	5.00	7.83	19.54	33.58
Utilities	Electric Utilities	Power Producers (Independ)	0.2681	5.00	7.83	92.79	33.58
Consumer Discretionary	Media Cyclicals	Entertainment	0.0407	11.00	7.83	54.33	33.58
Technology	High Tech - Hardware	Electronics	0.0402	8.00	7.83	1.26	33.58
Consumer Discretionary	Autos/Auto Parts	Auto Parts & Equipment	0.0387	9.00	7.83	42.71	33.58
Financials	REIT	REIT-Mixed Properties	0.0356	6.00	7.83	26.29	33.58
Financials	Non-Bank Financial	Financial (Diversified)	0.0325	8.00	7.83	133.03	33.58
Financials	Non-Bank Financial	Insurance (Multi-Line)	0.0321	2.00	7.83	21.48	33.58
Financials	REIT	REIT-Factory Outlet Centers	0.0280	13.00	7.83	52.74	33.58
Industrials	Transportation	Railroads	0.0188	5.00	7.83	20.00	33.58
Germany							
Industrials	Aerospace/Defense	Aerospace/Defense	0.2852	3.00	7.66	20.98	30.27
Consumer Discretionary	Leisure Cyclicals	Gaming, Lottery & Parimutuel	0.2595	4.00	7.66	1.39	30.27
Financials	Banks & Thrifts	Banks (Major Regional)	0.2426	2.00	7.66	2.67	30.27
Financials	Non-Bank Financial	Insurance (Multi-Line)	0.1448	5.00	7.66	180.53	30.27
Telecommunication Services	Communication Services	Integrated Telecom	0.0787	7.00	7.66	96.50	30.27
Materials	Chemicals	Chemicals	0.0696	17.00	7.66	156.11	30.27
Utilities	Electric Utilities	Electric Companies	0.0667	6.00	7.66	49.61	30.27
Technology	High Tech - Hardware	Semiconductors	0.0536	11.00	7.66	37.11	30.27
Financials	REIT	REIT-Factory Outlet Centers	0.0357	4.00	7.66	4.88	30.27
Financials	Non-Bank Financial	Financial (Diversified)	0.0333	15.00	7.66	61.23	30.27
Italy							
Utilities	Electric Utilities	Electric Companies	0.3581	3.00	5.55	99.79	9.84
Energy	Energy	Oil & Gas (Services)	0.3513	3.00	5.55	22.93	9.84
Consumer Discretionary	Autos/Auto Parts	Automobiles	0.3386	3.00	5.55	1.42	9.84
Consumer Discretionary	Autos/Auto Parts	Auto Parts & Equipment	0.1089	5.00	5.55	5.69	9.84
Financials	Non-Bank Financial	Financial (Diversified)	0.0617	19.00	5.55	119.97	9.84
Financials	Non-Bank Financial	Insurance (Life/Health)	0.0514	2.00	5.55	33.76	9.84
Industrials	Business Cyclicals	Building Materials	0.0478	7.00	5.55	5.04	9.84
Consumer Discretionary	Retail	Retail (Computers/Electrons)	0.0373	2.00	5.55	0.47	9.84
Consumer Discretionary	Consumer Cyclicals	Services (Advertising/Mktg)	0.0310	12.00	5.55	0.75	9.84
Telecommunication Services	Communication Services	Integrated Telecom	0.0250	5.00	5.55	11.73	9.84

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Macro Sector	Sector	Industry	Average Industry Pairwise Kappa (Banzhaf)	Industry Firm Count	Average Industry Firm Count	Industry Market Cap.	Average Industry Market. Cap.
		Japan					
Financials	REIT	REIT-Factory Outlet Centers	0.5018	34.00	40.88	91.55	64.71
Financials	REIT	REIT-Apartments	0.4641	7.00	40.88	13.86	64.71
Financials	REIT	REIT-Mixed Properties	0.4338	21.00	40.88	42.14	64.71
Consumer Staples	Food & Beverages	Beverages (Alcoholic)	0.2920	6.00	40.88	46.46	64.71
Financials	Banks & Thrifts	Banks (Major Regional)	0.2722	63.00	40.88	97.18	64.71
Industrials	Transportation	Airlines	0.2600	3.00	40.88	22.48	64.71
Financials	Non-Bank Financial	Financial (Diversified)	0.2596	30.00	40.88	233.88	64.71
Consumer Discretionary	Consumer Cyclicals	Distributors (Durables)	0.2486	10.00	40.88	160.32	64.71
Utilities	Non-Electric Utilities	Natural Gas-Distr-Pipe Line	0.1871	10.00	40.88	26.94	64.71
Industrials	Transportation	Miscellaneous Transportation	0.1854	34.00	40.88	199.45	64.71
		China					
Industrials	Aerospace/Defense	Aerospace/Defense	0.9417	27.00	39.00	57.25	82.94
Utilities	Electric Utilities	Electric Companies	0.7213	42.00	39.00	124.79	82.94
Consumer Discretionary	Media Cyclicals	Broadcasting (TV,Radio,Cable)	0.6234	9.00	39.00	12.53	82.94
Financials	Non-Bank Financial	Investment Banking/Brokerage	0.5692	30.00	39.00	160.61	82.94
Industrials	Transportation	Railroads	0.5580	23.00	39.00	46.13	82.94
Consumer Discretionary	Media Cyclicals	Publishing	0.5261	17.00	39.00	27.25	82.94
Financials	Banks & Thrifts	Banks (Major Regional)	0.4674	17.00	39.00	153.97	82.94
Industrials	Transportation	Shipping	0.4657	23.00	39.00	57.94	82.94
Materials	Mining	Coal	0.3631	39.00	39.00	52.27	82.94
Consumer Staples	Business Staples	Services (Employment)	0.3489	5.00	39.00	3.43	82.94
		India					
Materials	Metals	Diversified Metals	0.2216	4.00	43.31	20.77	22.90
Industrials	Aerospace/Defense	Aerospace/Defense	0.1444	7.00	43.31	4.60	22.90
Financials	Banks & Thrifts	Banks (Major Regional)	0.1303	18.00	43.31	86.41	22.90
Telecommunication Services	Communication Services	Integrated Telecom	0.0846	6.00	43.31	1.81	22.90
Utilities	Non-Electric Utilities	Natural Gas-Distr-Pipe Line	0.0623	8.00	43.31	12.32	22.90
Financials	Non-Bank Financial	Financial (Diversified)	0.0554	66.00	43.31	331.11	22.90
Energy	Energy	Oil & Gas (Exploration & Production)	0.0516	7.00	43.31	25.31	22.90
Consumer Discretionary	Media Cyclicals	Publishing	0.0388	13.00	43.31	0.96	22.90
Consumer Staples	Consumer Staples	Tobacco	0.0351	7.00	43.31	42.78	22.90
Consumer Discretionary	Consumer Cyclicals	Services (Advertising/Mktg)	0.0327	9.00	43.31	0.58	22.90

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 Cyclicals	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 Cyclicals	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 Cyclicals	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 Cyclicals	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 Cyclicals	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 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*					-0.0208				
	(0.0136)					(0.0144)				
CLI - Abuse of Dominance Provisions		-0.0291**					-0.0306**			
		(0.0131)					(0.0143)			
CLI - Anticompetitive Agreement Provisions			-0.0328**		-0.0380***			-0.0324**		-0.0394***
			(0.0126)		(0.0104)			(0.0132)		(0.0104)
CLI - Merger Control Provisions				0.0102	0.0228**				0.0182	0.0312***
				(0.0186)	(0.0092)				(0.0173)	(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**		0.0229***	
	(0.0083)		(0.0085)	
Log #Days. to Start Business (Avg.)		0.0097*		0.0104*
		(0.0052)		(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)					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***			0.0360**		
	(0.0125)			(0.0154)		
Ex Ante Private Self-Dealing		0.0287**			0.0270**	
		(0.0110)			(0.0122)	
Ex Post Private Self-Dealing		-0.0233			-0.0173	
		(0.0272)			(0.0291)	
Creditors Rights			-0.0047			-0.0067
			(0.0066)			(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				-0.0077			
	(0.0101)				(0.0100)			
MESGD - All at Once		-0.0046				-0.0080		
		(0.0121)				(0.0119)		
MESGD - Gradual		-0.0042				-0.0067		
		(0.0055)				(0.0074)		
MESGD - Government			-0.0137**				-0.0168**	
			(0.0059)				(0.0069)	
MESGD - Stock Exchange			-0.0002				-0.0035	
			(0.0141)				(0.0136)	
MESGD - Full Compliance				-0.0038				-0.0067
				(0.0121)				(0.0119)
MESGD - Comply-or-Explain				-0.0068				-0.0109*
				(0.0049)				(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

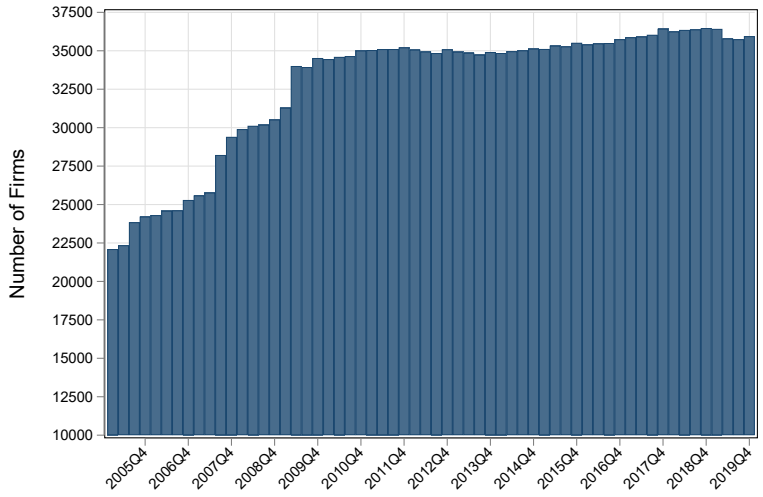
This table reports the results obtained from OLS regressions. The dependent variables are the equal-weighted average of the weights that a firm places on all the N-1 other firms in the country (UO) and only those that also belong to the same industry (CO). The key explanatory variables are: an indicator 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

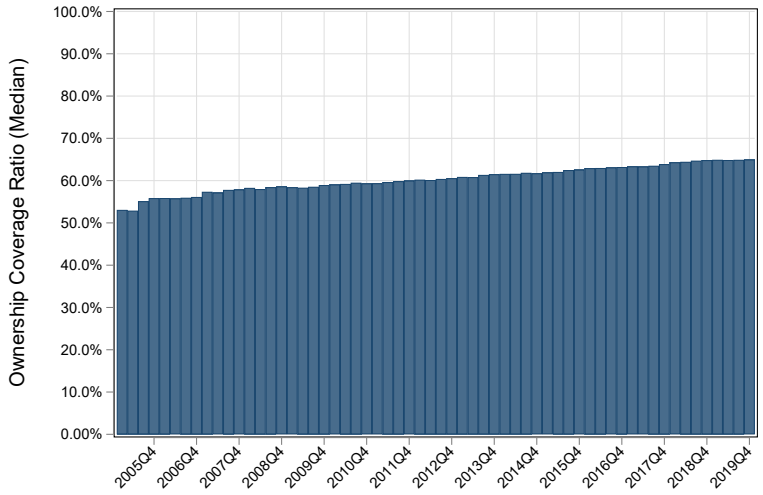
Method of Estimation:	OLS					
Dependent Variable:	Equal Weighted Average Kappa (UO)			Equal Weighted Average Kappa (CO)		
	(10.1)	(10.2)	(10.3)	(10.4)	(10.5)	(10.6)
Political Instability	0.0027			-0.0025		
	(0.0072)			(0.0101)		
Poor Regulatory Quality		0.0229*			0.0230*	
		(0.0128)			(0.0121)	
Corruption			0.0110			0.0136
			(0.0083)			(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.

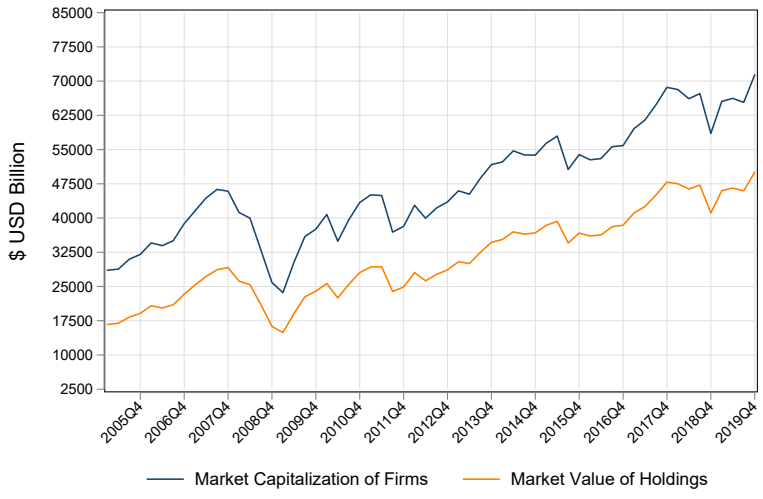
Appendix to
"Universal and Common Ownership: A Cross-Country Analysis"



(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.

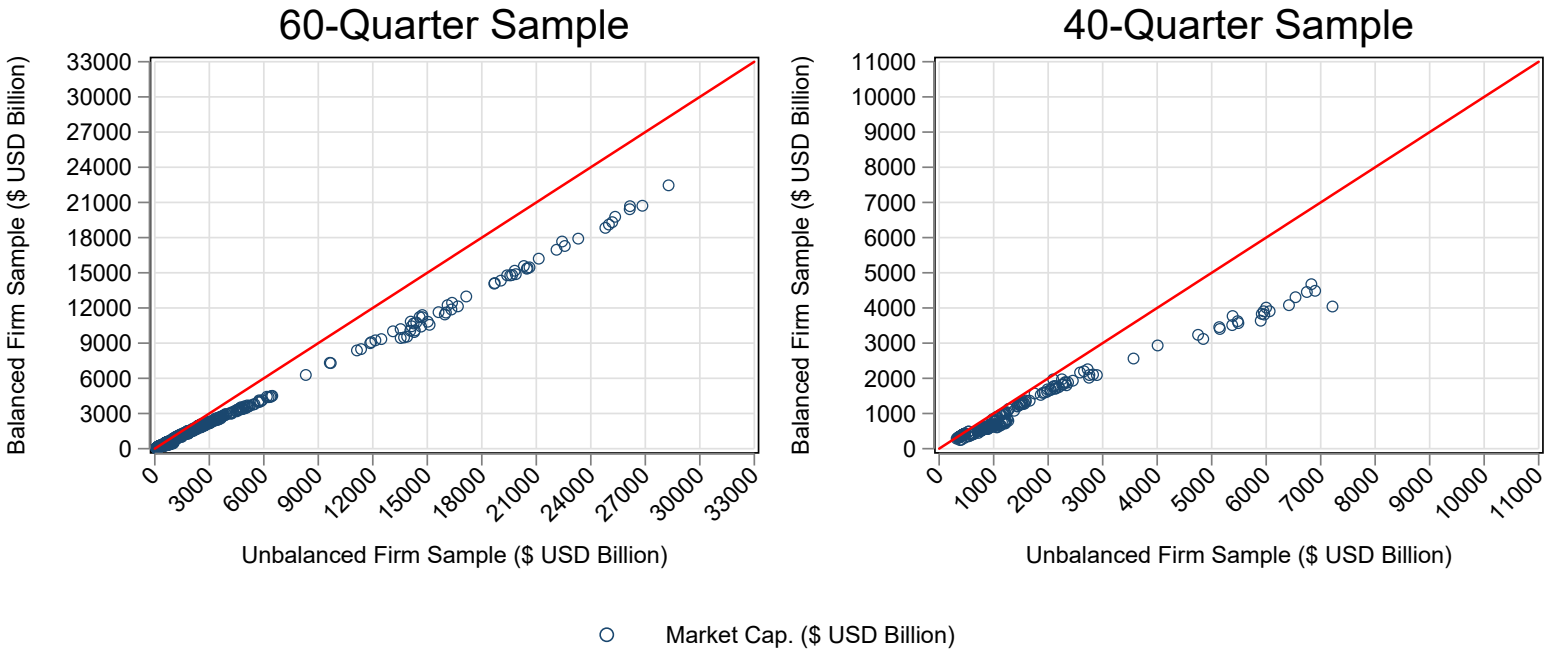


Figure A2. Is the Balanced Panel a Good Representation of the Country Samples? This figure illustrates the total market capitalization of each country-quarter combination, comparing values derived from a balanced panel with those from an unbalanced panel. The figure based on the 60-quarter sample depicts 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.

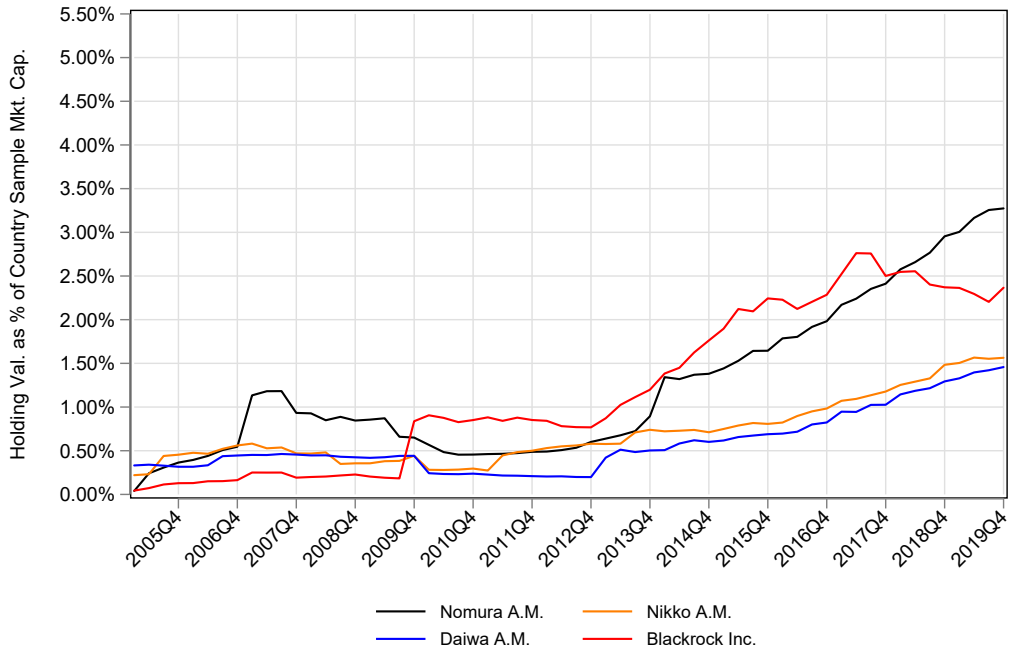


Figure A3. Did the Japanese ETF Purchasing program enhance Universal and Common Ownership? To provide evidence on the impact of the Bank of Japan's ETF purchasing program, we analyze the evolution of holdings by the so-called "Big 3" Japanese institutional investors (Nomura, Nikko, and Daiwa) and BlackRock 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

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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 Classifications

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
Firm Level Variables (continuous variables are winsorized at the 5% level)	
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 3 Holdings	Ownership by the Big 3 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.
Country Level Variables (continuous variables are winsorized at the 5% level)	
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

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Variables	Definitions
	and corporate law legislation. We use the mean value over the period 1978 to 2003. (Djankov et al. (2007))
Political Instability	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 3 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.