China's Global Ownership

Abstract

We study the global footprint and real effects of Chinese overseas corporate ownership. By assembling a comprehensive micro-level dataset of 161,773 firms across 159 countries (2012–2021), we independently reconstruct multi-layered ownership chains to trace capital through offshore tax havens to its ultimate origin. This approach reveals a global footprint substantially broader than official FDI statistics. Chinese-controlled foreign assets expanded at 20% annually, reaching $2.1 trillion, or roughly 3% of global corporate assets, by 2021. Chinese investors, and state-owned enterprises (SOEs) in particular, strategically target R&D-intensive and supply-chain-linked firms. Following acquisition, target firms raise R&D expenditure and capital stock, yet these inputs fail to generate higher patent output and are accompanied by a significant decline in profitability. The effects extend beyond acquired firms. As Chinese-controlled assets rise within a host-country industry, firms not yet under Chinese control cut R&D while controlled targets move in the opposite direction. Among the Chinese ultimate owners, the sharper response is not a surge in patent volume but a reorientation of subsequent invention toward technologies associated with the foreign firms they control. These findings reveal a cross-border reallocation of innovative activity rather than a mechanical transfer of patents: investment concentrates inside Chinese-controlled targets, innovation contracts among local peers, and acquired technology becomes closely integrated into invention recorded at the Chinese parent. Chinese global ownership thus emerges as a state-driven strategy for building technological capacity despite deteriorating target profitability.

Introduction

Cross-border capital flows are increasingly defined by shifts in corporate ownership and control rather than traditional portfolio flows or greenfield investment (e.g., Di Giovanni 2005; Riddiough and Zhang 2025). This transition is consequential because the identity and nature of the ultimate owner dictate the allocation of capital, the direction of innovation, and the configuration of global supply chains. China provides a unique laboratory to study these dynamics, as its global investment stock has surged from $317 billion in 2009 to over $2.7 trillion by 2021. Many of these investments are concentrated in sectors host countries regard as strategic—including advanced manufacturing, information and communication technologies, and natural resources—and a substantial share are executed by state-owned enterprises (SOEs). As a result, China's global footprint of corporate ownership and control has become central to global debates over industrial policy, national security, and the exercise of geoeconomic influence in a globalized economy (OECD, 2020).

Despite the intensity of this debate, the empirical evidence remains fragmented. Existing research and official statistics predominantly rely on aggregate Foreign Direct Investment (FDI) data, which are conceptually inadequate for identifying the ultimate locus of corporate control. Because FDI statistics are organized by the jurisdiction of the immediate investor, they reflect the last intermediary through which capital passes rather than the country where that investment originates. These standard measures fail to trace multi-layered ownership chains through offshore financial centers and provide limited visibility into whether controlling entities are state-owned or private. Such structural limitations are uniquely consequential in the Chinese context, where a substantial share of outward investment is routed through conduit jurisdictions such as the Cayman Islands and other offshore centers (Coppola et al., 2021; Clayton et al., 2023). Consequently, traditional FDI frameworks not only understate China's global corporate footprint but also obscure the specific governance mechanisms through which Chinese capital influences foreign firms.

This paper makes the conceptual jump from measuring capital flows to mapping the architecture of global ownership and control. By assembling a comprehensive micro-level dataset

that looks through offshore conduits to identify ultimate owners, we address three fundamental questions that existing aggregate data cannot answer: (i) where does Chinese capital actually sit within the global corporate network once multi-layered ownership chains are decompounded; (ii) who ultimately controls the firms receiving Chinese investment, and to what extent do the strategic mandates of state-owned enterprises differ from those of private entities; and (iii) how does Chinese ownership influence firm-level investment, innovation, and supply-chain configurations, and what are the systemic implications for non-target peer firms operating in the same industry?

To provide systematic answers to these questions, we construct, to our knowledge, the most comprehensive micro-level dataset of China's global corporate ownership to date. By independently reconstructing ownership hierarchies, we trace both direct and ultimate Chinese shareholders through multi-layered chains and offshore financial centers. This granular approach allows us to operationalize the conceptual jump from equity to control, as we distinguish between simple ownership and effective control rights, separately classify Chinese state-owned enterprises (SOEs) and private investors, and isolate capital originating from mainland China versus Hong Kong and Macau. We integrate these ownership data with firm-level financial statements, international patent filings, and global supply-chain networks. Our final panel comprises 161,773 firms across 159 countries from 2012 to 2021, accounting for more than 80% of global corporate assets of non-financial firms.

Our analysis reveals several stylized facts that underscore the unprecedented scale and strategic nature of China's global corporate footprint. First, Chinese outward investment is the fastest-growing among major economies, expanding at an average annual rate of 20%. By 2021, Chinese entities controlled approximately $2.1 trillion in foreign assets, representing nearly 3% of global corporate assets. When including Hong Kong and Macau, 'Greater China' ranks as the second-largest source of outbound corporate control globally ($3.3 trillion), surpassed only by the United States. Second, this expansion is highly concentrated in knowledge-intensive and strategic sectors, led by manufacturing ($393 billion) and professional scientific activities ($260 billion). Third, the geographic distribution is heavily skewed toward advanced economies; Europe and

North America together account for nearly 80% of Chinese-controlled assets. Notably, our ownership-tracing approach reveals that 37.7% of these firms involve at least one intermediary in a tax haven, a pattern that standard FDI statistics cannot capture.

Moving beyond descriptive patterns, we document significant real effects of Chinese ownership on target firms, identifying a distinctively state-driven investment model. We find that Chinese investors, and SOEs in particular, target R&D-intensive firms and raise their R&D expenditures by 6.6% following acquisition, with propensity-score-matched estimates being two to three times larger. This increase in R&D expenditures is largest among firms with intermediate levels of Chinese corporate ownership between 25 and 50 percent. However, this increase in inputs does not translate into higher patent output for the target firm and is accompanied by a 1.2% decline in return on assets (ROA). This disconnect suggests significant operational inefficiencies or, alternatively, a strategic prioritization of technology access over firm-level profitability. Consistent with this interpretation, we find evidence of innovation 'spillbacks': while target firms exhibit no increase in patenting, the Chinese parent firms experience an increase in granted patents following their first developed-economy acquisition. Furthermore, private Chinese investors drive supply-chain integration by increasing the likelihood that targets become suppliers to Chinese entities, whereas SOE acquisitions show no such commercial vertical synergies.

To strengthen the causal interpretation of these findings, we leverage the *Made in China 2025* (MIC2025) initiative as a quasi-natural experiment. Launched in 2015, this state-led policy explicitly encouraged overseas acquisitions in ten strategic high-tech sectors to upgrade domestic industrial capabilities. While the policy was anticipated in broad terms, the discrete announcement of sector-specific targets marked a significant change and was publicly revealed only in 2015, allowing for the identification of its causal impact on corporate outcomes. Using a difference-in-differences design, we find that the introduction of MIC2025 led to a significant increase in Chinese ownership within targeted sectors, driven primarily by SOEs. The post-policy outcomes for these firms: increased R&D spending without commensurate patent gains and declining

profitability, mirror our main results and reinforce the interpretation that Chinese ownership leads to meaningful but often inefficient changes in firm behavior.

When repeating our analysis for the US and India as comparator countries, we do not find similar patterns for R&D investment and profitability from corporate acquisitions. We conclude that compared to the market-based U.S. model and more cautious Indian investment patterns, China represents a unique state-driven paradigm that accepts substantial short-run performance costs to internalize global technological capacity.

Next, we examine the broader systemic influence of Chinese investment and find that it reshapes host-country competitive dynamics. A higher concentration of Chinese SOEs in a country-industry crowds out R&D investment and patenting at non-target peer firms. However, aggregate industry-level innovation and profitability remain broadly unchanged, suggesting a redistribution of innovative effort rather than an industry-wide decline. We also find that private Chinese investors drive vertical integration by increasing the probability that targets become suppliers to Chinese entities, a commercial synergy absent in SOE acquisitions. These results are reinforced when we refine the analysis by zooming in on firms that are not yet under Chinese ownership. We show that greater Chinese control within a country–industry is associated with lower R&D and patenting among firms not yet under Chinese ownership, alongside comparatively stronger outcomes among Chinese-controlled targets, consistent with a reallocation of innovative activity within affected industries.

Finally, we examine the innovation spillback result for Chinese ultimate owners by investigating whether acquiring a foreign subsidiary raises the parent's own patenting, and whether the parent's subsequent patents build on the technology of the firm it bought. We find that, although foreign acquisitions are followed by only a modest and imprecisely estimated increase in the parent’s overall invention-patent volume, the parent’s subsequent invention patents are substantially more likely to cite the patent portfolio of a firm it owns. Taken together, the evidence is consistent with acquired technology becoming more closely integrated into inventive activity recorded at the Chinese parent.

These dual findings—innovation spillbacks to parents and crowding out of local peers—suggest that the impact of foreign state ownership is not merely a bilateral issue between an acquirer and a target, but a systemic shift in the global innovation equilibrium. By redistributing innovative effort from host-country market-based firms toward state-led entities that internalize gains at home, Chinese global ownership introduces a novel mechanism through which national industrial policies exert extraterritorial effects. Our work thus provides a foundation for an evidence-based debate on how global corporate networks can be utilized as instruments of geoeconomic strategy.

Our work provides the first systematic, global, firm-level analysis of the network of corporate ownership and control originating from a major emerging economy. We make three primary contributions to the literature:

First, we contribute to the literature on global capital flows and financial intermediation by addressing a systemic measurement gap. We show that conventional FDI statistics are conceptually inadequate because they stop at the immediate jurisdiction of the investor, misattributing a massive share of capital to offshore financial centers. By independently reconstructing multi-layered ownership hierarchies and tracing capital through tax havens to its ultimate origin, we build upon the work of Lane and Milesi-Ferretti (2007), Coppola et al. (2021), and Clayton et al. (2023). We demonstrate that looking through offshore conduits is essential for understanding the true locus of corporate control in the modern global economy.

Second, we advance research on state capitalism and corporate governance by analyzing the effect of state-linked corporate ownership on innovation, control, and international investment patterns. While existing literature has long explored the performance and political objectives of domestic state-owned enterprises (e.g., Megginson and Netter, 2001; Faccio and Lang, 2002; Lin, Ma and Su, 2009; Lin et al., 2011; Musacchio and Lazzarini, 2014), we document how state-led capital behaves when it crosses international borders. We show that Chinese SOEs follow a strategic paradigm distinct from the market-driven models of U.S. or European multinationals. By accepting weaker firm-level profitability and higher operational costs in exchange for technology

access, these state-led investors challenge traditional theories of the firm that assume purely profit-maximizing objectives.

Third, we contribute to the literature on international technology transfer and the determinants of global mergers and acquisitions (e.g., Di Giovanni 2005; Baker et al. 2009; Chari et al. 2010; Chari et al. 2012). We document a novel "innovation disconnect": while target firms bear the cost of increased R&D expenditures, the innovation benefits—measured by granted patents—do not materialize locally. Instead, we provide the first evidence of systematic innovation "spillbacks" to parent firms. While recent literature documents how the global footprint of U.S. multinationals reshapes home-country macroeconomic outcomes, such as driving persistent trade imbalances (Alfaro and Alviarez, 2025), we document a novel mechanism where foreign state ownership reallocates the geography of innovation back to the home country. This adds a strategic dimension to the classic M&A literature, which has traditionally emphasized drivers such as market access, financial market depth, investor protection, and tax optimization (e.g., Di Giovanni 2005; Aguiar and Gopinath, 2005; Baker et al. 2009; Bris and Cabolis, 2008; Chari et al. 2010; Huizinga and Voget, 2009).

Our paper proceeds as follows. Section 1 describes the data and identifies Chinese ownership. Section 2 presents stylized facts regarding the scale, sectoral distribution, and geographic concentration of China's global corporate footprint. Section 3 evaluates the real effects of Chinese investment on target firms' innovation, financial performance, and supply-chain integration. Section 4 provides causal evidence for these impacts by leveraging the 'Made in China 2025' initiative as a quasi-natural experiment. Section 5 compares our findings with other countries. Section 6 investigates systemic spillover effects on non-target peer firms, while Section 7 explores the innovation 'spillback' channel to Chinese parent firms. Section 8 concludes.

1. Identifying Chinese Ownership

1.1. Orbis Ownership and Financial Data

Our primary data source is Moody's Orbis (formerly Bureau van Dijk), which provides harmonized ownership and financial data for over 400 million public and private firms in 212 economies. We construct a panel spanning 2012 to 2021, a decade characterized by dramatic growth in China's global corporate footprint. To mitigate sample attrition bias, we utilize a series of annual Orbis downloads to build a robust panel dataset that retains firms that subsequently exit the database, following the established methodology in Kalemli-Ozcan et al. (2024).

The Orbis Ownership data provides the historical ownership information of corporations. For each firm in a given year, it reports the firm's name, identifier (*BVDID*), country of domicile, its direct shareholders, and their equity stakes. It also reports GUO25 and GUO50, which identify the global ultimate owner when *each and all* levels in the ownership hierarchical chain hold at least 25% or 50% of equity, respectively. [2]

To study China's outbound investment, we focus on non-Chinese firms. We exclude all entities whose *BVDID* starts with "CN" or whose *CTRYISO* code equals "CN," as well as firms domiciled in Hong Kong and Macau, which are under Chinese sovereignty but are separate economic jurisdictions. [3]

The Orbis Financials module provides firm-level financial statements. For multinational groups, Orbis often reports both consolidated and unconsolidated accounts. To avoid double-counting, we retain unconsolidated accounts when both are available. [4] We also exclude financial firms, which frequently hold or finance vehicles that do not engage in actual business. Most firms in Orbis report unconsolidated accounts.

For each firm-year, Orbis classifies filings as "local registry filing" or "annual report." When both are available, we keep the local registry filing, which represents the predominant reporting format. We use the U.S. dollar version of these filings rather than local currencies to facilitate

[2] Orbis uses DUO and GUO as the abbreviations of Domestic Ultimate Owner and Global Ultimate Owner, respectively. Since we focus on international investments in this paper, the concept of GUO is more relevant. We use the terms DUO, GUO, and UO interchangeably to abbreviate the term Ultimate Owner throughout the paper.

[3] We use domicile country instead of incorporation country to identify Hong Kong and Macau firms because foreign firms may register in Hong Kong and Macau for tax reasons but not actually operate there.

[4] If a firm reports both accounts for the same financial year, only the unconsolidated account is retained. If a firm has unconsolidated accounts available in some years but only consolidated accounts in other years, those years with only consolidated accounts are excluded.

cross-country analyses. We restrict the sample to annual accounts, exclude filings covering fewer than 12 months, and, when fiscal year-ends change within a calendar year, keep the account with the latest closing date. For the remaining duplicates, we select the account with the most complete set of key variables, in particular, total assets.

From Orbis Financials, we collect firm-level variables in several categories. Financial position variables include total assets (*TOAS*), fixed assets (*FIAS*), long-term debts (*LTDB*), loans (*LOAN*), and creditors (*CRED*). [5] Performance metrics comprise R&D expenses (*RD*), sales (*TURN*), and return on assets (*ROA*). We also collect operational data, including the number of employees (*EMPL*) and the year of incorporation (*DATEINC_year*). We construct a new variable, *Debts*, as long-term debt plus loans plus creditors. At the industry-country-year level, we compute a Herfindahl index based on sales to measure market concentration. All raw variables are winsorized. For variables not expressed as ratios (R&D, total assets, fixed assets, debts), we then apply a logarithmic transformation after winsorization. Table A1 of the Appendix details variable definitions.

We merge ownership and financial data by *BVDID* and year, obtaining 119 million firm-year observations for 24 million firms in 168 countries. We then construct our main analysis sample in two steps. First, we require non-missing total assets. Second, we restrict to firms Orbis classifies as "*Very Large Company*." Although these account for about 1% of all firms in the Orbis dataset, they hold at least 80% of total assets among firms with non-missing ownership and asset information and thus represent the bulk of global corporate assets.

The *Very Large Company* classification criteria vary by country, reducing the likelihood of any country being overweight or underrepresented in this sample. Most importantly, the coverage of many key variables is substantially better in the *Very Large Company* sample compared to the full sample. For instance, among all firms with non-missing assets and ownership information, 97.06% of firm-years have missing R&D expenses, versus 82.76% in the *Very Large Company* subsample.

[5] "Creditors" in Orbis refer to “trade payables to suppliers and contractors."

Our final sample contains 1,166,282 firm-year observations for 161,773 firms in 159 countries.

1.2. Methodology: Tracing Ultimate Ownership and Control

We identify Chinese ownership using a combination of direct shareholding data and independently reconstructed global ownership chains. While we first flag direct Chinese shareholders (those with a *BVDID* or *ISO* country code starting with "CN"), this approach fails to capture the significant portion of Chinese capital routed through multi-layered and offshore structures.

To overcome the known incompleteness of standard database flags, such as the Orbis *GUO25* indicator, we implement an algorithmic procedure to trace ownership layer-by-layer across all jurisdictions. Our reconstructed *GUO25* matches 94% of Orbis's existing flags but identify 15% additional ultimate owners that the standard database fails to report. Crucially, this methodology allows us to compute precise voting and cash-flow rights at every tier of the hierarchy.

We then broaden our scope to identify *GUO10*, a 10% threshold that is particularly effective at uncovering ownership structures obscured by tax haven intermediaries. The impact of this refinement is substantial. Using Orbis's *GUO25*, we identify 4,049 firms with Chinese ultimate owners, 29.2% of which involve at least one tax haven intermediary. With our reconstructed *GUO25*, the number is highly comparable, with 3,959 firms, 30.0% involving tax havens. Under *GUO10*, the number rises to 6,242 Chinese-owned firms, with about 37.7% using tax haven conduits.

Two cases illustrate the importance of using *GUO10* and tracing through offshore entities. Rio Tinto, a UK mining conglomerate, is not flagged as Chinese-owned under Orbis's *GUO25*, but our *GUO10* links its 14% Singaporean shareholder, Shining Prospect PTE LTD, to the Aluminum Corporation of China, a Chinese SOE. Bang & Olufsen, a Danish consumer electronics firm, similarly appears non-Chinese under *GUO25*, but our *GUO10* links its 15.1% Bermudan shareholder, New Sparkle Roll International Group Limited, to a Chinese entity, revealing Chinese ultimate ownership.

Based on these reconstructed chains, we define two primary firm-level indicators:

- **CNOwn (Ownership):** Equals one if a firm has at least one direct Chinese shareholder or a Chinese global ultimate owner under the GUO10 definition.
- **CNOwn (Control):** Equals one if a Chinese entity is the largest direct shareholder with at least 10% equity, or if a Chinese global ultimate owner maintains at least 10% equity at every tier of the ownership chain.

We further split Chinese investors into state and private categories using a two-step classification approach. First, we use Orbis entity type codes to identify Chinese government agencies, labeled as "public authority, state, government". Second, we define a Chinese SOE as any firm whose global ultimate owner is such a government entity; all other Chinese firms are classified as private.

We validate this classification approach by applying it to a sample of Chinese-domiciled firms and examining the resulting trends in SOE capital over time. The resulting SOE share of domestic assets under our 25% threshold is consistent with Allen et al. (2024), who use a 30% threshold and estimate that SOEs account for approximately 40% of China's domestic corporate assets. [6]

Using this classification, we construct two additional ownership variables. *CNOwn*SOE* is equal to one if a firm is owned by a Chinese government agency. *CNOwn*Pvt* is equal to one if the ultimate owner is a Chinese private firm. These indicators allow us to separately study the patterns and real effects of state versus private Chinese global ownership.

1.3. Other Data

International patent data. We obtain global patent data from the Orbis Patent module, which links Orbis firm identifiers to patent records from the Worldwide Patent Statistical Database (*PATSTAT*). PATSTAT reports application, publication, and grant information, plus inventor,

[6] Note that while we use a 10% threshold to identify whether a firm is under Chinese ownership or control, we adopt a stricter criterion when classifying Chinese state-owned enterprises. Specifically, a Chinese entity is labelled as a "China SOE" if its ultimate owner is a Chinese central or local government agency and it holds at least 25% equity at each tier of the Chinese ownership chain. This 25% threshold aligns with conventional definitions of significant control and helps avoid over-classifying firms with marginal state ties as SOEs. In a similar vein, Allen et al. (2024) define firms with 30% of state ownership or above as "State-Owned Enterprises (SOEs)" that have "relative state control" and those with 10% or below as "partial SOEs" with "minority state ownership." A detailed comparison with Allen et al. (2024) is presented in the Online Appendix Figure O4.

applicant, and family identifiers, and covers roughly 168 million patent filings for about 2.4 million companies. The data have been widely used in prior studies, for example, Kong et al. (2022) and Moshirian et al. (2021).

Orbis Patent matches these records to both public and private firms, enabling us to link innovation outcomes to ownership and financial information. Our main innovation measure is *#GrantedPatents*, defined as the number of patents applied for by the firm that are filed within the following three years.

To avoid double-counting, we follow the methodology of Liu and Ma (2021): patent filings across multiple jurisdictions are counted once per family, and joint applications by multiple firms are apportioned equally across applicants using fractional counts. As a validation step, we aggregate applied and granted patents by office and year and compare these aggregates to the summary statistics in Liu and Ma (2021). Our data closely replicate their reported patterns (see Figures O2 and O3 in the Online Appendix).

Global supply chain data. We obtain firm-level supply-chain links from FactSet Revere. A firm is classified as a customer of China if FactSet records that it purchases goods or services from a Chinese firm or receives licensed products, patents, intellectual property, or technology from a Chinese firm. A firm is classified as a supplier to China if FactSet records that it sells goods or services to a Chinese firm, provides paid manufacturing, marketing, branding, advertising, or distribution services, or licenses products, patents, intellectual property, or technology to a Chinese firm.[7]

We merge FactSet Revere with our Orbis sample by ISIN and calendar year; about 10% of firm-year observations are matched.

At the country-industry level, we use the OECD Input-Output Tables, which report intermediate input and output flows for 45 ISIC Rev. 4 industries in 76 countries (OECD, 2023).

[7] In the supply chain data, we treat both firms in China and firms owned by Chinese entities as Chinese firms. Following Adelino et al. (2017), we consider both direct and reverse supply chain relationships. For example, a direct supplier relationship means that the company is reported by the Chinese source company as a supplier or the company itself reports a Chinese target company as its customer.

For each country-industry-year, we construct two measures: the China input share (intermediate inputs sourced from China divided by total intermediate inputs), *II_CN / II*, and the China output share (intermediate outputs sold to China divided by total intermediate outputs), *IO_CN / IO*. Because our firm-level industries also follow ISIC Rev. 4, we can merge these measures directly by country, industry, and year.

2. Stylized Facts of China's Global Corporate Ownership

In this section, we document key patterns in China's global corporate footprint. We first describe the scale and distribution of Chinese ownership across countries, regions, and industries. We then relate Chinese ownership to target-country and industry characteristics, focusing on innovation, supply-chain linkages, and natural resources.

2.1 Global Scale and Distribution

Using the ownership measures described in Section 1, we compute, for each firm, the total assets owned or controlled by Chinese investors, either through direct shareholding or ultimate ownership. Aggregating these firm-level assets, Table 1 reports China's global corporate footprint by country and industry, ranked by total asset value and by the share of local assets under Chinese ownership or control.

To quantify Chinese presence in a given country or sector, we assign the full asset value of a firm to China whenever it meets our Chinese-ownership or control threshold. We do not weight assets by cash-flow rights along the chain, which avoids double-counting the same assets through multiple intermediate entities. All country- and industry-level statistics therefore represent the share of local assets held by firms classified as Chinese-owned or Chinese-controlled.

[Insert Table 1 about here]

Country-level patterns. Panel A of Table 1 shows that Chinese ownership is highly concentrated in a small set of jurisdictions. On average over 2012-2021, firms owned by Chinese shareholders account for 46% of total assets in the Cayman Islands, 22% in Bermuda, and 17% in the British Virgin Islands. These numbers highlight the central role of offshore financial centers in

Chinese outbound investment. Significant ownership shares also appear in Portugal (14%) and Singapore (10%), which serve as gateways to the European Union and key Asian hubs.

Panel B ranks countries by the dollar value of assets held by Chinese shareholders. The Cayman Islands tops the list with USD 424 billion per year over 2012-2021, followed by the United Kingdom with USD 380 billion. Other advanced economies such as Australia, Singapore, and Bermuda also rank highly. These volumes reflect both China's extensive use of offshore and financial centers and its emphasis on investing in developed markets.

Industry-level patterns. Panels C and D of Table 1 summarize industry patterns. Chinese entities hold the highest average ownership shares in education (4.6%), accommodation and food services (4.5%), mining and quarrying (4.2%), transport (3.1%), and information and communication (3.0%). These shares point to a mix of traditional infrastructure-related sectors and capital-intensive service and knowledge industries.

In terms of asset volumes, Chinese investment is largest in manufacturing (average USD 393 billion), professional and scientific activities (USD 260 billion), and energy and utilities (USD 195 billion). Real estate ownership also rises sharply: Chinese-controlled real estate assets average USD 136 billion over the period, corresponding to roughly a 902% increase from 2012-2014 to 2019-2021. Overall, these patterns suggest a dual strategy that targets both heavy industrial sectors and emerging, service-based or knowledge-intensive domains.

[Insert Figures 1, 2, 3, 4, and 5 about here]

Evolution over time. Figure 1 plots the evolution of China's global corporate ownership among very large firms. Total assets owned by Chinese shareholders increase from USD 551 billion in 2012 to USD 2.5 trillion in 2021, implying an average annual growth rate of about 20%. For comparison, U.S. outbound corporate ownership grows from USD 10.0 trillion to USD 18.2 trillion over the same period, at an annual rate of about 7.0%. When Hong Kong and Macau are included, Greater China's outbound holdings rise from USD 939 billion in 2012 to USD 4.27 trillion in 2021.

Figure 2 focuses on China's global control of the very large firm sample. Of the USD 551 billion assets owned by Chinese shareholders in 2012, Chinese investors control USD 364 billion, or about 0.58% of global corporate assets. By 2021, Chinese-controlled assets reach USD 2.1 trillion under the narrow (China-only) definition and USD 3.3 trillion for Greater China. This again corresponds to an average annual growth rate of 20%. As of 2021, Greater China ranks second globally in outbound corporate control, just behind the United States (USD 9.3 trillion) and comparable to the United Kingdom (USD 3.2 trillion).

Sectoral and regional trends. Figure 3 documents sectoral trends in China's overseas asset allocation. Ownership in resource-based industries such as mining and quarrying remains relatively stable over time, while substantial growth occurs in technology- and capital-intensive sectors. In particular, assets in information and communication increase sharply, and real estate assets under Chinese control grow at an exceptional rate, consistent with the patterns in Table 1.

Figure 4 shows the regional distribution of Chinese outbound corporate assets. As of 2021, Chinese investment is concentrated in Europe (41.6%) and North America (37.7%), with Asia accounting for 15.0% of total Chinese-held assets. This regional pattern underscores a strategic focus on advanced economies. At the same time, China's share of investment in Africa, Oceania, and South America declines from a peak of 17.1% to below 6.0% over the sample period. The share in Asia also falls modestly, from 18.1% in 2012 to 15.0% in 2021. In Figure A1 of the Appendix, we also zoom in on key tax havens and show that, as of 2021, firms in which Chinese entities hold ownership stakes account for 58.0% of total corporate assets in the Cayman Islands, 40.6% in Bermuda, and 15.0% in the British Virgin Islands. These numbers underscore the central role of offshore centers in China's global ownership network.

Ownership composition. Figure 5 traces the composition of China's global ownership by state versus private investors. Both components rise steeply over 2012-2021, but the expansion is driven primarily by private firms: their overseas asset holdings grow faster and reach clearly higher levels than those of SOEs by the end of the sample. SOE-controlled assets also increase over time, yet at a more modest pace.

2.2 Targets of Chinese Overseas Investment

Our analysis begins with relating Chinese ownership to firm and industry characteristics. Table 2 reports summary statistics for the full sample and for firms with and without Chinese owners. Firms with Chinese owners are, on average, larger in terms of assets and sales, spend more on R&D, are slightly less likely to report blank R&D, and have lower ROA than other very large firms. They also appear more frequently as suppliers to or customers of Chinese firms in the FactSet Revere data, consistent with a stronger connection to Chinese production networks.

[Insert Tables 2 and 3 about here]

At the country-industry-year level, we study which sectors attract more Chinese capital by regressing the log of total assets owned by Chinese entities in industry j of country c in year t+1 on contemporaneous country-industry characteristics, including aggregate R&D, profitability, supply-chain linkages with China (from OECD input-output tables), and measures of natural resource abundance, controlling for size, leverage, and concentration, plus fixed effects.

The estimates in Table 3 show three robust patterns. First, country-industries with higher aggregate R&D expenditure attract significantly more Chinese-owned assets. A 10% increase in aggregate R&D is associated with approximately 0.88%-1.26% more Chinese-owned assets overall, 0.94%-1.30% more assets owned by private Chinese investors, and 0.23%-0.29% more assets owned by Chinese SOEs, holding other factors constant. These elasticities are statistically significant at conventional levels, indicating a systematic tilt of Chinese investment toward R&D-intensive sectors.

Second, Chinese investment is strongly tilted toward sectors that are more integrated with China in global value chains. Quantitatively, a one percentage point increase in a sector's output share to China (*IO_CN/IO*) is associated with roughly 6-11% more Chinese-owned assets overall or assets owned by private or SOE investors in the following year. By contrast, the China input share (*II_CN/II*) is significantly positive for total Chinese-owned assets or privately-owned assets, and significantly negative for SOE-owned assets. This asymmetry suggests that while both private

and state investors follow downstream demand linkages to China, SOEs are relatively less likely to invest in sectors that already rely heavily on Chinese intermediate inputs.

Third, Chinese investment is systematically higher in countries with larger natural resource rents, but the difference between SOEs and private investors is modest. The coefficient on natural resource rents (as a share of GDP) is positive and statistically significant for all three dependent variables in Table 3. A one percentage point increase in natural resource rents is associated with roughly 1.5% more total Chinese-owned assets, 1.3% more assets held by private Chinese investors, and about 0.5% more assets held by Chinese SOEs, holding other factors constant.

In Columns (1), (3), and (5), we report indicator variables for the agriculture and mining sectors; in Columns (2), (4), and (6), we instead include a full set of sector fixed effects. Across specifications, we find a positive coefficient for the mining and quarrying (energy) sector only when the dependent variable is SOE-owned assets. This pattern is intuitive: because China is relatively resource-scarce in energy, the state has strong incentives to encourage SOEs to target energy-related sectors in overseas investment. Consistent with this view, SOE ownership is higher in these sectors.

3. The Real Impact of China's Ownership on Target Firms

Having established that Chinese investors strategically target certain industries, we now turn to the outcomes of these investments at the firm level. In this section, we evaluate how Chinese ownership affects the acquired firms' behavior, in particular, innovation input and output (R&D spending and patenting), firm growth (assets and employment), profitability and efficiency (ROA and other financial metrics), and supply chain integration. We also assess whether the effects differ when the investor is an SOE versus a private entity.

Formally, we estimate firm-level panel regressions that compare the changes in outcome variables for firms before and after becoming Chinese-owned (treatment group) to contemporaneous changes in similar firms that remain without Chinese ownership (control group). This approach includes firm fixed effects to control for any time-invariant differences between

target and non-target firms, and year fixed effects to account for macroeconomic trends. In Section 3.4, we implement an explicit propensity-score matched, stacked difference-in-differences design as a robustness check. We also employ country-by-year and sector-by-year two-way fixed effects in the Appendix. The findings are robust across these alternative specifications. In essence, identification comes from within-firm changes around the event of Chinese acquisition, relative to peers, controlling for common shocks.

Specifically, we estimate the following panel regression model:

$$Y_{i,t} = \alpha + \beta_1 \times \text{CNOwn}_{i,t} + \text{Control} + \alpha^{FE} + \text{e}_{i,t}.$$

The dependent variable $Y_{i,t}$ captures a range of firm-level outcomes and is grouped into three categories. The first captures innovation performance, using the logarithm of R&D expenditures ($Log(1 + R\&D)$) and the aggregated number of granted patents for firm i filed from year $t + 1$ to $t + 3$ ($\#GrantPatent_{\cdot}$). [8] The second group measures firm operations and financial outcomes: the logarithm of fixed assets ($Log(1 + Fixed)$), return on assets (*ROA*), and the logarithm of the number of employees ($Log(1 + Empl)$). The third group assesses supply chain integration, using two binary indicators: *CNSupplier*, which equals one if the firm supplies goods or services to a Chinese entity, and *CNCustomer*, which equals one if the firm purchases from or distributes Chinese goods.

Our key explanatory variable, *CNOwn*, is an indicator equal to one if a firm is owned by a Chinese entity, defined either through direct shareholding or ultimate ownership at or above the 10% threshold.

We control for a rich set of firm-level characteristics, including total assets, fixed assets, total debt, sales, employment, operating revenue, ROA, net profit, and cash flow. To account for market concentration, we include the Herfindahl index of industry sales and its squared term. When necessary, we omit highly collinear controls based on the specific outcome variable.

Recent work by Chen and Roth (2024) and Cohn et al. (2022) shows that for outcomes with a large mass at zero, transforming the variable using "one plus the outcome" (e.g., log(1 + y)) can

[8] We omit patents filed after 2020 to mitigate the right-truncation issue.

be problematic. In our setting, *#GrantPatent* has precisely this feature, so we follow Chen and Roth (2024) and estimate these regressions by Poisson pseudo-maximum likelihood (PPML) with fixed effects rather than OLS. This concern is less severe for our other outcomes, which are either not integer-valued or not heavily concentrated at zero. For R&D, the variable is strictly positive but has many missing values, which we code as zero. By including a *Blank_R&D* indicator, following Koh and Reeb (2015), we can also capture treatment effects on the extensive margin, another concern emphasized by Chen and Roth (2024).

Beyond the baseline regression, we extend our analysis by differentiating between SOE and private ownership using the following regression model:

$$Y_{i,t} = \alpha + \beta_1 \times \mathrm{CNOwn}_{i,t} + \beta_2 \times \mathrm{CNOwn} * \mathrm{SOE}_{i,t} + \mathrm{Control} + \alpha^{FE} + \mathrm{e}_{i,t}.$$

Here, the interaction term $CN_Own * SOE_{i,t}$ captures differential effects when the Chinese owner is a state-owned or government-related entity.

3.1. Innovation: R&D and Patents

We first examine innovation input. As discussed, many Chinese acquisitions involve firms with high R&D intensity. A central question is whether Chinese ownership further boosts these firms' innovation efforts and whether such efforts translate into measurable outputs like patents.

R&D expenses are frequently not reported in financial statements, particularly among firms operating in emerging markets. Rather than simply dropping these observations or treating missing values as true zeros, we follow the R&D-disclosure literature in treating non-reporting as systematic. Koh and Reeb (2015) show that missing R&D is pervasive and that assuming "no R&D" for non-reporters can bias inferences; Koh, Reeb, and Zhao (2018) document that managerial traits such as CEO confidence affect whether R&D is disclosed; and Koh et al. (2022) demonstrate that excluding firms with unreported R&D ("deleting unreported innovation") distorts estimates of the relation between R&D and firm outcomes. Guided by this evidence, our baseline sets missing R&D to zero and includes a *Blank_R&D* indicator to flag non-reporting firm-years,

and we treat specifications that drop missing R&D as robustness checks rather than primary estimates.

[Insert Table 4 about here]

Table 4 presents the results. Panel A explores different definitions and conditions of Chinese ownership, both with and without firm-level control variables. Across all specifications, we find that Chinese ownership is associated with a statistically significant increase in target firms' R&D expenditures. In the baseline panel regression (column 1, Ownership-Narrow), the coefficient on the Chinese ownership indicator implies that, on average, acquired firms increase R&D spending by about 6.6% relative to the control group of firms without Chinese investors. This effect is statistically significant at the 5% level. When we require Chinese shareholders to hold controlling stakes (Control-Narrow), the estimated R&D increase is larger (≈8.0%) and remains statistically significant (5% level), as shown in column 5. This amplified economic magnitude indicates that greater ownership stakes grant Chinese shareholders increased influence over decisions related to R&D expenditures.

When we broaden the definition of Chinese ownership to include ultimate investors in Hong Kong and Macau, the magnitude attenuates. For example, the coefficient declines to 0.039 in Column (3) (Ownership-Broad). Even so, the effects are robust across specifications, with coefficients ranging between 0.039 and 0.162 after controlling for comprehensive firm-level characteristics, pointing to economically meaningful increases in R&D expenditures under Chinese investment.

Panel B further distinguishes the impact of overall Chinese ownership from SOEs by introducing *CNOwn* and *CNOwn*SOE* as independent variables. Our analysis reveals that the increase in R&D is particularly pronounced when the acquirer is a Chinese SOE. Under the control of Greater China investors, the coefficient for *CNOwn*SOE* is 0.292, significant at the 5% level.

This implies that Chinese state ownership elevates R&D expenses by approximately 29.2 percentage points compared to private Chinese ownership.

To pinpoint the origins of these effects, we stratify the sample into developed and emerging market economies based on the United Nations classification and restrict our analysis to firms ever owned by a Chinese shareholder, thus capturing the extensive margin of Chinese ownership influence. [9] The results reveal that the positive association between Chinese ownership and R&D investment predominantly occurs in developed countries and primarily for firms under SOE ownership, with insignificant effects noted in emerging markets. This pattern suggests that Chinese SOEs emphasize technology acquisition and innovation within developed economies, where institutional and economic contexts align with their strategic objectives. Conversely, the comparatively weaker effects observed in emerging markets underscore differences in the nature and goals of Chinese investments, contingent upon the local economic and institutional environment.

Additionally, in Appendix Table B1, we address concerns regarding potential biases from managerial discretion in disclosing R&D information before and after the Chinese acquisition. We conduct robustness tests by excluding observations with missing R&D data and repeating the regressions from Table 4. The findings remain consistent, demonstrating that Chinese ownership continues to be positively correlated with increased R&D expenditures, a relationship primarily driven by ownership from Chinese SOEs rather than private Chinese entities.

[Insert Table 5 about here]

Turning to innovation outputs, Table 5 examines the number of granted patents filed over the subsequent three-year window as the dependent variable, using Poisson models. In Panel A, under the narrow version of Chinese ownership, the coefficient on *CNOwn (Ownership)* is 0.041, and

[9] UN's definition: https://www.un.org/en/development/desa/policy/wesp/wesp_current/2014wesp_country_classification.pdf. We manually reclassify Singapore, South Korea, and Taiwan into the developed country list from the emerging market list given their advanced economy and technology. China (Mainland) and Hong Kong SAR are excluded from both lists. Please see Table A4 in the Appendix for details.

that of *CNOwn (Control)* is 0.045, both statistically insignificant. By contrast, under the broad version of Chinese ownership by incorporating investors from Hong Kong and Macau, the relation slightly strengthens: the coefficient on *CNOwn (Ownership)* is 0.063 with a standard error of 0.040, statistically insignificant, and that of *CNOwn (Control)* is 0.083 with a standard error of 0.066, also statistically insignificant.

Panel B further distinguishes ownership by SOEs versus private firms. Here, the coefficients for both *CNOwn* and *CNOwn*SOE* are consistently insignificant or marginally significantly negative. These results suggest that although Chinese SOEs actively stimulate increased R&D spending in target firms, these investments do not necessarily result in a proportional rise in patent filings.

The absence of a significant relationship between Chinese ownership and patent output highlights a disconnect between investment inputs and innovation outcomes under Chinese ownership. In Section 7, we reconcile this disconnect by presenting evidence that patenting may instead increase at the Chinese parent level, particularly for SOEs acquiring developed-country targets.

3.2. Investment Efficiency, Profitability, and Employment

Next, we assess the impact of Chinese shareholders on efficiency, profitability, and employment, beginning with an analysis of ROA as a measure of profitability. Table 6 presents the corresponding regression results, indicating that the coefficient for *CNOwn* is -1.192, statistically significant at the 1% level. This result implies that the introduction of Chinese shareholders is associated with a reduction of 1.192 percentage points in ROA for targeted firms, suggesting a negative impact of Chinese ownership on profitability. For context, the mean and median ROA for firms without Chinese ownership in our sample are 4.0% and 3.5%, respectively, as shown in Table 2. Panel B differentiates between Chinese SOEs and private shareholders,

showing the coefficient for *CNOwn*SOE* is -1.289, significant at the 10% level. This indicates that the decline in profitability is predominantly driven by Chinese SOE ownership rather than private ownership.

[Insert Table 6 about here]

Additionally, Table 6 explores the impact of Chinese ownership on firm size, using total assets as the dependent variable. In Column (2) of Panel A, the coefficient for *CNOwn* is 0.074, statistically significant at the 1% level, reflecting a 7.4% increase in firm size linked to Chinese ownership. Further, Panel B reveals a coefficient of 0.093 for *CNOwn*SOE*, significant at the 10% level, whereas the overall coefficient for *CNOwn* is smaller, at 0.066, significant at the 1% level. These findings align with previous results on R&D, demonstrating that Chinese SOE ownership corresponds to a total firm size increase of 15.9% (6.6% + 9.3%), indicating a more substantial influence on firm growth compared to overall Chinese ownership. This underscores the strategic preference of SOEs to foster larger, more integrated enterprises.

Finally, we investigate the effect of Chinese ownership on employment. Column (3) of Panel A reports a coefficient of -0.020 for *CNOwn*, statistically insignificant, indicating a mild reduction in employment following Chinese acquisition. Panel B incorporates the *CNOwn*SOE* variable, resulting in an insignificant coefficient of 0.041. This outcome indicates that, on average, Chinese investors, whether private or SOEs, do not significantly alter the workforce size.

In summary, our analysis highlights a pattern wherein Chinese ownership in non-China-incorporated firms contributes to inefficiencies characterized by increased investments and firm size without proportional enhancements in critical performance indicators, coupled with a minor decrease in employment. While Chinese shareholders, particularly SOEs, significantly boost R&D investments and firm growth, these increases do not translate effectively into higher patent outputs. This indicates a disconnect between the resources allocated to innovation and the tangible

outcomes realized, suggesting potential inefficiencies in the utilization of R&D investments under Chinese ownership. Furthermore, the notable reduction in profitability, especially pronounced under SOE ownership, highlights operational inefficiencies accompanying firm expansion and heightened R&D spending. These findings emphasize that although Chinese investments promote firm growth, they frequently do so at the expense of operational efficiency, posing challenges for firms to translate increased investment into profitable results.

3.3. Supply Chains

[Insert Table 7 about here]

In this subsection, we examine whether firms that become Chinese-owned (*CNOwn*) are subsequently more likely to integrate into Chinese supply chains. Using the FactSet Revere database, we identify whether a Chinese-owned firm, after acquisition, appears as a supplier to or customer of a Chinese entity or an entity controlled by a Chinese entity.

Panel A of Table 7 (*CNSupplier* as the dependent variable) shows that Chinese ownership is associated with a higher probability that targets become suppliers to Chinese firms, but this pattern is concentrated among private Chinese acquirers. Under the broad control definition, the coefficient on *CNOwn* is 0.054 and significant at the 1% level, implying a 5.4% increase in the probability that a privately owned Chinese acquirer integrates the target into its upstream supply chain. The coefficient on *CNOwn*SOE* is 0.043 and insignificant. Thus, for SOE acquisitions, the net impact on supplier relationships is no greater than the overall effect of Chinese ownership.

Panel B (*CNCustomer* as the dependent variable) shows only modest and statistically weaker increases in downstream linkages. The coefficients on *CNOwn* are 0.043 under narrow ownership (5% significance) and 0.020 under broad control (positive but small and statistically insignificant). The SOE interactions are again insignificant, implying little to no net increase in downstream ties for SOE acquisitions.

Taken together, the evidence points to supply-chain integration on the supplier margin as a phenomenon driven by private Chinese ownership, not by SOEs. This pattern is consistent with private acquirers pursuing commercial vertical synergies similar to those of other multinational buyers, whereas SOE acquisitions reflect different mandates, focused on technology acquisition and strategic assets, rather than embedding targets broadly into Chinese production networks.

3.4. The Depth of Chinese Control

As discussed in Section 1.2, our baseline variable, *CNOwn(Control)*, applies the 10% threshold used by the IMF and OECD to identify an FDI relationship, which is consistent with the prior FDI literature. Under this definition, a firm is Chinese-controlled if a Chinese entity is either its largest direct shareholder with at least 10% equity or its global ultimate owner with at least 10% equity at every tier of the ownership chain. Although this threshold captures significant influence, it combines control positions of substantially different depths of corporate influence. In the corporate governance literature, ownership stakes are typically classified into three distinct categories of corporate influence: ownership stakes at 10% constitute a minority stake with a low depth of control; ownership stakes of 25% indicate a blocking minority with moderate depth of control; and ownership stakes of 50% represent majority control. We therefore construct analogous control indicators at 25% and 50% and use them to partition Chinese-linked firm-years into mutually exclusive categories. Entering all categories in the same regression makes their coefficients directly comparable and permits formal tests of differences across control depths.

Specifically, *CNOwn(NoControl)* identifies firm-years for which *CNOwn(Ownership)*=1 but *CNOwn(Control,10)*=0. These firms have at least one direct Chinese shareholder but do not satisfy either branch of the 10% control definition. *CNOwn(10–25)*, *CNOwn(25–50)*, and *CNOwn(50+)* denote Chinese control in the corresponding stake ranges. The four categories

partition the 29,180 Chinese-linked firm-years exactly, so the omitted category is firms with no Chinese ownership link. All variables use the broad classification of Chinese entities.

[Insert Table 8 about here]

The innovation input result is concentrated at intermediate levels of control. The R&D coefficient is 0.069 in the 10–25% band, rises to 0.203 in the 25–50% band, where it is significant at the 10% level, and falls to 0.032 with a standard error of 0.090 among majority-owned firms. The increase in R&D documented in Section 3.1 therefore appears largest at intermediate levels of Chinese control rather than increasing continuously with control depth.

Innovation output shows a sharper pattern. Local patenting rises under partial control, with coefficients of 0.126 in the 10–25% band and 0.192 in the 25–50% band, both significant at the 10% level, and turns negative under majority control, at −0.105 and significant at the 1% level. This result refines the input–output disconnect documented in Section 3.1. inputs and outputs move together at intermediate stakes, and separate only once Chinese investors hold outright control, which is the configuration in which the parent can claim the resulting output. The parent-side evidence in Section 7 speaks to that possibility directly.

The other outcomes do not change systematically with the depth of Chinese control. ROA falls significantly by 2.87 percentage points in the 25–50% category and by 1.05 percentage points under majority control. Chinese supplier relationships increase by 5.7–6.5 percentage points across all three control categories, while customer relationships change little. Employment declines by approximately 4% only in the 10–25% category. Fixed assets increase under both 25–50% and majority control, but they also increase for *CNOwn(NoControl).* Capital expansion therefore does not appear to depend systematically on governance control and may partly reflect Chinese investors establishing ownership links with firms during periods of expansion.

These estimates should be interpreted with two caveats. First, control depth is not randomly assigned. Although the inclusion of firm fixed effects exploits changes within firms, transitions across categories may coincide with changes in firm prospects. The estimates therefore do not identify the causal effect of moving a firm from one control category to another. Second, Table B3 in the appendix presents a complementary cutoff analysis. At each alternative threshold, the comparison group remains firms with a Chinese ultimate ownership stake below 10%, while observations between 10% and the alternative threshold are excluded. The results confirm the increases in fixed assets and supplier relationships, the decline in profitability, and the absence of higher local patenting as control tightens. The R&D coefficient remains positive at 25% but is less precisely estimated at 50%, consistent with the nonmonotonic pattern in Table 8.

3.5. Propensity-Score Matched Estimates

A remaining concern is that firms selected into Chinese ownership may differ systematically from firms that remain outside Chinese control. To improve comparability, we implement propensity-score matching on the Control–Broad definition of Table 4, comparing each firm that first crosses the 10% broad Chinese-control threshold with up to ten never-Chinese firms drawn from the same host country, treatment year, and profitability bin. We construct the matched control sample using a tiered matching procedure in the spirit of Barber and Lyon (1996). Specifically, we first estimate a single propensity score from a logit of treatment on the full set of year t−1 firm characteristics and year dummies. Each treated firm is then matched, with replacement, to its ten nearest neighbors on this score, exactly within country × year × tercile of its three-year average ROA; treated firms with no control firm in their ROA tercile are matched within country × year, and the treated firms with no eligible control in their country-year cell are retained with a weight of one. This procedure assigns a genuine matched counterfactual to every treated firm rather than discarding unmatched treated firms or retaining them without controls. Because treatment timing

is staggered across cohorts, we then estimate stacked difference-in-differences specifications with firm-by-cohort and cohort-by-year fixed effects, applying the matching weights (Cengiz, Dube, Lindner, and Zipperer, 2019).

[Insert Table 9 about here]

The matched estimates reinforce the paper's central innovation result. Chinese control raises R&D expenditure by 0.148 to 0.189 log points, with standard errors of 0.088 and 0.096, or approximately 16% to 21%. The corresponding unmatched estimates in columns (7) and (8) of Table 4 are 0.045 and 0.093, so matching roughly doubles to triples the estimated effect, indicating that the unmatched comparison group attenuates rather than inflates it. The patent coefficients remain small and statistically insignificant, indicating no corresponding increase in target-firm patenting. Profitability declines by roughly 0.36 to 0.67 percentage points (statistically insignificant), and we find no significant change in fixed assets or employment. Chinese customer relationships increase by 8.1 to 8.7 percentage points, while the supplier effect increases by 6.6 to 8.5 percentage points.

Joint tests of the event-study leads do not reject parallel pre-treatment dynamics for R&D, with p-values of 0.731 and 0.261, or for the remaining outcomes, with the partial exception of ROA (0.088 and 0.052). Thus, after comparing more observationally similar firms, the results continue to show higher innovation input and lower profitability without a corresponding increase in local patent output. Because matching addresses selection only on observed characteristics, we interpret these estimates as supportive conditional comparisons; Section 4 turns to the “Made in China 2025” shock for variation plausibly independent of unobserved target-firm characteristics.

4. Instrumental-Variable Evidence from the "Made in China 2025" Policy Shock

Estimating the causal effect of Chinese control on foreign target firms is empirically challenging because cross-border acquisitions are not randomly assigned. If Chinese investors

systematically target firms that already intend to expand R&D or firms on a downward profitability trajectory, standard estimates will reflect unobserved firm characteristics or pre-existing trends. The propensity-score matching in Section 3.5 addresses selection on observed characteristics. To strengthen the causal interpretation, we combine the matched sample with an instrumental-variable strategy based on the launch of the Made in China 2025 initiative, which provides variation in Chinese control that is plausibly independent of unobserved target-firm characteristics.

Announced by the State Council in 2015, MIC2025 is a state-led industrial policy aimed at accelerating China's ascent in ten strategic high-tech fields. Crucially for our identification strategy, the policy explicitly encouraged outbound acquisitions, particularly by SOEs, as a primary mechanism to internalize advanced foreign technologies. Although China's ambition to modernize its industrial base was widely understood, the public designation of specific priority technologies in 2015 represented a discrete shift in the intensity and sectoral direction of this mandate.

Implementation was not uniform across those fields: some received dedicated capital and directed lending, while others received policy exhortation alone. We therefore assign each sector an ex ante policy-intensity tier from zero to three, based on the policy instruments specified in the MIC2025 documents, rather than treating exposure as a binary indicator. Table A2 reports the sector mapping, intensity tiers, and underlying policy sources.

Our instrument interacts this predetermined sector-level intensity with the 2015–2017 policy window. We estimate the following first- and second-stage equations:

$$\begin{aligned}\mathrm{CNOwn}_{it} = {} & \pi\left(\mathrm{Intensity}_s \times D_{[2015,2017],t}\right) + \lambda_{12}\left(\mathrm{Intensity}_s \times D_{2012,t}\right) \\ & + \lambda_{13}\left(\mathrm{Intensity}_s \times D_{2013,t}\right) + \lambda_{\mathrm{post}}\left(\mathrm{Intensity}_s \times D_{\mathrm{Post2018},t}\right) + X_{it}'\Gamma + FE + u_{it}\end{aligned}$$

$$\begin{aligned}Y_{it} = {} & \beta\widehat{\mathrm{CNOwn}}_{it} + \lambda_{12}^{Y}\left(\mathrm{Intensity}_s \times D_{2012,t}\right) + \lambda_{13}^{Y}\left(\mathrm{Intensity}_s \times D_{2013,t}\right) \\ & + \lambda_{\mathrm{post}}^{Y}\left(\mathrm{Intensity}_s \times D_{\mathrm{Post2018},t}\right) + X_{it}'\Gamma_Y + \alpha_i + \delta_t + \varepsilon_{it}.\end{aligned}$$

Here,$\mathrm{CNOwn_{it}}$ denotes contemporaneous broad Chinese control under the paper's 10% definition, and Y_{it} denotes the target-firm outcome. The indicator $D_{[2015,2017],t}$ identifies the policy window. The 2012 and 2013 interactions capture pre-policy differences, with 2014 serving as the omitted year, while the post-2018 interaction allows sectoral differences to evolve after the main policy window. X_{it} contains the outcome-specific controls used in Section 3. We include firm and year fixed effects. All specifications apply the propensity-score matching weights.

The estimation sample is drawn from the propensity-score-matched data underlying Table 9, and we carry the corresponding matching weights into the IV regressions. We restrict the sample to developed-economy hosts and firms in manufacturing, information and communication, and professional, scientific, and technical activities. Industries within these broad sectors that are not covered by MIC2025 form the comparison group. All specifications include firm and year fixed effects, and standard errors are clustered at the country-year and sector-year levels. For granted patents, we use a Poisson control-function estimator on its outcome-specific complete-case sample rather than linear 2SLS.

The instrument exploits the differential increase in Chinese control after 2015 across sectors receiving different degrees of policy support. The exclusion restriction requires that, conditional on matching, controls, and fixed effects, the 2015–2017 intensity interaction affect foreign-target outcomes through the policy-induced change in Chinese control. Three features support this interpretation. First, sector intensity is assigned ex ante from policy documents rather than constructed from target outcomes. Second, MIC2025's outward-investment component explicitly promoted foreign acquisition as a means of obtaining advanced technology, making Chinese control the policy margin most directly connected to foreign targets. Third, matching improves pre-policy comparability, while the 2012, 2013, and post-2018 interactions absorb intensity-related differences outside the policy window. These design features cannot rule out every direct

sector-level channel, but they make Chinese control the most immediate mechanism linking policy intensity to foreign targets. Under the exclusion restriction and monotonicity, the IV coefficient identifies a local effect among policy-responsive firms, providing evidence independent of the matched difference-in-differences estimates.

4.1. The Policy-Induced Shift in Chinese Control

Table 10 reports the first-stage, reduced-form, and instrumental-variable estimates. Across the outcome-specific samples, a one-tier increase in MIC2025 intensity during 2015–2017 is associated with a 2.6–2.7 percentage-point increase in the probability of broad Chinese control. The reported Kleibergen–Paap first-stage statistics range from 14.8 to 18.1 across the linear specifications. Because the first-stage coefficients are estimated with some uncertainty, we report Anderson–Rubin tests to provide inference robust to weak identification.

[Insert Table 10 about here]

The reduced-form estimates point to a corresponding increase in innovation input. The coefficient on MIC2025 intensity interacted with the policy window is 0.038 in the R&D regression, with a standard error of 0.017. Thus, a one-tier increase in policy intensity is associated with approximately 3.9% higher 1 + R&D during 2015–2017. By contrast, the corresponding reduced-form ROA coefficient is −0.485 and statistically insignificant.

The pre-policy estimates provide a more qualified assessment of parallel trends than the original binary-policy design. Most pre-policy interactions are statistically insignificant, but the 2013 interaction in the R&D reduced form is positive and marginally significant, and some outcome-specific first stages contain marginally significant pre-period coefficients. We therefore do not interpret these estimates as establishing the complete absence of differential pre-policy trends. Rather, identification rests on the combination of the matched comparison group, the

predetermined cross-sector variation in policy intensity, the timing of the 2015 mandate, and the resulting first-stage shift in Chinese control.

4.2. IV Results

The IV estimates reinforce the paper's central innovation-input result. The 2SLS coefficient on Chinese control in the R&D regression is 0.621, with a standard error of 0.335, and is significant at the 10% level under conventional inference. The weak-instrument-robust Anderson–Rubin tests reject a zero effect more strongly, with p-values of 0.015 under the chi-squared formulation and 0.023 under the F-formulation. The point estimate is economically large but imprecise; we therefore place greater weight on its positive sign and the weak-instrument-robust inference than on its exact magnitude.

Chinese control is also associated with an expansion in target scale. The IV coefficients are 0.716 for log(1 + fixed assets) and 0.490 for log(1 + employment), and the Anderson–Rubin tests reject a zero effect for both outcomes. These point estimates are economically large and exceed the corresponding within-firm estimates in Section 3. Because the IV estimates identify a local effect for policy-responsive firms and remain imprecisely estimated, we emphasize their positive signs and weak-instrument-robust inference rather than their exact magnitudes.

The results are less conclusive for innovation output and profitability. The Poisson control-function estimate for granted patents is 0.520 and significant at the 10% level, but it is estimated on a substantially smaller sample and is not accompanied by the weak-instrument-robust diagnostics available for the linear specifications. The estimated effect on ROA is −9.934 percentage points and imprecise under conventional 2SLS. Weak-instrument-robust inference is borderline: the Anderson–Rubin p-values are 0.042 under the chi-squared formulation and 0.057 under the F-formulation. Because the magnitude is also large relative to the sample distribution, we do not draw a quantitative conclusion from the ROA estimate.

The IV estimate for R&D is larger than the matched estimates of 0.138–0.171 reported in Table 9, but the magnitudes are not directly comparable. The matched specifications estimate a conditional average effect among firms entering Chinese control, whereas the IV specification identifies, under the usual assumptions, a local effect for firms whose control status responds to MIC2025 policy intensity (Imbens and Angrist, 1994). The IV analysis also covers a more restricted set of host economies and sectors. Moreover, its standard error of 0.335 yields a confidence interval that includes the matched estimates. We therefore interpret the two designs as providing directionally consistent evidence rather than as showing that the causal effect is necessarily larger.

Taken together, the matched-sample IV estimates support the conclusion that Chinese control increases innovation input and expands target-firm scale, but they are less decisive about local patent output and profitability. Sections 6 and 7 examine where the returns to these inputs accrue through local peer responses and the subsequent patenting of Chinese parents.

5. Is China Unique?

One important question in studying China's global investment is to understand whether China's investment patterns and impacts differ systematically from those of other major global economies. To assess this, we compare China with the United States, Japan, and India because they provide natural benchmarks for outward investment by major advanced and emerging economies. The United States serves as the leading market-based benchmark, Japan as a historical comparator for strategic overseas expansion, and India as a relevant emerging-market benchmark. Recent work also shows that the global operations of U.S. multinationals are central to understanding U.S. trade imbalances, reinforcing the idea that firm-level multinational organization is a key benchmark for interpreting cross-border economic linkages (Alfaro and Alviarez, 2025).

[Insert Table 11 about here]

Table 11 replicates our baseline regression analyses, replacing Chinese ownership measures with those for the U.S., Japan, and India. The results reveal both commonalities and important differences across investor countries. For reference, Chinese ownership significantly boosts R&D expenditures but fails to convert these investments into higher patent outputs, indicating inefficiencies in innovation. Moreover, Chinese ownership, particularly by SOEs, leads to lower profitability, as evidenced in reduced return on assets. These findings suggest that Chinese investors, especially SOEs, prioritize objectives such as long-term control, technological advancement, or market penetration, often at the expense of short-term operational efficiency and profitability.

U.S. ownership, by contrast, tends to expand firm size through increased fixed asset investment while having limited effects on R&D and patent output and no systematic adverse impact on profitability. U.S. investors thus appear closer to a commercial, market-driven benchmark: they increase scale and capital intensity, but do not exhibit the same willingness as Chinese SOEs to trade off profitability for investment and innovation-related objectives.

Japan's outbound investment exhibits patterns that are qualitatively similar to China's in some dimensions, but generally less pronounced. Japanese controlling ownership is associated with higher R&D spending and some deterioration in profitability, without clear gains in patent productivity. This suggests that Japanese investors also emphasize technology and asset growth over short-run returns, but the magnitudes are smaller and the patterns are not driven by state ownership or industrial-policy shocks of the kind we document for China.

Indian investors, however, display a more conservative stance. We find no systematic increase in R&D or patent output and insignificant effects on profitability. This cautious investment strategy primarily seeks market presence and expansion rather than aggressive technological upgrading or asset accumulation.

Overall, these comparisons indicate that China is not unique in every dimension: Japan shares a similar trade-off between investment and profitability, albeit in a milder form. What distinguishes China is the scale and intensity of this pattern and its state-led nature. SOE-led Chinese investments show larger increases in R&D and capital stock, sharper declines in profitability, and distinctive supply-chain effects. Relative to the more commercially oriented U.S. benchmark and the more cautious Indian pattern, China's outward investment strategy stands out for relying heavily on state investors and accepting substantial short-run performance costs in pursuit of technology and asset-based growth.

6. Spillovers to Firms Not Yet Under Chinese Ownership

Chinese ownership may affect firms beyond the acquired target through product-market competition, the reallocation of capital and skilled labor, and changes in supply-chain relationships. We therefore examine whether a larger share of country–industry assets under Chinese control is associated with the outcomes of firms not yet under Chinese ownership. We construct a dynamic peer sample in which a firm is included in every year before it first crosses the 10% Chinese-control threshold and exits the sample upon crossing that threshold. Firms that never become Chinese-controlled remain in the sample throughout. This approach avoids using future ownership status to classify firms before an acquisition occurs.

For each firm-year we construct a leave-one-out measure of Chinese-controlled asset share: the share of assets in the firm's country–industry–year that is under Chinese control, excluding the focal firm's own assets from both the denominator and, when applicable, the numerator. We regress firm outcomes on this share, absorbing firm, country-by-year, and sector-by-year fixed effects, so that identification comes from within-firm changes in exposure to Chinese control arising from differential changes across country–industry cells, net of country-year and sector-year shocks. Standard errors are clustered at the country-by-sector level. For firm i in country c, industry s, and year t, the baseline specification is:

$$Log(1 + R\&D)_{i,c,s,t} = \alpha + \beta_1 \times \Sigma\text{CN_Owned_Assets}/\Sigma Assets_{c,s,t} + \text{Blank_R\&D}_{i,t} + Control_{i,t} + \alpha^{FE} + \varepsilon_{i,c,s,t}. \quad (6)$$

We estimate the same specification for patenting, profitability, size, employment, and supply-chain linkages.

[Insert Table 12 about here]

Panel A of Table 12 presents the results for the baseline 10% definition of Chinese control. The coefficient on *%CNOwn*Assets* in the R&D regression is −0.280, with a standard error of 0.136. Thus, a 10-percentage-point increase in the share of industry assets under Chinese control is associated with approximately 2.8% lower R&D expenditure among firms not yet under Chinese ownership. This is a sizable change relative to the sample mean Chinese asset share of approximately 2%. The estimated associations with patenting, profitability, fixed assets, and employment are small and statistically insignificant.

Panel B decomposes the share into two mutually exclusive bands. The coefficient on stakes between 10% and 25% is −0.245, with a standard error of 0.362, while the coefficient on stakes of 25% or more is −0.732, with a standard error of 0.251, significant at the 1% level. Although the latter estimate is larger in magnitude, the difference between the two coefficients is not statistically significant (the Wald test's *p*-value is 0.217). The results, therefore, suggest, but do not establish, a stronger peer response when Chinese owners hold stakes associated with greater influence. Peer patenting falls at the higher band as well: the Poisson coefficient of −0.799 implies about 7.7% fewer granted patents per 10-percentage-point increase, close to the 7.1% R&D decline (although statistically insignificant). Coefficients on the non-innovation outcomes are unstable across bands and insignificant in almost all estimates.

[Insert Table 13 about here]

Table 13 adds Chinese-controlled targets to the estimation sample. In the pooled sample, the R&D coefficient under the baseline definition attenuates to −0.153 and is insignificant, while in Panel B the coefficient on stakes of 25% or more remains −0.587 and significant at the 1% level. Because the dependent variable remains a firm-level outcome and firms are not weighted by size,

these estimates should not be interpreted as changes in aggregate industry R&D. They show that the negative association between the Chinese-controlled asset share and firm-level R&D remains visible when targets and peer firms are pooled.

To compare target and peer responses directly, Table 14 estimates

$$Y_{i,c,s,t} = \alpha + \beta_1 \times \%\text{CNOwn*Assets}_{c,s,t} + \beta_2 \times \text{CNOwn}_{i,t} + \beta_3 \times (\%\text{CNOwn*Assets}_{c,s,t} \times \text{CNOwn}_{i,t}) + Control_{i,t} + \alpha^{FE} + \varepsilon_{i,c,s,t}.$$

Here, β_1 is the association between Chinese-controlled asset shares and peer-firm outcomes, β_3 is the difference between target and peer slopes, and (β_1+β_3) is the corresponding slope for Chinese-controlled targets.

[Insert Table 14 about here]

For R&D, the estimated peer slope is −0.211, with a standard error of 0.117, while the target–peer differential is +0.738, with a standard error of 0.357. The implied target slope is therefore +0.527 with a *p*-value of 0.14 in the Wald test (indistinguishable from zero at the 10% level). Targets therefore raise R&D by roughly 5.3% per 10-percentage-point rise in the industry Chinese asset share, while peers cut it by about 2.1%.[10] The same divergence appears on other margins: interactions are positive and significant for granted patents (0.873), fixed assets (0.360), and employment (0.194), with implied target slopes of 0.870, 0.276, and 0.183. Peers and targets therefore move in opposite directions as the ownership share rises, which is the pattern a within-industry reallocation predicts and not what a common industry shock would produce, since such a shock would move both groups together.

Identification warrants comment, since the Chinese ownership share is not randomly assigned.[11] The direction of the resulting bias is not obvious. If Chinese investors enter country–

[10] The coefficient on *CNOwn* itself is negative, at −0.073 for R&D and −0.108 for patents; it measures the target effect evaluated at a zero industry ownership share, in a specification that absorbs country-by-year and sector-by-year variation, and is therefore not the parameter estimated in Table 4.

[11] A shift-share instrument for the Chinese ownership share, interacting each country's pre-period sectoral asset exposure with China's national outbound investment by sector, is not well suited to this specification. Sector-by-year fixed effects absorb the national outbound component, so the identifying variation would come almost entirely from pre-period industrial structure. Share exogeneity is then the operative assumption (Goldsmith-Pinkham, Sorkin, and Swift, 2020), and it is difficult to defend in this setting, since a country's 2010 sectoral specialization predicts its subsequent R&D trajectory for reasons unrelated to Chinese investment.

industries where technology is most valuable, the peer coefficient is biased toward zero or above and the estimates understate crowding out; if they instead enter industries that are contracting or in which assets are cheap, the bias runs the other way and the estimates overstate it. We cannot sign the net effect. The absence of any association with peer profitability, investment, and employment weakens an explanation based on general industry contraction, although it does not rule out shocks specific to innovation. The interaction in Table 14 is the parameter least exposed to these concerns, because it compares targets with peers facing the same ownership share and therefore speaks to the differential response of the two groups rather than to the industries into which Chinese capital flows; a confounding shock would have to affect targets and peers differently. We accordingly read the peer level effect as a conditional association and rest the reallocation interpretation on the interaction.

Overall, the results indicate that greater Chinese control within a country–industry is associated with lower R&D and patenting among firms not yet under Chinese ownership, alongside comparatively stronger outcomes among Chinese-controlled targets. This pattern complements the target-level results in Section 3 and is consistent with a reallocation of innovative activity within affected industries.

7. Innovation Spillbacks to Chinese Ultimate Owners

Higher R&D expenditure without a corresponding increase in patenting at target firms raises the question of where the innovative output associated with these acquisitions is recorded. We examine two margins at the Chinese parent: whether acquiring a foreign subsidiary raises the parent's own patenting, and whether the parent's subsequent patents build on the technology of the firm it bought.

Accounting data are poorly suited to this exercise because R&D expenditure for Chinese firms in Orbis is frequently reported on a consolidated basis. A post-acquisition increase could therefore mechanically incorporate the target’s pre-existing expenditure. We instead use applicant-level patent flows. Throughout this section, all patent counts and citations are restricted to invention

patents; utility models and design patents are excluded. This restriction provides a quality-oriented robustness check and ensures that the results are not driven by utility-model filings.

For each Chinese technologi and year, *#GrantedPatents* counts invention-patent families first applied for in that year under the parent's name and subsequently granted in the following three years. Families with multiple applicants are weighted by the inverse number of co-applicants, and the measure is constructed for the parent as a legal entity rather than for the consolidated corporate group. Acquiring a foreign firm therefore does not add the target's historical patent portfolio to the parent's application count. Likewise, a later assignment of an existing patent does not generate a new application in the acquisition year. The measure captures new applications filed by the Chinese parent, although applicant data alone do not identify where the underlying knowledge was developed.

Columns (1) through (4) of Table 15 compare Chinese acquirers with Chinese patenting firms that never acquire a foreign subsidiary and whose pre-2015 invention-patent stock falls in the acquirers' range. The dependent variable counts invention-patent families first applied for during the subsequent three years and eventually granted. We estimate the specifications by PPML models with firm and year fixed effects. *ForeignSub* equals one once the parent holds at least one foreign subsidiary. The estimation sample ends in 2017 so that the three-year outcome window closes by 2020, the last application year for which patent grants are sufficiently complete.

[Insert Table 15 and Figure 6 about here]

The estimated effect on the parent's own patenting is positive but modest. In column (1) the coefficient on *ForeignSub* is 0.074, with a standard error of 0.046, implying about 7.7% more granted families but falling short of conventional significance. Column (2) separates state-owned from private acquirers: the effect is 0.085 for SOE parents, significant at the 10% level, and 0.063 for private parents, and the two cannot be statistically distinguished (p-value = 0.734). Columns (3) and (4) split acquirers by whether their first foreign subsidiary is located in a developed or a non-developed economy. The point estimates are similar in the two groups and less precise for non-developed-country acquisitions, so these data do not establish that the parent-side response is

confined to developed-market acquisitions. Taken on its own, the patent-count evidence is suggestive rather than decisive.

Figure 6 plots the raw event-time profile of parent patenting around the first foreign acquisition. In Panel A, parents whose first target is in a developed economy show a flat profile before the event and then a rise from about 21 granted families in the year before the acquisition to 64 in the acquisition year, while parents entering non-developed economies change little. The same contrast appears among SOE and private parents. SOEs acquiring in developed economies increase from approximately 15 to 83 families, while private parents increase from approximately 23 to 59, as shown in Panels B and C. These raw changes are substantially larger than the regression estimates because they compare each parent with its own preceding year rather than with contemporaneous never-acquirers. We therefore use the figure to describe timing and the regression to assess magnitude. The absence of an obvious pre-acquisition increase in the raw profile reduces, but does not eliminate, concern that the results reflect parents already experiencing rapid patent growth.

Column (5) tests the mechanism directly, asking whether the parent's post-acquisition patents are technologically connected to the acquired target. We construct a firm-pair citation panel in which the unit of observation is a parent *i*, a candidate foreign firm *j*, and a year *t*, and in which *#Citations* counts the granted families that parent *i* first applied for in year *t* and that cite at least one patent belonging to firm *j*. The candidate set comprises every foreign firm acquired by a Chinese parent in our sample, so a parent's citations to targets acquired by other Chinese firms thus provide the comparison for its citations to its own target. *OwnLink* equals one in years in which parent *i* owns firm *j*.

We estimate the citation specification by PPML with parent-by-year and target-by-year fixed effects, clustering standard errors two-way by parent and target. Parent-by-year fixed effects absorb the parent’s annual patent volume, general propensity to cite, and the citation coverage of the patent offices in which it files. Target-by-year fixed effects absorb annual variation in the visibility and citability of each candidate target’s portfolio. Identification therefore comes from

whether, within the same year, a parent cites the target it owns more frequently than other candidate targets, conditional on each target's overall citation rate.

The coefficient on *OwnLink* is 3.436, with a standard error of 0.788. Because PPML models the conditional mean multiplicatively, this coefficient implies an expected citation-count ratio of $e^{3.436} = 31$. Within the same parent-year, the parent produces approximately 31 times as many invention-patent families citing a firm it owns as families citing another candidate target. The large ratio partly reflects the low baseline frequency of citations between unaffiliated parent–target pairs. Nevertheless, the estimate provides strong evidence that the parent's subsequent invention patenting become more closely connected to the technological portfolio of the foreign firm it controls.

This result does not simply reflect the reassignment of the target's existing patents. The citing patents are new invention-patent applications filed under the Chinese parent's name, rather than historical target patents subsequently transferred to the parent. Applicant data do not, however, establish that ownership causes knowledge to move between the firms. Chinese parents may acquire targets whose technologies they already follow, and citations may reflect prior-art disclosure or examination practices as well as direct use of the target's knowledge. The citation estimate therefore identifies a strong technological connection associated with ownership, while leaving the precise transmission mechanism open.

Taken together, the results refine the interpretation of innovation spillbacks. Foreign acquisitions are followed by only a modest and imprecisely estimated increase in the parent's overall invention-patent volume. The sharper result is compositional: the parent's subsequent invention patents are substantially more likely to cite the patent portfolio of a firm it owns. Taken together with the results reported in Section 3.4, where target patenting declines as Chinese control tightens, and Section 6, where targets and peer firms respond differently as the local Chinese-controlled asset share increases, the evidence is consistent with acquired technology becoming more closely integrated into inventive activity recorded at the Chinese parent.

8. Conclusion

This paper provides the first systematic, firm-level analysis of the global network of Chinese corporate ownership. By reconstructing multi-layered ownership chains and tracing capital through offshore financial centers, we reveal a global footprint that is substantially larger and more strategically concentrated than indicated by official FDI statistics. Our findings demonstrate that Chinese global ownership—particularly when driven by state-owned enterprises—represents a distinct paradigm of international investment that prioritizes long-term technological internalization over short-term firm-level profitability.

Our empirical results document a striking "innovation disconnect": while Chinese-acquired firms see significant increases in R&D investment and capital expenditure, these inputs fail to generate local innovative outputs or improved financial performance. Instead, we provide evidence of innovation "spillbacks," where the primary beneficiaries of these investments are the parent firms in China. This redistribution of innovative effort, coupled with the crowding out of R&D at host-country peer firms, suggests that state-led capital can fundamentally reallocate the geography of intangible assets within an industry.

These findings have significant implications for the ongoing debate over geoeconomic influence and the future of the global innovation equilibrium. Our evidence suggests that when state-led capital crosses international borders, it does not merely seek market access or tax optimization; it acts as an instrument of national industrial policy. This "visible hand" of state capitalism introduces a novel mechanism through which national strategic objectives exert extraterritorial effects, potentially creating a long-term productivity drag in host economies while consolidating technological capabilities at home.

By providing a rigorous empirical foundation for these dynamics, our work highlights the necessity for researchers and policymakers to look beyond aggregate capital flows. Understanding the modern global economy requires mapping the underlying architecture of ownership and control, where the identity and mandates of the ultimate owner are the primary determinants of firm behavior and market outcomes.

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Table 1. China's Global Ownership

Notes: This table presents descriptive statistics on China's global ownership. The data includes non-financial, non-Chinese "Very Large" firms from Orbis (2012-2021). Firms based in mainland China, Hong Kong, Macau, or with "golden shares" are excluded. Chinese ownership with control (CNOwn with control) identifies firms whose largest direct shareholders with at least 10% ownership or ultimate shareholders (UO10) are Chinese entities. Assets are winsorized at the 1st and 99th percentiles. Panels A and B rank countries by the percentage and absolute value (USD billions) of assets owned by Chinese shareholders, including mean, standard deviation, minimum, maximum, and growth rates between early (2012-2014) and late (2019-2021) periods, respectively. Panels C and D present the same statistics at the industry level, ranking industries by the percentage and absolute value of assets owned by Chinese shareholders, respectively.

Panel A. Top 5 Countries in terms of % Assets Owned by CN

ISO	Country	Mean	STD	Min	Max
KY	Cayman	46.25%	10.85%	24.50%	57.89%
BM	Bermuda	22.07%	15.55%	2.50%	40.57%
VG	British Virgin Islands	16.76%	7.56%	7.61%	35.45%
PT	Portugal	13.78%	5.91%	0.06%	17.85%
SG	Singapore	10.02%	1.65%	7.36%	12.31%

Panel B. Top 5 Countries in terms of Assets Owned by CN ($Bil USD)

ISO	Country	2012-2021	2012-2014	2019-2021	Growth Rate
KY	Cayman	424	121	791	552%
GB	UK	380	301	485	61%
AU	Australia	148	89	126	41%
SG	Singapore	120	60	196	227%
BM	Bermuda	113	13	190	1394%

Panel C. Top 10 Industries in terms of % Assets Owned by CN

NACE	Sector	Mean	STD	Min	Max
P	Education	4.55%	5.09%	0.62%	12.54%
I	Accom and food service	4.46%	3.02%	1.19%	10.70%
B	Mining and quarrying	4.21%	1.56%	1.75%	7.18%
H	Transportation and storage	3.06%	0.64%	2.07%	3.90%
J	Information and communication	2.97%	1.28%	1.19%	4.79%
L	Real estate activities	2.93%	2.00%	0.51%	6.24%
D	Energy & AC Supply	2.89%	0.79%	1.12%	3.63%
M	Prof. Sci. & Tech.	2.85%	0.61%	1.90%	3.65%
A	Agriculture, forestry and fishing	2.78%	0.71%	1.77%	4.27%
F	Construction	2.76%	1.24%	0.93%	4.28%

Panel D. Top 10 Industries in terms of Assets Owned by CN ($Bil USD)

NACE	Sector	2012-2021	2012-2014	2019-2021	Growth Rate
C	Manufacturing	393	153	606	296%
M	Prof. Sci. & Tech.	260	184	351	91%
D	Energy & AC Supply	195	120	251	109%
B	Mining and quarrying	184	128	180	41%
J	Information and communication	172	72	290	300%
G	Trade & Vehicle Repair	168	64	258	305%
H	Transportation and storage	138	97	185	91%
L	Real estate activities	136	28	278	902%
N	Accom and food service	104	29	182	538%
F	Construction	83	32	126	298%

Table 2. Summary Statistics of Variables

Notes: This table presents descriptive statistics on key variables used in the analysis, covering mean, median, standard deviation, 25th percentile (Q1), and 75th percentile (Q3) distributions. The data includes non-financial, non-Chinese "Very Large" firms from Orbis (2012-2021). Firms based in mainland China, Hong Kong, Macau, or with "golden shares" are excluded. CNOwn identifies firms whose direct or ultimate shareholders (UO10) are Chinese entities; CNOwn*SOE identifies direct or ultimate ownership by Chinese government entities (UO25). With control, Chinese entities must be the largest direct shareholders with at least 10% ownership or ultimate shareholders. The narrow definition includes entities in mainland China, while the broad definition includes entities in mainland China, Hong Kong, Macau, or with "golden shares." Panels A and B report statistics for the entire sample, while Panel C focuses on firms with and without Chinese ownership (with control and broad definition). Panel D presents country-sector-level characteristics, with sectors defined by OECD-ISIC classifications. Variables are detailed in Table A1 of the Appendix.

Panel A. Orbis Ownership

Variables	N	Mean	Median	STD	P25	P75
CNOwn, Control, Broad	1,166,282	2.0%	0.0%	14.0%	0.0%	0.0%
CNOwn, Control, Narrow	1,166,282	1.1%	0.0%	10.3%	0.0%	0.0%
CNOwn, Ownership, Broad	1,166,282	2.5%	0.0%	15.6%	0.0%	0.0%
CNOwn, Ownership, Narrow	1,166,282	1.3%	0.0%	11.1%	0.0%	0.0%

Panel B. Orbis Fundamentals & Orbis Patents

Variables	N	Mean	Median	STD	P25	P75
Log(1+R&D), R&D=0 if Missing	1,166,282	1.0	0.0	3.8	0.0	0.0
Blank_R&D	1,166,282	0.8	1.0	0.4	1.0	1.0
#GrantedPatents	665,638	7.0	0.0	145.3	0.0	0.0
Log(1+Assets)	1,166,282	18.4	18.6	2.2	17.4	19.7
Log(1+Fixed)	1,165,446	16.7	17.4	4.0	15.6	19.1
Log(1+Debts)	1,139,674	16.1	17.0	4.3	15.2	18.4
ROA Using P/L before tax (%)	1,089,540	3.9	3.5	15.7	0.0	9.2
Log(1+Empl)	779,321	5.2	5.5	2.1	4.0	6.7
Log(1+OpeRev)	1,060,866	17.5	18.5	3.9	16.8	19.4
Log(1+Sales)	812,219	17.3	18.5	4.4	16.7	19.4
CashFlow/Assets	801,811	0.0	0.1	0.2	0.0	0.1
P/L/Assets	1,102,272	0.0	0.0	0.3	0.0	0.1
HHI	1,166,282	0.2	0.1	3.7	0.0	0.2
CNCustomer	147,875	8.7%	0.0%	28.2%	0.0%	0.0%
CNSupplier	147,875	9.1%	0.0%	28.8%	0.0%	0.0%
Customer	1,166,282	8.9%	0.0%	28.5%	0.0%	0.0%
Supplier	1,166,282	8.5%	0.0%	27.9%	0.0%	0.0%

Panel C. CNOwn = 1 vs. CNOwn = 0

	CNOwn=1			CNOwn=0		
	Mean	Median	Std	Mean	Median	Std
Log(1+R&D), =0 if Missing	1.9	0.0	5.1	1.0	0.0	3.8
Blank_R&D	0.7	1.0	0.5	0.8	1.0	0.4
#GrantedPatents	5.7	0.0	84.0	7.1	0.0	146.2
Log(1+Assets)	18.7	18.8	2.2	18.4	18.6	2.2
Log(1+Fixed)	16.7	17.6	4.4	16.7	17.4	4.0
Log(1+Debts)	15.6	17.1	5.4	16.1	17.0	4.2
ROA Using P/L before tax (%)	0.2	2.3	18.8	4.0	3.5	15.6
Log(1+Empl)	5.5	5.6	2.1	5.2	5.5	2.1
Log(1+OpeRev)	17.5	18.6	4.3	17.5	18.5	3.9
Log(1+Sales)	17.8	18.6	3.9	17.2	18.5	4.4
CashFlow/Assets	0.0	0.0	0.3	0.0	0.1	0.2
P/L/Assets	-0.1	0.0	0.4	0.0	0.0	0.3
HHI	0.3	0.1	0.3	0.2	0.1	3.8
CNCustomer	21.9%	0.0%	41.3%	8.0%	0.0%	27.1%

CNSupplier	19.8%	0.0%	39.8%	8.5%	0.0%	27.9%
Customer	18.7%	0.0%	39.0%	8.6%	0.0%	28.1%
Supplier	16.9%	0.0%	37.5%	8.3%	0.0%	27.6%

Panel D: Country-(OECD-ISIC)Sector Characteristics, Full Sample

Variables	N	Mean	Median	STD	P25	P75
ln(1+ΣCNOwn*Assets), Control, Broad	31,035	3.7	0.0	7.8	0.0	0.0
ln(1+ΣCNOwn*Assets), Control, Narrow	31,035	2.5	0.0	6.7	0.0	0.0
ln(1+ΣCNOwn*Assets), Ownership, Broad	31,035	4.4	0.0	8.3	0.0	0.0
ln(1+ΣCNOwn*Assets), Ownership, Narrow	31,035	2.9	0.0	7.0	0.0	0.0
ln(1+ΣCNOwn*Pvt*Assets), Control, Broad	31,035	3.5	0.0	7.6	0.0	0.0
ln(1+ΣCNOwn*Pvt*Assets), Control, Narrow	31,035	2.2	0.0	6.3	0.0	0.0
ln(1+ΣCNOwn*Pvt*Assets), Ownership, Broad	31,035	4.2	0.0	8.2	0.0	0.0
ln(1+ΣCNOwn*Pvt*Assets), Ownership, Narrow	31,035	2.6	0.0	6.7	0.0	0.0
ln(1+ΣCNOwn*SOE*Assets), Control, Broad	31,035	0.8	0.0	3.9	0.0	0.0
ln(1+ΣCNOwn*SOE*Assets), Control, Narrow	31,035	0.8	0.0	3.9	0.0	0.0
ln(1+ΣCNOwn*SOE*Assets), Ownership, Broad	31,035	0.8	0.0	3.9	0.0	0.0
ln(1+ΣCNOwn*SOE*Assets), Ownership, Narrow	31,035	0.8	0.0	3.9	0.0	0.0
Log(1+∑Assets)	31,035	21.2	21.4	2.8	19.5	23.3
Log(1+∑Fixed)	31,035	20.5	20.8	3.3	18.8	22.8
Log(1+∑Debts)	31,035	19.3	20.0	4.4	17.8	22.0
HHI	31,035	0.5	0.4	0.4	0.1	0.9
Log(1+∑R&D)	31,035	3.0	0.0	6.5	0.0	0.0
Log(1+∑Sales)	31,035	18.5	20.3	6.6	17.9	22.3
Log(1+OpeRev)	31,035	20.2	20.8	4.1	18.8	22.7
Log(1+∑EMPL)	31,035	6.3	7.5	4.1	1.8	9.5
II_CN/II	21,359	2.5%	1.5%	3.0%	0.8%	3.0%
IO_CN/IO	21,359	2.1%	0.5%	4.6%	0.1%	2.0%
Nature_Resources_Rent_Country	30,164	3.7	1.0	7.3	0.2	3.5
Agriculture, hunting, forestry (indicator)	31,035	2.7%	0.0%	16.2%	0.0%	0.0%
Mining&quarrying - energy (indicator)	31,035	2.1%	0.0%	14.2%	0.0%	0.0%
Mining&quarrying - non-energy (indicator)	31,035	2.4%	0.0%	15.2%	0.0%	0.0%
Mining support service activities (indicator)	31,035	2.2%	0.0%	14.5%	0.0%	0.0%
Blank_R&D	31,035	0.5	1.0	0.5	0.0	1.0

Table 3. Targets of China's Global Ownership

Notes: This table presents OLS regression results analyzing the determinants of China's global ownership. The data includes non-financial, non-Chinese "Very Large" firms from Orbis. Firms based in mainland China, Hong Kong, Macau, or with "golden shares" are excluded. The analysis is restricted to firms in sectors with available OECD input-output data and World Bank data on natural resource rents. CNOwn identifies firms whose direct or ultimate shareholders (UO10) are Chinese entities (mainland China, Hong Kong, Macau, or with "golden shares"); CNOwn*SOE identifies direct or ultimate ownership by Chinese government entities (UO25); CNOwn*Pvt denotes private Chinese ownership, indicating non-SOE Chinese ownership. "CNOwn*Assets," "CNOwn*SOE*Assets," and "CNOwn*Pvt*Assets" represent firm assets weighted by ownership categories: all Chinese entities, state-owned enterprises, and private firms, respectively. Assets are winsorized at the 1st and 99th percentiles and log-transformed after aggregation at the country-sector level. Control variables are detailed in Table A1 of the Appendix. The sample covers the period from 2012 to 2021. Standard errors clustered at the country-sector level are in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

	Ownership (Broad)					
	(1)	(2)	(3)	(4)	(5)	(6)
	Log(1+ΣCNOwn*Assets)		Log(1+ΣCNOwn*Pvt*Assets)		Log(1+ΣCNOwn*SOE*Assets)	
Log(1+∑R&D), RD = 0 if Missing	0.126***	0.088***	0.130***	0.094***	0.029**	0.023*
	(0.023)	(0.022)	(0.023)	(0.022)	(0.014)	(0.014)
Log(1+∑Assets)	1.294***	1.058***	1.228***	1.013***	0.471***	0.339***
	(0.099)	(0.092)	(0.096)	(0.090)	(0.054)	(0.049)
Log(1+∑Fixed)	-0.250***	-0.163***	-0.238***	-0.156***	-0.119***	-0.068***
	(0.056)	(0.050)	(0.053)	(0.048)	(0.027)	(0.022)
Log(1+∑Debts)	0.048	0.023	0.037	0.016	0.017*	-0.001
	(0.034)	(0.034)	(0.034)	(0.033)	(0.010)	(0.011)
Log(1+∑Empl)	0.156***	0.094***	0.157***	0.091***	0.012	-0.005
	(0.033)	(0.034)	(0.033)	(0.033)	(0.016)	(0.016)
II_CN/II	15.078***	5.220	15.858***	5.455	-3.294**	-2.616
	(4.138)	(5.643)	(4.109)	(5.626)	(1.522)	(2.122)
IO_CN/IO	10.451***	10.673***	9.405***	10.129***	6.242***	6.435**
	(2.625)	(2.890)	(2.590)	(2.814)	(2.158)	(2.622)
Nature_Resources_Rent_Country	0.147***	0.145***	0.134***	0.131***	0.048***	0.047***
	(0.022)	(0.021)	(0.021)	(0.020)	(0.012)	(0.011)
Agriculture, hunting, forestry (indicator)	-0.252		-0.564		0.434	
	(0.555)		(0.542)		(0.265)	
Mining&quarrying - energy (indicator)	0.903		0.320		1.184*	
	(0.827)		(0.766)		(0.642)	
Mining&quarrying - non-energy (indicator)	-0.083		-0.045		0.064	
	(0.816)		(0.795)		(0.473)	
Mining support service activities (indicator)	0.293		-0.004		0.512	
	(0.746)		(0.724)		(0.442)	
HHI	-12.690***	-10.754***	-11.954***	-10.153***	-2.886***	-1.819***
	(1.214)	(1.150)	(1.191)	(1.123)	(0.707)	(0.691)
HHI*HHI	11.424***	10.021***	10.804***	9.512***	2.955***	2.088***
	(1.051)	(0.993)	(1.032)	(0.972)	(0.604)	(0.576)
Blank_R&D	-1.083***	-0.722***	-1.153***	-0.759***	-0.090	-0.040
	(0.292)	(0.275)	(0.283)	(0.265)	(0.160)	(0.157)
Constant	-19.290***	-15.207***	-18.151***	-14.514***	-7.325***	-5.204***
	(1.398)	(1.396)	(1.366)	(1.361)	(0.830)	(0.814)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	No	Yes	No	Yes	No	Yes
Observations	21,016	21,016	21,016	21,016	21,016	21,016
R-squared	0.394	0.427	0.385	0.419	0.150	0.180

Table 4. Chinese Ownership and Innovation

Note: This table presents OLS regression analyses examining the relationship between Chinese ownership and firm-level innovation, measured by the logarithm of R&D expenditures. Missing R&D expenditures are treated as zero and indicated by Blank_R&D. CNOwn identifies firms whose direct or ultimate shareholders (UO10) are Chinese entities; CNOwn*SOE identifies direct or ultimate ownership by Chinese government entities (UO25). With control, Chinese entities must be the largest direct shareholders with at least 10% ownership or ultimate shareholders. The narrow definition includes entities in mainland China, while the broad definition includes entities in mainland China, Hong Kong, Macau, or with "golden shares." Control variables are detailed in Table A1 of the Appendix. The sample covers the period from 2012 to 2021. Standard errors clustered at the firm level are in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: Overall

	Ownership				Control			
	Narrow		Broad		Narrow		Broad	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Log(1+R&D)							
CNOwn	0.066**	0.102*	0.039*	0.070*	0.078**	0.162***	0.045*	0.093*
	(0.030)	(0.054)	(0.021)	(0.040)	(0.032)	(0.060)	(0.024)	(0.050)
Log(1+Assets)		0.073***		0.073***		0.073***		0.073***
		(0.010)		(0.010)		(0.010)		(0.010)
Log(1+Fixed)		0.006		0.006		0.006		0.006
		(0.004)		(0.004)		(0.004)		(0.004)
Log(1+Debts)		0.001		0.001		0.001		0.001
		(0.002)		(0.002)		(0.002)		(0.002)
Log(1+Sales)		-0.000		-0.000		-0.000		-0.000
		(0.002)		(0.002)		(0.002)		(0.002)
Log(1+Empl)		0.060***		0.060***		0.060***		0.060***
		(0.009)		(0.009)		(0.009)		(0.009)
Log(1+OpeRev)		0.035***		0.035***		0.035***		0.035***
		(0.005)		(0.005)		(0.005)		(0.005)
ROA		-0.002***		-0.002***		-0.002***		-0.002***
		(0.000)		(0.000)		(0.000)		(0.000)
P/L/Assets		-0.008		-0.008		-0.008		-0.007
		(0.105)		(0.105)		(0.105)		(0.105)
CashFlow/Assets		-0.085		-0.084		-0.084		-0.085
		(0.096)		(0.096)		(0.096)		(0.096)
HHI		-0.152		-0.152		-0.151		-0.151
		(0.124)		(0.124)		(0.124)		(0.124)
HHI*HHI		0.051		0.050		0.052		0.050
		(0.146)		(0.146)		(0.146)		(0.146)
Blank_R&D	-6.393***	-7.937***	-6.393***	-7.937***	-6.393***	-7.937***	-6.393***	-7.937***
	(0.070)	(0.125)	(0.070)	(0.125)	(0.070)	(0.125)	(0.070)	(0.125)
Constant	6.324***	5.627***	6.323***	5.625***	6.323***	5.626***	6.323***	5.625***
	(0.058)	(0.182)	(0.058)	(0.182)	(0.058)	(0.182)	(0.058)	(0.182)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,156,441	437,845	1,156,441	437,845	1,156,441	437,845	1,156,441	437,845
R-squared	0.931	0.968	0.931	0.968	0.931	0.968	0.931	0.968

Panel B: SOE versus Private

	Ownership (Broad)			Control (Broad)		
	All	Developed	Emerging	All	Developed	Emerging
	(1)	(2)	(3)	(4)	(5)	(6)
			Log(1+R&D)			
CNOwn	0.051	-0.056	0.099	0.070	-0.093**	0.245
	(0.041)	(0.040)	(0.107)	(0.052)	(0.040)	(0.183)
CNOwn*SOE	0.306**	0.177*	0.095	0.292**	0.203**	0.002
	(0.139)	(0.095)	(0.102)	(0.141)	(0.095)	(0.148)
Log(1+Assets)	0.073***	0.067***	0.173**	0.073***	0.067***	0.173**
	(0.010)	(0.010)	(0.068)	(0.010)	(0.010)	(0.068)
Log(1+Fixed)	0.006	0.006	-0.041	0.006	0.006	-0.041
	(0.004)	(0.004)	(0.032)	(0.004)	(0.004)	(0.032)
Log(1+Debts)	0.001	-0.000	0.002	0.001	-0.000	0.002
	(0.002)	(0.002)	(0.018)	(0.002)	(0.002)	(0.018)
Log(1+Sales)	-0.000	0.001	-0.010	-0.000	0.001	-0.010
	(0.002)	(0.002)	(0.007)	(0.002)	(0.002)	(0.007)
Log(1+Empl)	0.060***	0.050***	0.151***	0.060***	0.050***	0.151***
	(0.009)	(0.009)	(0.047)	(0.009)	(0.009)	(0.047)
Log(1+OpeRev)	0.035***	0.042***	-0.006	0.035***	0.042***	-0.006
	(0.005)	(0.005)	(0.041)	(0.005)	(0.005)	(0.041)
ROA	-0.002***	-0.001***	0.007	-0.002***	-0.001***	0.007
	(0.000)	(0.001)	(0.006)	(0.000)	(0.001)	(0.006)
P/L/Assets	-0.009	0.059	-2.175*	-0.008	0.059	-2.173*
	(0.105)	(0.117)	(1.112)	(0.105)	(0.117)	(1.113)
CashFlow/Assets	-0.083	-0.169*	0.854	-0.084	-0.169*	0.860
	(0.096)	(0.097)	(0.814)	(0.096)	(0.097)	(0.814)
HHI	-0.154	-0.013	-0.735	-0.154	-0.013	-0.740
	(0.124)	(0.119)	(0.495)	(0.124)	(0.119)	(0.495)
HHI*HHI	0.053	0.042	0.540	0.053	0.041	0.543
	(0.146)	(0.155)	(0.432)	(0.146)	(0.155)	(0.433)
Blank_R&D	-7.937***	-8.105***	-4.507***	-7.937***	-8.105***	-4.508***
	(0.125)	(0.126)	(0.861)	(0.125)	(0.126)	(0.861)
Constant	5.627***	6.267***	-1.438*	5.626***	6.268***	-1.441*
	(0.182)	(0.194)	(0.783)	(0.182)	(0.194)	(0.784)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	437,845	386,032	26,675	437,845	386,032	26,675
R-squared	0.968	0.974	0.897	0.968	0.974	0.897

Table 5. Chinese Ownership and Granted Patents

Notes: This table presents Poisson regression analyses examining the relationship between Chinese ownership and target firms' patenting activity, specifically measuring the number of patents applied for by the firm from year t+1 to t+3 that are eventually granted. To prevent double-counting, duplicate patent applications across multiple jurisdictions are consolidated into a single application, and patents applied for by multiple firms are proportionally attributed among the applicants. CNOwn identifies firms whose direct or ultimate shareholders (UO10) are Chinese entities; CNOwn*SOE identifies direct or ultimate ownership by Chinese government entities (UO25). With control, Chinese entities must be the largest direct shareholders with at least 10% ownership or ultimate shareholders. The narrow definition includes entities in mainland China, while the broad definition includes entities in mainland China, Hong Kong, Macau, or with "golden shares." Control variables are detailed in Table A1 of the Appendix. The sample covers the period from 2012 to 2021. Standard errors clustered at the firm level are in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: Overall

	Ownership				Control			
	Narrow		Broad		Narrow		Broad	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	#GrantedPatents							
CNOwn	0.041	-0.064*	0.063	0.024	0.045	-0.061	0.083	0.034
	(0.056)	(0.034)	(0.040)	(0.046)	(0.061)	(0.038)	(0.066)	(0.083)
Log(1+Assets)		0.179***		0.178***		0.178***		0.178***
		(0.044)		(0.044)		(0.044)		(0.044)
Log(1+Fixed)		0.005		0.005		0.005		0.005
		(0.034)		(0.034)		(0.034)		(0.034)
Log(1+Debts)		0.003		0.003		0.003		0.003
		(0.006)		(0.006)		(0.006)		(0.006)
Log(1+Sales)		-0.014		-0.014		-0.014		-0.014
		(0.009)		(0.009)		(0.009)		(0.009)
Log(1+Empl)		0.040*		0.040*		0.040*		0.040*
		(0.024)		(0.024)		(0.024)		(0.024)
Log(1+OpeRev)		-0.002		-0.001		-0.002		-0.001
		(0.012)		(0.012)		(0.012)		(0.012)
ROA		0.003		0.003		0.003		0.003
		(0.002)		(0.002)		(0.002)		(0.002)
P/L/Assets		-0.669**		-0.662**		-0.669**		-0.660**
		(0.312)		(0.312)		(0.312)		(0.311)
CashFlow/Assets		0.819***		0.806***		0.819***		0.802***
		(0.293)		(0.292)		(0.294)		(0.293)
HHI		1.180**		1.179**		1.180**		1.183**
		(0.581)		(0.581)		(0.581)		(0.581)
HHI*HHI		-0.507		-0.505		-0.507		-0.511
		(0.576)		(0.575)		(0.576)		(0.575)
Constant	6.488***	2.441***	6.487***	2.455***	6.488***	2.443***	6.487***	2.450***
	(0.000)	(0.659)	(0.001)	(0.658)	(0.000)	(0.658)	(0.001)	(0.658)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	117,569	65,886	117,569	65,886	117,569	65,886	117,569	65,886
Log-likelihood	-296,301	-179,781	-296,267	-179,792	-296,301	-179,784	-296,271	-179,792

Panel B: SOE versus Private

	Ownership				Control			
	Narrow		Broad		Narrow		Broad	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	#GrantedPatents							
CNOwn	0.037	-0.066*	0.061	0.023	0.040	-0.062	0.081	0.034
	(0.059)	(0.034)	(0.042)	(0.046)	(0.065)	(0.038)	(0.070)	(0.083)
CNOwn*SOE	0.065	0.100	0.046	0.048	0.062	0.097	0.029	0.044
	(0.061)	(0.128)	(0.044)	(0.133)	(0.067)	(0.128)	(0.067)	(0.135)
Log(1+Assets)		0.178***		0.178***		0.178***		0.178***
		(0.044)		(0.044)		(0.044)		(0.044)
Log(1+Fixed)		0.005		0.005		0.005		0.005
		(0.034)		(0.034)		(0.034)		(0.034)
Log(1+Debts)		0.003		0.003		0.003		0.003
		(0.006)		(0.006)		(0.006)		(0.006)
Log(1+Sales)		-0.014		-0.014		-0.014		-0.014
		(0.009)		(0.009)		(0.009)		(0.009)
Log(1+Empl)		0.040*		0.040*		0.040*		0.040*
		(0.024)		(0.024)		(0.024)		(0.024)
Log(1+OpeRev)		-0.002		-0.001		-0.002		-0.001
		(0.012)		(0.012)		(0.012)		(0.012)
ROA		0.003		0.003		0.003		0.003
		(0.002)		(0.002)		(0.002)		(0.002)
P/L/Assets		-0.669**		-0.662**		-0.669**		-0.660**
		(0.312)		(0.312)		(0.312)		(0.311)
CashFlow/Assets		0.819***		0.806***		0.819***		0.802***
		(0.293)		(0.292)		(0.294)		(0.293)
HHI		1.180**		1.178**		1.180**		1.183**
		(0.581)		(0.581)		(0.581)		(0.581)
HHI*HHI		-0.507		-0.505		-0.507		-0.511
		(0.576)		(0.575)		(0.576)		(0.575)
Constant	6.488***	2.442***	6.487***	2.456***	6.488***	2.443***	6.487***	2.450***
	(0.000)	(0.659)	(0.001)	(0.658)	(0.000)	(0.658)	(0.001)	(0.658)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	117,569	65,886	117,569	65,886	117,569	65,886	117,569	65,886
Log-likelihood	-296,300	-179,780	-296,266	-179,792	-296,300	-179,784	-296,270	-179,792

Table 6. Chinese Ownership and Other Firm-Level Outcomes

Notes: This table reports OLS regression analyses examining the relationship between Chinese ownership and target firms' profitability, investment, and employment. Dependent variables include the logarithm of firm-level fixed assets, return on assets (ROA) measured using income and profit/loss (P/L) before tax, and the logarithm of the firm-level number of employees. CNOwn with control identifies firms whose largest direct shareholders with at least 10% ownership or ultimate shareholders (UO10) are Chinese entities (mainland China, Hong Kong, Macau, or with "golden shares"); CNOwn*SOE with control identifies the largest direct (≥10%) or ultimate ownership by Chinese government entities (UO25). Control variables are detailed in Table A1 of the Appendix. The sample covers the period from 2012 to 2021. Standard errors clustered at the firm level are in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: Overall

	Control (Broad)		
	(1)	(2)	(3)
	ROA	Log(1+Fixed)	Log(1+Empl)
CNOwn	-1.192***	0.074***	-0.020
	(0.311)	(0.022)	(0.013)
Log(1+Assets)	2.950***		
	(0.107)		
Log(1+Fixed)	-0.855***		
	(0.049)		
Log(1+Debts)	-0.408***		
	(0.016)		
Log(1+Sales)	0.708***		
	(0.029)		
Log(1+Empl)	-0.592***		
	(0.057)		
ROA		-0.006***	0.000
		(0.001)	(0.000)
P/L/Assets		0.454***	-0.532***
		(0.106)	(0.053)
CashFlow/Assets		0.386***	0.653***
		(0.098)	(0.044)
HHI	-2.487***	0.008	0.041
	(0.907)	(0.049)	(0.028)
HHI*HHI	2.420**	0.023	-0.035
	(0.960)	(0.048)	(0.027)
Constant	-38.455***	17.307***	5.417***
	(1.629)	(0.005)	(0.003)
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	539,120	769,057	559,919
R-squared	0.620	0.908	0.957

Panel B: SOE versus Private

	Control (Broad)		
	(1)	(2)	(3)
	ROA	Log(1+Fixed)	Log(1+Empl)
CNOwn	-1.079***	0.066***	-0.023*
	(0.324)	(0.022)	(0.013)
CNOwn*SOE	-1.289*	0.093*	0.041
	(0.664)	(0.056)	(0.025)
Log(1+Assets)	2.950***		
	(0.107)		
Log(1+Fixed)	-0.855***		
	(0.049)		
Log(1+Debts)	-0.408***		
	(0.016)		
Log(1+Sales)	0.708***		
	(0.029)		
Log(1+Empl)	-0.592***		
	(0.057)		
ROA		-0.006***	0.000
		(0.001)	(0.000)
P/L/Assets		0.454***	-0.532***
		(0.106)	(0.053)
CashFlow/Assets		0.386***	0.653***
		(0.098)	(0.044)
HHI	-2.478***	0.008	0.041
	(0.907)	(0.049)	(0.028)
HHI*HHI	2.409**	0.023	-0.035
	(0.960)	(0.048)	(0.027)
Constant	-38.457***	17.307***	5.417***
	(1.629)	(0.005)	(0.003)
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	539,120	769,057	559,919
R-squared	0.620	0.908	0.957

Table 7. Chinese Ownership and Supply Chains

Notes: This table presents OLS regression analyses examining the relationship between Chinese ownership and the supply chain relationships of non-China firms. The dependent variables are binary indicators reflecting whether a non-Chinese firm becomes a supplier or a customer of a Chinese firm, as identified by FactSet Revere. CNOwn identifies firms whose direct or ultimate shareholders (UO10) are Chinese entities; CNOwn*SOE identifies direct or ultimate ownership by Chinese government entities (UO25). With control, Chinese entities must be the largest direct shareholders with at least 10% ownership or ultimate shareholders. The narrow definition includes entities in mainland China, while the broad definition includes entities in mainland China, Hong Kong, Macau, or with "golden shares." Control variables are detailed in Table A1 of the Appendix. The sample covers the period from 2012 to 2021. Standard errors clustered at the firm level are in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: CNSupplier

	Ownership				Control			
	Narrow		Broad		Narrow		Broad	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CNOwn	0.064***	0.062***	0.043***	0.042***	0.071***	0.070***	0.056***	0.054***
	(0.020)	(0.021)	(0.013)	(0.013)	(0.020)	(0.020)	(0.016)	(0.016)
CNOwn*SOE		0.028		0.055		0.018		0.043
		(0.073)		(0.071)		(0.073)		(0.071)
Log(1+Assets)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Log(1+Fixed)	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Log(1+Debts)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Log(1+Sales)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Log(1+Empl)	0.010***	0.010***	0.010***	0.010***	0.010***	0.010***	0.010***	0.010***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Log(1+OpeRev)	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ROA	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
P/L/Assets	0.038	0.038	0.038	0.038	0.037	0.037	0.038	0.038
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
CashFlow/Assets	-0.032	-0.032	-0.032	-0.032	-0.031	-0.031	-0.031	-0.031
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Supplier	0.054	0.053	0.053	0.051	0.054	0.053	0.054	0.053
	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.065)	(0.064)	(0.064)
Customer	-0.049	-0.048	-0.050	-0.048	-0.047	-0.047	-0.051	-0.050
	(0.061)	(0.061)	(0.061)	(0.061)	(0.061)	(0.061)	(0.061)	(0.061)
HHI	0.056***	0.056***	0.056***	0.056***	0.056***	0.056***	0.056***	0.056***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)
HHI*HHI	0.013***	0.013***	0.012***	0.012***	0.013***	0.013***	0.013***	0.012***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	-0.190**	-0.189**	-0.190**	-0.189**	-0.191**	-0.191**	-0.189**	-0.189**
	(0.088)	(0.088)	(0.088)	(0.088)	(0.089)	(0.089)	(0.089)	(0.089)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	79,050	79,050	79,050	79,050	79,050	79,050	79,050	79,050
R-squared	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603

Panel B: CNCustomer

	Ownership				Control			
	Narrow		Broad		Narrow		Broad	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CNOwn	0.041**	0.043**	0.022*	0.023*	0.047**	0.050**	0.019	0.020
	(0.018)	(0.018)	(0.012)	(0.012)	(0.021)	(0.022)	(0.017)	(0.017)
CNOwn*SOE		-0.037		-0.016		-0.046		-0.017
		(0.056)		(0.054)		(0.058)		(0.055)
Log(1+Assets)	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Log(1+Fixed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Log(1+Debts)	0.002**	0.002**	0.002**	0.002**	0.002**	0.002**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Log(1+Sales)	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Log(1+Empl)	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Log(1+OpeRev)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ROA	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
P/L/Assets	0.104***	0.104***	0.104***	0.104***	0.103***	0.103***	0.104***	0.104***
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
CashFlow/Assets	-0.085***	-0.085***	-0.085***	-0.085***	-0.085***	-0.085***	-0.085***	-0.085***
	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)
Supplier	0.128**	0.129**	0.128**	0.129**	0.128**	0.129**	0.129**	0.130**
	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)
Customer	-0.117*	-0.118**	-0.118**	-0.119**	-0.116*	-0.117**	-0.120**	-0.120**
	(0.060)	(0.060)	(0.060)	(0.060)	(0.060)	(0.060)	(0.060)	(0.060)
HHI	0.010***	0.010***	0.010***	0.010***	0.010***	0.010***	0.010***	0.010***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
HHI*HHI	0.036***	0.036***	0.036***	0.036***	0.036***	0.036***	0.036***	0.036***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	0.097	0.097	0.097	0.097	0.095	0.095	0.097	0.097
	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	79,050	79,050	79,050	79,050	79,050	79,050	79,050	79,050
R-squared	0.621	0.621	0.621	0.621	0.621	0.621	0.621	0.621

Table 8. Target Firm Outcomes by Depth of Chinese Control

Notes: This table reports estimates of firm outcomes on four mutually exclusive categories of Chinese ownership and control, entered jointly in each regression. *CNOwn(NoControl)* identifies firm-years for which *CNOwn(Ownership)*=1 but *CNOwn(Control,10)*=0. *CNOwn(10–25)* identifies firms satisfying the 10% control definition but not the 25% definition; *CNOwn(25–50)* identifies firms satisfying the 25% but not the 50% definition; and *CNOwn(50+)* identifies firms satisfying the 50% control definition. At threshold *q*, a firm satisfies *CNOwn(Control,q)* when a Chinese entity is either its largest direct shareholder with at least *q*% equity or its global ultimate owner with at least *q*% equity at every tier of the ownership chain. The omitted category consists of firms with no identified Chinese ownership link. All variables use the broad definition of Chinese entities, including entities in mainland China, Hong Kong, and Macau and entities holding "golden shares." The sample consists of nonfinancial, non-Chinese "Very Large" Orbis firms from 2012 through 2021. All specifications include the firm controls detailed in Table A1, firm fixed effects, and year fixed effects. *#(GrantedPatents)* is estimated by PPML using outcome windows that close by 2020; all other outcomes are estimated by OLS. "Treated firm-years" reports the number of observations in each category within the estimation sample for that column. Standard errors clustered by firm are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

	Log(1+R&D)	**#GrantedPatents**	**ROA**	**Log(1+Fixed)**	**Log(1+Empl)**	**CNSupplier**	**CNCustomer**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CNOwn(NoControl)	0.009	0.013	-0.653	0.132***	-0.003	0.027*	0.021
	(0.074)	(0.044)	(0.451)	(0.031)	(0.019)	(0.016)	(0.014)
CNOwn(Control, 10–25)	0.069	0.126*	-0.445	0.040	-0.040**	0.065***	0.036*
	(0.062)	(0.065)	(0.409)	(0.028)	(0.017)	(0.021)	(0.021)
CNOwn(Control, 25–50)	0.203*	0.192*	-2.867***	0.121***	-0.023	0.057***	0.015
	(0.107)	(0.103)	(0.530)	(0.036)	(0.021)	(0.021)	(0.028)
CNOwn(Control, 50+)	0.032	-0.105***	-1.047**	0.145***	0.012	0.060**	0.019
	(0.090)	(0.039)	(0.521)	(0.036)	(0.022)	(0.026)	(0.029)
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	437,845	65,886	539,120	769,057	559,919	79,050	79,050
R-squared	0.968	—	0.620	0.908	0.957	0.603	0.621
Log likelihood	—	-179,732	—	—	—	—	—
Treated firm-years, CNOwn(0–10)	2,101	306	2,241	4,235	2,376	1,098	1,098
Treated firm-years, CNOwn(10–25)	2,695	214	3,026	5,326	3,182	822	822
Treated firm-years, CNOwn(25–50)	2,209	111	2,353	3,813	2,643	718	718
Treated firm-years, CNOwn(50+)	2,978	161	3,320	5,989	3,919	637	637

Table 9. Robustness: Propensity-Score-Matched Estimates

Notes: This table reports the matched difference-in-differences design. Treated firms are firms first crossing into Chinese control (largest direct shareholder with at least 10% cashflow rights, or ultimate ownership; broad definition) with no Chinese ownership in the preceding year and at least one year of prior ROA data; control firms are firms never owned by any Chinese entity. Firms are matched 1:10 on the propensity score with replacement, exactly within country, year, and terciles of the three-year average ROA; treated firms without a match in their ROA tercile are matched within country and year. Panel A reports the first-stage propensity model (logit of treatment on the year t-1 covariates, with year dummies) and the covariate balance before and after matching (standardized mean differences and variance ratios). Panels B and C report the static average treatment effect on the treated from the stacked matched panel with firm-by-cohort and cohort-by-year fixed effects, without (Panel B) and with control set (Panel C), together with the p-value of the joint significance test of the event-study leads (pre-trend). Patents are estimated by Poisson pseudo-maximum likelihood. Variable definitions are detailed in the Appendix. Standard errors clustered at the firm level are in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: First-Stage Propensity Model and Covariate Balance

			Matched		
	Logit: treat	Raw SMD	SMD	Raw VR	Matched VR
Blank_R&D	-1.097***	-0.491	-0.011	1.73	1.01
	(0.070)				
Log(1+Assets)	0.160***	0.046	0.009	0.91	0.97
	(0.029)				
Log(1+Fixed)	-0.131***	-0.061	-0.019	1.06	1.01
	(0.012)				
Log(1+Debts)	-0.027**	-0.016	-0.058	1.13	1.27
	(0.012)				
Log(1+Sales)	0.011	0.056	-0.018	0.76	1.03
	(0.029)				
Log(1+Empl)	-0.027	0.107	-0.037	0.9	0.94
	(0.023)				
Log(1+OpeRev)	0.065	0.051	-0.024	0.81	1.1
	(0.041)				
ROA	-0.011	-0.18	-0.058	1.71	1.42
	(0.007)				
P/L/Assets	-0.993	-0.171	-0.063	1.94	1.59
	(0.795)				
CashFlow/Assets	1.073*	-0.145	-0.071	1.96	1.62
	(0.570)				
HHI	4.666***	0.324	0.042	1.5	1.21
	(0.435)				
HHI*HHI	-4.095***	0.206	0.065	1.7	1.33
	(0.532)				
Observations	329,653				
Year dummies	Yes				
Pseudo R-squared	0.0407				

Panel B: Matched Average Treatment Effects

	(1) Log(1+R&D)	(2) Patents	(3) ROA	(4) Log(1+Fixed)	(5) Log(1+Empl)	(6) CNSupplier	(7) CNCustomer
CNOwn	0.148*	0.098	-0.355	-0.078	-0.006	0.066**	0.087***
	(0.088)	(0.098)	(0.590)	(0.060)	(0.034)	(0.028)	(0.025)
Blank_R&D	-5.962***						
	(0.620)						
Supplier						0.106***	0.030
						(0.021)	(0.021)
Customer						0.009	0.077***
						(0.016)	(0.019)
ES pre-trend p	0.731	0.349	0.088	0.363	0.158	0.231	0.480
Firm x cohort FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort x year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	52,986	11,230	52,406	52,981	43,864	13,514	13,514
R-squared	0.938		0.530	0.874	0.941	0.644	0.635

Panel C: Matched Average Treatment Effects, with Controls

	(1) Log(1+R&D)	(2) Patents	(3) ROA	(4) Log(1+Fixed)	(5) Log(1+Empl)	(6) CNSupplier	(7) CNCustomer
CNOwn	0.189*	0.033	-0.674	-0.065	0.008	0.085***	0.081***
	(0.096)	(0.085)	(0.578)	(0.054)	(0.030)	(0.028)	(0.024)
Blank_R&D	-6.814***						
	(0.662)						
Log(1+Assets)	0.045	0.155	4.218***			-0.024	0.017
	(0.086)	(0.109)	(0.834)			(0.029)	(0.027)
Log(1+Fixed)	0.004	-0.048	-1.071***			0.006	-0.024
	(0.029)	(0.072)	(0.387)			(0.015)	(0.024)
Log(1+Debts)	0.030***	-0.012	-0.533***			-0.001	-0.000
	(0.012)	(0.008)	(0.155)			(0.003)	(0.003)
Log(1+Sales)	-0.005	-0.040	1.242***			0.008**	0.007*
	(0.009)	(0.043)	(0.238)			(0.004)	(0.004)
Log(1+Empl)	0.024	0.114*	-0.788*			0.010	-0.026
	(0.038)	(0.063)	(0.436)			(0.015)	(0.020)
Log(1+OpeRev)	0.016	0.042				0.005	0.011**
	(0.018)	(0.037)				(0.005)	(0.004)
ROA	0.001	-0.005*		-0.004	0.000	-0.000	0.000
	(0.003)	(0.003)		(0.002)	(0.002)	(0.001)	(0.001)
P/L/Assets	0.342	-1.144		1.350**	-0.140	0.125	0.142
	(0.344)	(0.817)		(0.585)	(0.237)	(0.112)	(0.146)
CashFlow/Assets	-0.519	2.108**		-0.926	0.226	-0.156	-0.172
	(0.342)	(0.845)		(0.626)	(0.197)	(0.110)	(0.122)
HHI	-0.117	1.322	11.469*	-0.650	-0.633	-0.173	0.111
	(1.090)	(1.433)	(6.300)	(0.434)	(0.396)	(0.258)	(0.228)
HHI*HHI	-0.308	-1.299	-4.889	0.333	0.544	0.071	0.005
	(1.066)	(1.443)	(5.547)	(0.484)	(0.477)	(0.204)	(0.193)
Supplier						0.112***	0.032
						(0.023)	(0.021)

Customer						0.006	0.073***
						(0.017)	(0.019)
ES pre-trend p	0.261	0.126	0.052	0.377	0.235	0.334	0.102
Firm x cohort FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort x year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,213	9,992	47,825	50,480	42,349	12,471	12,471
R-squared	0.945		0.559	0.907	0.953	0.669	0.656

Table 10. Identification: MIC2025

Notes: This table reports the Made in China 2025 (MIC2025) identification on the matched panel of Table 9. The instrument is the sector-level policy-intensity tier Intensity_s (0-3, assigned ex ante from the MIC2025 policy documents; see Table A2) interacted with the 2015-2017 policy window. The sample covers developed-economy hosts in ISIC sections C, J, and M; uncovered sectors within these sections form the comparison group. Panel A shows the first stage regresses contemporaneous Chinese control (10%+, broad) on the instrument; the reduced forms replace the dependent variable with Log(1+R&D. Pre-period interactions are displayed relative to the omitted benchmark year 2014 (Intensity_s x 2013 and x 2012), and the post-2018 interaction is included. Panel B reports outcome-specific columns with first-stage (FS) and 2SLS estimates without pre-trend included; patents use a Poisson control-function estimator (2SLS-CF). Regressions include firm and year fixed effects, use matching weights, and report standard errors in parentheses, two-way clustered by country-year and sector-year. Kleibergen–Paap first-stage F statistics and Anderson–Rubin p-values are shown as supplied. *** p<0.01, ** p<0.05, * p<0.10.

Panel A. First stage and reduced form with pre-trend shown

	First stage	**Reduced form**
	CNOwn	**Log(1+R&D)**
Intensity_s x [2015,2017]	0.026*	0.038**
	(0.015)	(0.017)
Intensity_s x 2013	-0.034	0.038
	(0.022)	(0.021)
Intensity_s x 2012	-0.028	-0.012
	(0.020)	(0.022)
Intensity_s x Post2018	0.006	0.013
	(0.015)	(0.020)
Blank_R&D	-0.034	-10.195***
	(0.030)	(0.974)
Log(1+Assets)	0.057***	0.163**
	(0.018)	(0.064)
Log(1+Fixed)	-0.025***	-0.075***
	(0.009)	(0.025)
Log(1+Debts)	-0.003	0.031
	(0.004)	(0.024)
Log(1+Sales)	0.007	0.001
	(0.007)	(0.011)
Log(1+Empl)	-0.017*	0.025
	(0.009)	(0.044)
Log(1+OpeRev)	-0.007	0.057***
	(0.007)	(0.022)
ROA	0.000	-0.001
	(0.001)	(0.002)
P/L/Assets	0.057	-0.311
	(0.171)	(1.538)
CashFlow/Assets	-0.101	0.360
	(0.151)	(1.605)
Supplier	-0.007	
	(0.028)	
Customer	-0.056***	
	(0.021)	
HHI	0.002	-0.308
	(0.173)	(0.861)
HHI^2	-0.070	0.454

	(0.193)	(0.648)
Constant	-0.268	7.189***
	(0.232)	(1.312)
Firm FE	Yes	Yes
Year FE	Yes	Yes
Observations	27,315	27,315
R2	0.462	0.972

Panel B. First and second stage without pre-trend shown

	Log(1+R&D)		#GrantedPatents		ROA		Log(1+Fixed)		Log(1+Empl)	
	FS	**2SLS**	**FS**	**2SLS-CF**	**FS**	**2SLS**	**FS**	**2SLS**	**FS**	**2SLS**
Intensity_s x [2015,2017]	0.027*		0.026*		0.026*		0.026*		0.027*	
	(0.015)		(0.015)		(0.015)		(0.015)		(0.015)	
CNOwn [endogenous]		0.621*		0.520*		-9.934		0.716*		0.490**
		(0.335)		(0.298)		(6.346)		(0.368)		(0.247)
Stage-1 residual (control fn.)				-0.592*						
				(0.307)						
Intensity_s x 2013	-0.034		-0.033		-0.035		-0.033*		-0.034	
	(0.022)		(0.022)		(0.022)		(0.020)		(0.022)	
Intensity_s x 2012	-0.028		-0.025		-0.030		-0.034*		-0.029	
	(0.020)		(0.021)		(0.021)		(0.020)		(0.020)	
Intensity_s x Post2018	0.006	-0.012	0.000	0.000	0.009	-0.045	0.004	0.049***	0.007	0.017*
	(0.015)	(0.016)	(0.000)	(0.000)	(0.015)	(0.241)	(0.015)	(0.017)	(0.015)	(0.009)
Blank_R&D	-0.035	-10.172***								
	(0.030)	(0.976)								
Log(1+Assets)	0.056***	0.128*	0.029	0.128	0.050***	6.567***				
	(0.018)	(0.069)	(0.025)	(0.090)	(0.017)	(1.002)				
Log(1+Fixed)	-0.026***	-0.059**	0.004	-0.041	-0.022**	-2.055***				
	(0.009)	(0.027)	(0.014)	(0.043)	(0.009)	(0.447)				
Log(1+Debts)	-0.003	0.033	-0.004	-0.012	-0.004	-0.755***				
	(0.004)	(0.026)	(0.005)	(0.009)	(0.003)	(0.124)				
Log(1+Sales)	0.008	-0.004	0.012*	-0.015	0.006	1.651***				
	(0.007)	(0.012)	(0.006)	(0.060)	(0.005)	(0.268)				
Log(1+Empl)	-0.016*	0.035	-0.025*	0.148**	-0.018*	-2.899***				
	(0.009)	(0.047)	(0.014)	(0.062)	(0.010)	(0.531)				
Log(1+OpeRev)	-0.007	0.062***	-0.007	0.002						
	(0.007)	(0.021)	(0.005)	(0.075)						
ROA	0.000	-0.001	-0.000	-0.004			0.001	-0.003	0.001	-0.001
	(0.001)	(0.002)	(0.001)	(0.003)			(0.001)	(0.002)	(0.001)	(0.001)
P/L/Assets	0.076	-0.342	0.243	-1.350**			0.121	0.745	0.133	-0.512*
	(0.171)	(1.531)	(0.176)	(0.526)			(0.150)	(0.535)	(0.166)	(0.277)
CashFlow/Assets	-0.115	0.419	-0.230	2.256***			-0.162	-0.303	-0.178	0.686**
	(0.150)	(1.597)	(0.212)	(0.562)			(0.132)	(0.493)	(0.147)	(0.270)

Supplier										
Customer										
HHI	0.016	-0.333	0.118	0.025	-0.001	-0.056	-0.084	-1.082**	0.006	-0.638**
	(0.174)	(0.898)	(0.236)	(0.647)	(0.170)	(5.849)	(0.165)	(0.465)	(0.171)	(0.255)
HHI^2	-0.087	0.519	0.085	0.151	-0.080	3.128	0.064	0.824	-0.081	0.585**
	(0.193)	(0.681)	(0.262)	(0.599)	(0.186)	(6.100)	(0.187)	(0.685)	(0.189)	(0.250)
Constant	-0.245		-0.414	3.773***	-0.297		0.190***		0.185***	
	(0.234)		(0.400)	(1.092)	(0.217)		(0.031)		(0.033)	
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	27,315	27,315	16,464	7,158	28,341	28,341	29,417	29,417	27,478	27,478
R2 / pseudo-R2	0.461	0.628	0.495	0.982	0.458	-0.035	0.448	-0.089	0.458	-0.133
Clusters (country x year)	301	301	177	145	304	304	306	306	301	301
Clusters (sector x year)	1,269	1,269	766	664	1,271	1,271	1,287	1,287	1,269	1,269
KP first-stage F		14.81				15.02		18.07		15.84
AR chi2 p (weak-IV robust)		0.015				0.042		0.013		0.008
AR F p		0.023				0.057		0.020		0.014

Table 11. Is China Unique?

Notes: This table compares the impacts of ownership by the US, Japan, and India on target firms' firm-level outcomes: R&D expenditures (logarithm of reported R&D, with missing values treated as zero and indicated by Blank_R&D), granted patents (filed from year t+1 to t+3, adjusted to avoid double counting), profitability (ROA based on income and profit/loss before tax), investment (logarithm of fixed assets), employment (logarithm of the number of employees), and supply chain relationships (binary indicators for being suppliers or customers of firms from the specified country XX as reported by FactSet Revere). XX ownership with control (XXOwn with control) identifies firms whose largest direct shareholders with at least 10% ownership or ultimate shareholders (UO10) are XX entities. Control variables are detailed in Table A1 of the Appendix. The sample covers the period from 2012 to 2021. Non-count outcomes are estimated with OLS regressions, while count outcomes (granted patents) are estimated with Poisson regressions. Standard errors clustered at the firm level are in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: XX = US

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Log(1+R&D)	#GrantedPatents	ROA	Log(1+Fixed)	Log(1+Empl)	XXSupplier	XXCustomer
XX_Owned	0.004	0.041	-0.000	0.038***	0.016***	0.040***	0.016
	(0.013)	(0.025)	(0.115)	(0.010)	(0.005)	(0.013)	(0.012)
Log(1+Assets)	0.078***	0.228***	2.410***			0.020**	0.015*
	(0.012)	(0.049)	(0.098)			(0.009)	(0.009)
Log(1+Fixed)	0.010**	-0.005	-0.787***			0.013***	0.010*
	(0.005)	(0.038)	(0.045)			(0.004)	(0.005)
Log(1+Debts)	0.003	0.007	-0.375***			0.001	0.002
	(0.002)	(0.005)	(0.015)			(0.001)	(0.001)
Log(1+Sales)	-0.001	-0.017*	0.754***			0.002	0.003
	(0.002)	(0.010)	(0.029)			(0.002)	(0.002)
Log(1+Empl)	0.069***	0.010	-0.395***			0.006	0.012***
	(0.010)	(0.023)	(0.040)			(0.005)	(0.004)
Log(1+OpeRev)	0.033***	0.003				-0.000	-0.003
	(0.006)	(0.013)				(0.003)	(0.003)
ROA	-0.001	0.003		-0.005***	-0.000	-0.000	-0.001*
	(0.001)	(0.002)		(0.001)	(0.000)	(0.000)	(0.000)
P/L/Assets	-0.018	-0.987***		0.163**	-0.351***	0.028	-0.004
	(0.070)	(0.281)		(0.082)	(0.053)	(0.041)	(0.046)
CashFlow/Assets	-0.147*	1.076***		0.604***	0.530***	-0.041	0.035
	(0.089)	(0.288)		(0.090)	(0.045)	(0.048)	(0.050)
HHI	0.537***	2.480***	-3.288***	0.007	0.001	0.150*	-0.222***
	(0.144)	(0.832)	(0.787)	(0.048)	(0.028)	(0.079)	(0.079)
HHI*HHI	-0.456***	-1.691**	3.123***	0.028	0.005	-0.077	0.138*
	(0.158)	(0.747)	(0.884)	(0.048)	(0.027)	(0.075)	(0.074)
Blank_R&D	-7.370***						
	(0.127)						
Supplier						0.252***	0.030***
						(0.007)	(0.006)
Customer						0.035***	0.230***
						(0.005)	(0.006)
Constant	4.639***	1.607*	-31.385***	17.202***	5.348***	-0.670***	-0.467***
	(0.204)	(0.881)	(1.502)	(0.005)	(0.003)	(0.138)	(0.134)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	418,805	58,683	592,076	742,878	540,174	59,827	59,827
R-squared/Log-likelihood	0.949	-152,465	0.604	0.903	0.955	0.711	0.704

Panel B: XX = JP

	(1) Log(1+R&D)	(2) Log(1+#Patents)	(3) ROA	(4) Log(1+Fixed)	(5) Log(1+Empl)	(6) XXSupplier	(7) XXCustomer
XX_Owned	0.098***	0.139	-0.538***	0.052***	0.010	0.084***	0.069***
	(0.035)	(0.092)	(0.203)	(0.018)	(0.011)	(0.025)	(0.027)
Log(1+Assets)	0.096***	0.192***	2.656***			0.017**	0.001
	(0.011)	(0.057)	(0.100)			(0.007)	(0.006)
Log(1+Fixed)	0.015***	0.028	-0.796***			0.008**	0.003
	(0.005)	(0.038)	(0.046)			(0.004)	(0.003)
Log(1+Debts)	0.003	-0.004	-0.416***			0.001	0.001
	(0.002)	(0.008)	(0.015)			(0.001)	(0.001)
Log(1+Sales)	0.000	-0.012	0.755***			-0.005**	-0.001
	(0.002)	(0.009)	(0.029)			(0.002)	(0.002)
Log(1+Empl)	0.069***	0.041	-0.443***			0.007*	-0.001
	(0.010)	(0.034)	(0.042)			(0.004)	(0.004)
Log(1+OpeRev)	0.037***	0.018**				0.007***	0.000
	(0.005)	(0.008)				(0.003)	(0.002)
ROA	-0.002***	0.002		-0.005***	-0.001**	-0.000	-0.000*
	(0.001)	(0.001)		(0.001)	(0.000)	(0.000)	(0.000)
P/L/Assets	0.100	-0.589***		0.163**	-0.192***	0.024	0.015
	(0.143)	(0.225)		(0.066)	(0.065)	(0.031)	(0.030)
CashFlow/Assets	-0.131	0.797***		0.586***	0.394***	-0.022	0.004
	(0.124)	(0.293)		(0.079)	(0.051)	(0.032)	(0.031)
HHI	0.657***	1.966**	-4.361***	0.045	0.009	-0.109	-0.097
	(0.141)	(0.822)	(0.812)	(0.049)	(0.028)	(0.081)	(0.076)
HHI*HHI	-0.575***	-1.045	3.925***	-0.009	-0.004	0.099	0.094
	(0.157)	(0.830)	(0.901)	(0.048)	(0.027)	(0.071)	(0.069)
Blank_R&D	-9.055***						
	(0.131)						
Supplier						0.131***	0.029***
						(0.006)	(0.005)
Customer						0.023***	0.084***
						(0.005)	(0.004)
Constant	5.806***	0.866	-35.275***	17.245***	5.424***	-0.488***	0.011
	(0.202)	(0.894)	(1.535)	(0.005)	(0.003)	(0.106)	(0.090)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	411,698	53,627	550,634	743,920	533,812	61,377	61,377
R-squared/Log-likelihood	0.969	-137,464	0.624	0.906	0.958	0.673	0.652

Panel C: XX = IN

	(1) Log(1+R&D)	(2) Log(1+#Patents)	(3) ROA	(4) Log(1+Fixed)	(5) Log(1+Empl)	(6) XXSupplier	(7) XXCustomer
XX_Owned	-0.005	0.070*	-0.654	-0.148***	-0.033	-0.046	0.013
	(0.034)	(0.036)	(0.506)	(0.056)	(0.023)	(0.049)	(0.068)
Log(1+Assets)	0.097***	0.211***	2.699***			0.005	-0.005
	(0.011)	(0.049)	(0.098)			(0.004)	(0.004)
Log(1+Fixed)	0.011**	0.014	-0.813***			0.001	0.000
	(0.005)	(0.039)	(0.045)			(0.002)	(0.002)
Log(1+Debts)	0.002	0.001	-0.402***			0.000	0.000
	(0.002)	(0.006)	(0.015)			(0.001)	(0.001)
Log(1+Sales)	-0.001	-0.016*	0.773***			-0.001	-0.003**
	(0.002)	(0.009)	(0.029)			(0.001)	(0.001)
Log(1+Empl)	0.072***	0.032	-0.442***			0.005**	0.003
	(0.010)	(0.024)	(0.040)			(0.002)	(0.002)
Log(1+OpeRev)	0.038***	0.002				0.000	0.004**
	(0.005)	(0.011)				(0.002)	(0.002)
ROA	-0.002***	0.003		-0.005***	-0.001**	-0.000	-0.000**
	(0.001)	(0.002)		(0.001)	(0.000)	(0.000)	(0.000)
P/L/Assets	0.101	-0.739***		0.153**	-0.221***	0.027	0.021
	(0.135)	(0.262)		(0.066)	(0.063)	(0.020)	(0.016)
CashFlow/Assets	-0.192	0.874***		0.610***	0.426***	-0.008	-0.019
	(0.121)	(0.267)		(0.079)	(0.050)	(0.018)	(0.017)
HHI	0.508***	2.001**	-3.779***	0.027	0.005	0.073	0.050
	(0.142)	(0.779)	(0.784)	(0.049)	(0.028)	(0.046)	(0.051)
HHI*HHI	-0.420***	-1.056	3.561***	0.008	-0.000	-0.059	-0.034
	(0.157)	(0.697)	(0.880)	(0.048)	(0.027)	(0.046)	(0.052)
Blank_R&D	-7.912***						
	(0.125)						
Supplier						0.023***	0.000
						(0.002)	(0.002)
Customer						0.002	0.010***
						(0.002)	(0.002)
Constant	4.905***	1.522**	-36.423***	17.351***	5.445***	-0.115*	0.117**
	(0.199)	(0.774)	(1.490)	(0.005)	(0.003)	(0.062)	(0.059)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	447,836	66,835	621,263	729,439	569,938	82,596	82,596
R-squared/Log-likelihood	0.964	-184,543	0.624	0.906	0.957	0.609	0.629

Table 12. The Crowding-Out Effect of Chinese Control to Non-Targeted Firms

Notes: This table reports regressions of firm-level outcomes on the share of country–industry assets under Chinese control, estimated on the sample of firms not yet under Chinese ownership. A firm contributes to the sample in every year prior to the onset of Chinese ownership and exits in the first year it becomes Chinese-owned, so that sample membership never depends on future information. Dependent variables are defined as in Tables 4 through 7. The sample consists of non-financial "Very Large" firms in Orbis; firms based in mainland China, Hong Kong, or Macau, or holding "golden shares," are excluded. *%CNOwn*Assets* is the leave-one-out share of assets under Chinese control in the firm's country–sector–year: the focal firm's own assets are removed from the denominator and, where the firm is itself Chinese-controlled, from the numerator. Panel A uses the baseline 10% control threshold. Panel B decomposes the share into two mutually exclusive bands, the share held at stakes of 10% to 25% and the share held at 25% or more, which sum to the Panel A measure. All specifications include firm, country-by-year, and sector-by-year fixed effects and the controls defined in Table A1. The sample covers 2012 to 2021. Non-count outcomes are estimated by OLS and granted patents by Poisson, so patent coefficients are semielasticities. Standard errors clustered at the country–by-sector level are in parentheses. Significance levels: ***p<0.01, ** p<0.05, * p<0.1.

Panel A: Overall	Control (Broad)						
	Log(1+R&D)	#GrantedPatents	ROA	Log(1+Fixed)	Log(1+Empl)	CNSupplier	CNCustomer
%CNOwn(10+)*Assets	-0.280**	-0.104	-1.408	-0.044	0.026	0.017	0.056
	(0.136)	(0.479)	(1.955)	(0.096)	(0.074)	(0.081)	(0.089)
Log(1+∑Assets_NonCN)	0.040*	0.010	-0.221			-0.005	-0.008
	(0.024)	(0.077)	(0.153)			(0.010)	(0.009)
Log(1+Assets)	0.065***	0.177***	2.811***			0.004	-0.004
	(0.016)	(0.049)	(0.244)			(0.005)	(0.005)
Log(1+Fixed)	-0.000	-0.014	-0.774***			0.004	-0.000
	(0.005)	(0.037)	(0.073)			(0.004)	(0.002)
Log(1+Debts)	-0.000	0.006	-0.400***			0.001	0.001
	(0.002)	(0.007)	(0.027)			(0.001)	(0.001)
Log(1+Sales)	-0.001	-0.012	0.688***			0.002	-0.000
	(0.003)	(0.008)	(0.072)			(0.002)	(0.001)
Log(1+Empl)	0.067***	0.062**	-0.683***			0.009***	0.006*
	(0.014)	(0.024)	(0.095)			(0.003)	(0.004)
Log(1+OpeRev)	0.028***	-0.002				-0.003	-0.000
	(0.007)	(0.010)				(0.002)	(0.002)
ROA	-0.001*	0.003***		-0.006***	0.000	0.000	-0.000**
	(0.001)	(0.001)		(0.001)	(0.000)	(0.000)	(0.000)
PL/Assets	0.039	-0.653***		0.444***	-0.577***	0.007	0.106***
	(0.136)	(0.246)		(0.118)	(0.075)	(0.040)	(0.037)
CashFlow/Assets	-0.154	0.816***		0.344***	0.688***	-0.007	-0.088***
	(0.125)	(0.275)		(0.118)	(0.065)	(0.040)	(0.032)
HHI	0.240	2.350***	-2.159	-0.046	-0.059*	-0.023	0.091
	(0.259)	(0.722)	(1.612)	(0.062)	(0.033)	(0.097)	(0.093)
HHI*HHI	-0.291	-1.580*	1.513	0.030	0.062**	0.011	-0.113
	(0.302)	(0.854)	(1.961)	(0.058)	(0.029)	(0.100)	(0.089)
Blank_R&D	-8.284***						
	(0.694)						
Supplier						0.043***	0.005
						(0.006)	(0.005)
Customer						0.008**	0.024***
						(0.003)	(0.004)
Constant	5.424***	2.307	-31.090***	17.299***	5.404***	-0.036	0.320
	(0.833)	(2.009)	(4.759)	(0.007)	(0.004)	(0.274)	(0.231)
Fixed Effect	Firm, Country*Year, Sector*Year						
Observations	397,374	62,731	488,605	695,405	512,968	69,587	69,587
R-squared/Log-likelihood	0.974	-169,442	0.632	0.911	0.959	0.599	0.625

Panel B: Control Intensity	Control (Broad)						
	Log(1+R&D)	#GrantedPatents	ROA	Log(1+Fixed)	Log(1+Empl)	CNSupplier	CNCustomer
%CNOwn(10-25)*Assets	-0.245	0.013	-5.897*	0.047	0.025	0.115	-0.027
	(0.362)	(1.027)	(3.266)	(0.179)	(0.166)	(0.164)	(0.189)
%CNOwn(25+)*Assets	-0.732***	-0.799	0.016	-0.073	-0.096	-0.155	0.233*
	(0.251)	(0.495)	(2.493)	(0.152)	(0.102)	(0.123)	(0.125)
Log(1+∑Assets_NonCN)	0.039	0.006	-0.220			-0.005	-0.008
	(0.024)	(0.075)	(0.153)			(0.010)	(0.009)
Log(1+Assets)	0.065***	0.178***	2.811***			0.004	-0.004
	(0.016)	(0.049)	(0.244)			(0.005)	(0.005)
Log(1+Fixed)	-0.000	-0.014	-0.774***			0.004	-0.000
	(0.005)	(0.037)	(0.073)			(0.004)	(0.002)
Log(1+Debts)	-0.000	0.006	-0.400***			0.001	0.001
	(0.002)	(0.007)	(0.027)			(0.001)	(0.001)
Log(1+Sales)	-0.001	-0.012	0.688***			0.002	-0.000
	(0.003)	(0.008)	(0.072)			(0.002)	(0.001)
Log(1+Empl)	0.067***	0.061**	-0.683***			0.009***	0.006*
	(0.014)	(0.024)	(0.095)			(0.003)	(0.004)
Log(1+OpeRev)	0.028***	-0.002				-0.003	-0.000
	(0.007)	(0.010)				(0.002)	(0.002)
ROA	-0.001*	0.003***		-0.006***	0.000	0.000	-0.000**
	(0.001)	(0.001)		(0.001)	(0.000)	(0.000)	(0.000)
PL/Assets	0.038	-0.650***		0.444***	-0.577***	0.007	0.106***
	(0.136)	(0.247)		(0.118)	(0.075)	(0.040)	(0.037)
CashFlow/Assets	-0.154	0.815***		0.344***	0.687***	-0.007	-0.088***
	(0.126)	(0.275)		(0.118)	(0.065)	(0.040)	(0.032)
HHI	0.237	2.354***	-2.170	-0.047	-0.060*	-0.022	0.089
	(0.258)	(0.724)	(1.615)	(0.062)	(0.034)	(0.097)	(0.093)
HHI*HHI	-0.286	-1.574*	1.490	0.031	0.062**	0.010	-0.111
	(0.302)	(0.857)	(1.967)	(0.059)	(0.029)	(0.100)	(0.089)
Blank_R&D	-8.284***						
	(0.694)						
Supplier						0.043***	0.005
						(0.006)	(0.005)
Customer						0.008**	0.024***
						(0.003)	(0.004)
Constant	5.455***	2.402	-31.109***	17.299***	5.405***	-0.025	0.312
	(0.830)	(1.963)	(4.753)	(0.007)	(0.004)	(0.274)	(0.232)
Fixed Effect	Firm, Country*Year, Sector*Year						
Observations	397,374	62,731	488,605	695,405	512,968	69,587	69,587
R-squared/Log-likelihood	0.974	-169,425	0.632	0.911	0.959	0.600	0.625

Table 13. The Combined Effect of Chinese Control on Target and Peer Firms

Notes: This table repeats the specifications of Table 12 on the pooled sample of all firms in the country–industry, including those under Chinese control. The construction of *%CNOwn*Assets*, the dependent variables, the controls, the fixed effects, and the estimation methods are identical to Table 12; the only difference is that Chinese-owned firms are retained rather than dropped in the year ownership begins. Coefficients are therefore averages across peers and targets and should not be read as industry-level aggregates: the dependent variable remains a firm-level outcome, and an unweighted regression across firms does not aggregate to a country–industry total. Panel A uses the baseline 10% control threshold; Panel B decomposes the share into the mutually exclusive 10%-to-25% and 25%-or-more bands. The sample covers 2012 to 2021. Standard errors clustered at the country–by-sector level are in parentheses. Significance levels: ***p<0.01, ** p<0.05, * p<0.1.

Panel A: Overall

	Control (Broad)						
	Log(1+R&D)	#GrantedPatents	ROA	Log(1+Fixed)	Log(1+Empl)	CNSupplier	CNCustomer
%CNOwn*Assets	-0.153	0.228	-0.935	-0.058	0.002	-0.007	0.021
	(0.116)	(0.300)	(1.333)	(0.076)	(0.055)	(0.055)	(0.074)
Log(1+∑Assets_NonCN)	0.038*	0.020	-0.218			-0.006	-0.012
	(0.022)	(0.075)	(0.151)			(0.008)	(0.008)
Log(1+Assets)	0.065***	0.172***	2.893***			0.004	-0.002
	(0.016)	(0.049)	(0.242)			(0.006)	(0.006)
Log(1+Fixed)	0.001	-0.012	-0.779***			0.000	-0.002
	(0.005)	(0.037)	(0.072)			(0.004)	(0.003)
Log(1+Debts)	0.000	0.006	-0.410***			0.001	0.002**
	(0.002)	(0.007)	(0.027)			(0.001)	(0.001)
Log(1+Sales)	-0.001	-0.012	0.694***			0.002	-0.001
	(0.003)	(0.008)	(0.070)			(0.001)	(0.002)
Log(1+Empl)	0.074***	0.062**	-0.669***			0.009***	0.005
	(0.014)	(0.025)	(0.095)			(0.003)	(0.004)
Log(1+OpeRev)	0.030***	-0.002				-0.002	-0.000
	(0.007)	(0.010)				(0.002)	(0.002)
ROA	-0.001*	0.003***		-0.006***	0.000	-0.000	-0.000
	(0.001)	(0.001)		(0.001)	(0.000)	(0.000)	(0.000)
PL/Assets	0.054	-0.654***		0.449***	-0.557***	0.045	0.119***
	(0.132)	(0.243)		(0.116)	(0.073)	(0.042)	(0.040)
CashFlow/Assets	-0.167	0.816***		0.351***	0.664***	-0.038	-0.108***
	(0.123)	(0.270)		(0.118)	(0.064)	(0.040)	(0.037)
HHI	0.334	2.357***	-1.888	-0.056	-0.066**	0.054	0.212**
	(0.260)	(0.724)	(1.588)	(0.064)	(0.033)	(0.088)	(0.094)
HHI*HHI	-0.372	-1.583*	1.146	0.036	0.068**	-0.067	-0.209**
	(0.324)	(0.857)	(1.946)	(0.061)	(0.029)	(0.092)	(0.089)
Blank_R&D	-8.226***						
	(0.696)						
Supplier						0.053***	0.007
						(0.007)	(0.005)
Customer						0.009***	0.032***
						(0.003)	(0.004)
Constant	5.266***	2.071	-32.759***	17.310***	5.413***	0.058	0.402*
	(0.803)	(1.971)	(4.730)	(0.007)	(0.004)	(0.232)	(0.226)
Fixed Effect	Firm, Country*Year, Sector*Year						
Observations	410,151	63,924	502,694	721,372	528,971	73,956	73,956
R-squared/Log-likelihood	0.972	-172,937	0.630	0.909	0.959	0.610	0.634
	Control (Broad)						

Panel B: Control Intensity

	Log(1+R&D)	#GrantedPatents	ROA	Log(1+Fixed)	Log(1+Empl)	CNSupplier	CNCustomer
%CNOwn(10-25)*Assets	0.068	0.545	-3.536	-0.021	-0.075	-0.040	-0.033
	(0.297)	(0.784)	(2.750)	(0.146)	(0.120)	(0.111)	(0.159)
%CNOwn(25+)*Assets	-0.587***	-0.665	0.461	-0.110	-0.105	-0.081	0.085
	(0.206)	(0.493)	(2.159)	(0.125)	(0.083)	(0.087)	(0.126)
Log(1+∑Assets_NonCN)	0.037*	0.008	-0.213			-0.007	-0.012
	(0.022)	(0.072)	(0.151)			(0.008)	(0.008)
Log(1+Assets)	0.065***	0.173***	2.893***			0.004	-0.002
	(0.016)	(0.049)	(0.242)			(0.006)	(0.006)
Log(1+Fixed)	0.001	-0.012	-0.779***			0.000	-0.002
	(0.005)	(0.037)	(0.072)			(0.004)	(0.003)
Log(1+Debts)	0.000	0.006	-0.410***			0.001	0.002**
	(0.002)	(0.006)	(0.027)			(0.001)	(0.001)
Log(1+Sales)	-0.001	-0.012	0.694***			0.002	-0.001
	(0.003)	(0.008)	(0.070)			(0.001)	(0.002)
Log(1+Empl)	0.074***	0.062**	-0.669***			0.009***	0.005
	(0.014)	(0.025)	(0.095)			(0.003)	(0.004)
Log(1+OpeRev)	0.030***	-0.002				-0.002	-0.000
	(0.007)	(0.010)				(0.002)	(0.002)
ROA	-0.001*	0.003***		-0.006***	0.000	-0.000	-0.000
	(0.001)	(0.001)		(0.001)	(0.000)	(0.000)	(0.000)
PL/Assets	0.053	-0.650***		0.449***	-0.557***	0.045	0.119***
	(0.132)	(0.243)		(0.116)	(0.073)	(0.042)	(0.040)
CashFlow/Assets	-0.166	0.816***		0.352***	0.664***	-0.038	-0.108***
	(0.123)	(0.270)		(0.118)	(0.064)	(0.040)	(0.037)
HHI	0.324	2.358***	-1.875	-0.056	-0.065*	0.052	0.216**
	(0.259)	(0.721)	(1.592)	(0.064)	(0.033)	(0.089)	(0.094)
HHI*HHI	-0.359	-1.580*	1.110	0.037	0.067**	-0.065	-0.213**
	(0.323)	(0.853)	(1.950)	(0.061)	(0.029)	(0.092)	(0.089)
Blank_R&D	-8.226***						
	(0.696)						
Supplier						0.053***	0.007
						(0.007)	(0.005)
Customer						0.009***	0.032***
						(0.003)	(0.004)
Constant	5.303***	2.391	-32.885***	17.310***	5.415***	0.076	0.397*
	(0.799)	(1.885)	(4.744)	(0.007)	(0.004)	(0.229)	(0.232)
Fixed Effect			Firm, Country*Year, Sector*Year				
Observations	410,151	63,924	502,694	721,372	528,971	73,956	73,956
R-squared/Log-likelihood	0.972	-172,925	0.630	0.909	0.959	0.610	0.634

Table 14. The Differential Effect of Chinese Control on Target and Peer Firms,

Notes: This table nests the peer effect and the target effect of Chinese ownership in a single firm-year regression estimated on all firms in the country–industry–year group. The specification is

$$Y_{i,c,s,t} = \alpha + \beta_1 \times \%\text{CNOwn*Assets}_{c,s,t} + \beta_2 \times \text{CNOwn}_{i,t} + \beta_3 \times (\%\text{CNOwn*Assets}_{c,s,t} \times \text{CNOwn}_{i,t}) + Control_{i,t} + \alpha^{FE} + \varepsilon_{i,c,s,t}.$$

with firm, country-by-year, and sector-by-year fixed effects. Dependent variables, *%CNOwn*Assets*, controls, and estimation methods follow Table 12. The sample covers 2012 to 2021. Standard errors clustered at the country–by-sector level are in parentheses. Significance levels: *** p<0.01, ** p<0.05, *p<0.1.

	Log(1+R&D)	#GrantedPatents	ROA	Log(1+Fixed)	Log(1+Empl)	CNSupplier	CNCustomer
%CNOwn*Assets	-0.211*	-0.003	-0.937	-0.085	-0.011	0.015	0.045
	(0.117)	(0.326)	(1.351)	(0.077)	(0.055)	(0.056)	(0.074)
CNOwn	-0.073	-0.108*	-0.358	0.006	-0.035**	0.063***	0.028
	(0.047)	(0.060)	(0.337)	(0.029)	(0.016)	(0.024)	(0.025)
%CNOwn*Assets × CNOwn	0.738**	0.873**	0.345	0.360***	0.194**	-0.112	-0.144
	(0.357)	(0.351)	(2.193)	(0.129)	(0.081)	(0.084)	(0.091)
Log(1+∑Assets_NonCN)	0.039*	0.019	-0.219			-0.006	-0.012
	(0.022)	(0.076)	(0.151)			(0.008)	(0.008)
Log(1+Assets)	0.065***	0.173***	2.893***			0.004	-0.002
	(0.016)	(0.049)	(0.242)			(0.006)	(0.006)
Log(1+Fixed)	0.001	-0.011	-0.780***			0.000	-0.002
	(0.005)	(0.037)	(0.072)			(0.004)	(0.003)
Log(1+Debts)	0.000	0.006	-0.410***			0.001	0.002**
	(0.002)	(0.007)	(0.027)			(0.001)	(0.001)
Log(1+Sales)	-0.001	-0.012	0.694***			0.002	-0.001
	(0.003)	(0.008)	(0.070)			(0.001)	(0.002)
Log(1+Empl)	0.074***	0.062**	-0.670***			0.009***	0.005
	(0.014)	(0.025)	(0.095)			(0.003)	(0.004)
Log(1+OpeRev)	0.030***	-0.003				-0.002	-0.000
	(0.007)	(0.010)				(0.002)	(0.002)
ROA	-0.001*	0.003***		-0.006***	0.000	-0.000	-0.000
	(0.001)	(0.001)		(0.001)	(0.000)	(0.000)	(0.000)
PL/Assets	0.054	-0.654***		0.449***	-0.557***	0.044	0.118***
	(0.132)	(0.241)		(0.116)	(0.073)	(0.042)	(0.040)
CashFlow/Assets	-0.167	0.809***		0.352***	0.664***	-0.037	-0.107***
	(0.123)	(0.271)		(0.118)	(0.064)	(0.040)	(0.037)
HHI	0.336	2.350***	-1.897	-0.054	-0.065**	0.051	0.211**
	(0.260)	(0.729)	(1.589)	(0.064)	(0.033)	(0.088)	(0.094)
HHI*HHI	-0.376	-1.561*	1.159	0.035	0.067**	-0.068	-0.210**
	(0.324)	(0.863)	(1.945)	(0.061)	(0.029)	(0.092)	(0.089)
Blank_R&D	-8.226***						
	(0.696)						
Supplier						0.053***	0.007
						(0.007)	(0.005)
Customer						0.009***	0.032***
						(0.003)	(0.004)
Constant	5.248***	2.093	-32.728***	17.309***	5.414***	0.051	0.401*
	(0.805)	(1.986)	(4.729)	(0.007)	(0.004)	(0.232)	(0.223)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country*Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector*Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H0: $\beta_1+\beta_3=0$	0.527	0.870**	-0.592	0.276*	0.183**	-0.097	-0.099
	(0.359)	(0.341)	(2.389)	(0.144)	(0.091)	(0.084)	(0.107)
Observations	410,151	63,924	502,694	721,372	528,971	73,956	73,956
R-squared	0.972	-172,895	0.630	0.909	0.959	0.610	0.634

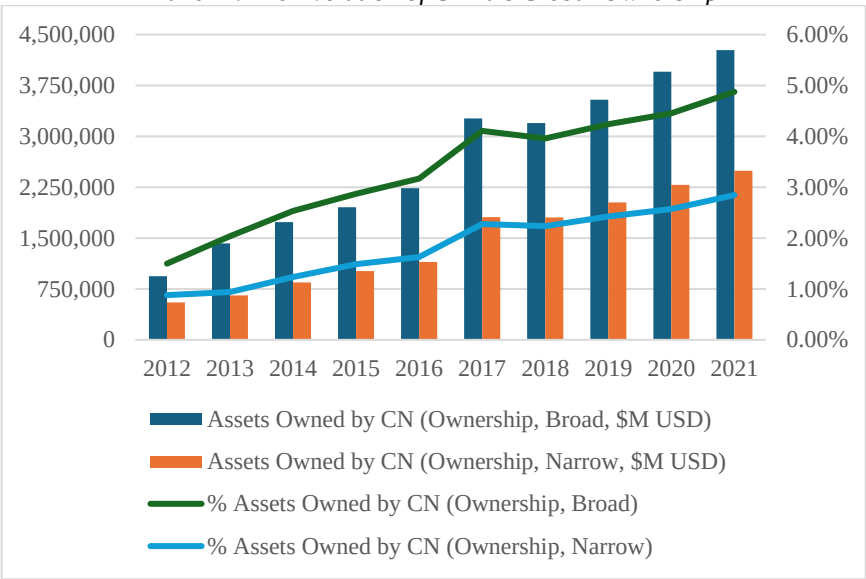
Table 15. Chinese Parents' Patenting and Citation Linkage to Acquired Targets

Notes: This table examines parent patenting in columns (1) through (4) and citations from the parent's patents to foreign targets in column (5). #GrantedPatents(t+1 to t+3) counts patent families first applied for by parent *i* in years t+1 through t+3 that are eventually granted, weighted by the inverse number of co-applicants. All patent counts and citations are restricted to invention patents; utility models and design patents are excluded. *ForeignSub* equals one if the parent holds at least one foreign subsidiary in year t, and SOE equals one if the parent is state-controlled; both follow the ownership definitions of Table 4. In columns (2) through (4) *ForeignSub* is interacted with SOE and with private status, and *p*(SOE = private) tests their equality. The sample comprises Chinese acquirers together with never-acquirer Chinese patenting firms of comparable pre-2015 patent stock; columns (3) and (4) split acquirers by whether their first foreign subsidiary is in a developed or a non-developed economy, with the comparison firms shared. Estimation is by Poisson pseudo-maximum likelihood (PPML) with firm and year fixed effects, ending in 2017 so that the three-year outcome window closes within the last complete application year. Column (5) uses a dyadic panel whose unit of observation is a parent–candidate-target pair, or dyad, in a given year over 2012 to 2020. *#Citations* counts the parent's granted families first applied for in year t that cite at least one patent of candidate firm *j*, and candidate targets are all foreign firms acquired by any Chinese parent. *OwnLink* equals one in years in which parent *i* owns firm *j*. Estimation is by PPML with parent-year and target-year fixed effects, and Implied effect reports $\exp(\hat{\beta})$. The counts reported in the Firms / dyads row refer to firms in columns (1) through (4) and to dyads in column (5). Standard errors, in parentheses, are clustered by firm in columns (1) through (4) and two-way by parent and by target in column (5). *, **, and *** denote significance at the 10%, 5%, and 1% levels.

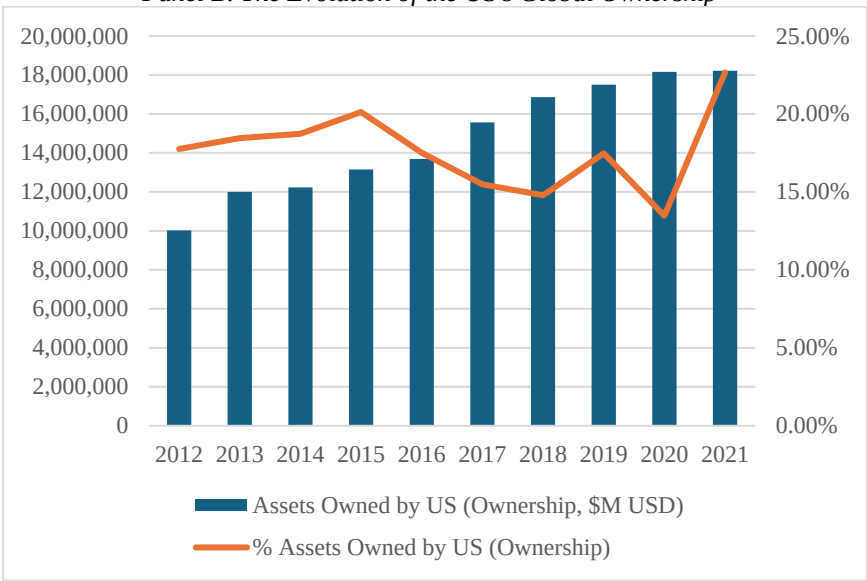
	#GrantedPatents (t+1 to t+3)				*#Citation*
	(1)	(2)	(3)	(4)	(5)
	All	All	Developed	Non-Developed	
ForeignSub	0.074				
	(0.046)				
ForeignSub (SOE parents)		0.085*	0.084*	0.105	
		(0.043)	(0.045)	(0.212)	
ForeignSub (private parents)		0.063	0.074	0.040	
		(0.059)	(0.076)	(0.091)	
SOE		0.047*	0.050*	0.048	
		(0.029)	(0.029)	(0.031)	
OwnLink					3.436***
					(0.788)
p(SOE = private)		0.734	0.898	0.780	
Implied effect					×31.1
Firm FE	Yes	Yes	Yes	Yes	—
Year FE	Yes	Yes	Yes	Yes	—
Parent × Year FE	—	—	—	—	Yes
Target × Year FE	—	—	—	—	Yes
Observations	266,220	266,220	265,824	264,942	136,474
Firms / dyads	44,370	44,370	44,304	44,157	62,792

Figure 1. The Evolution of China's Global Ownership

Panel A. The Evolution of China's Global Ownership



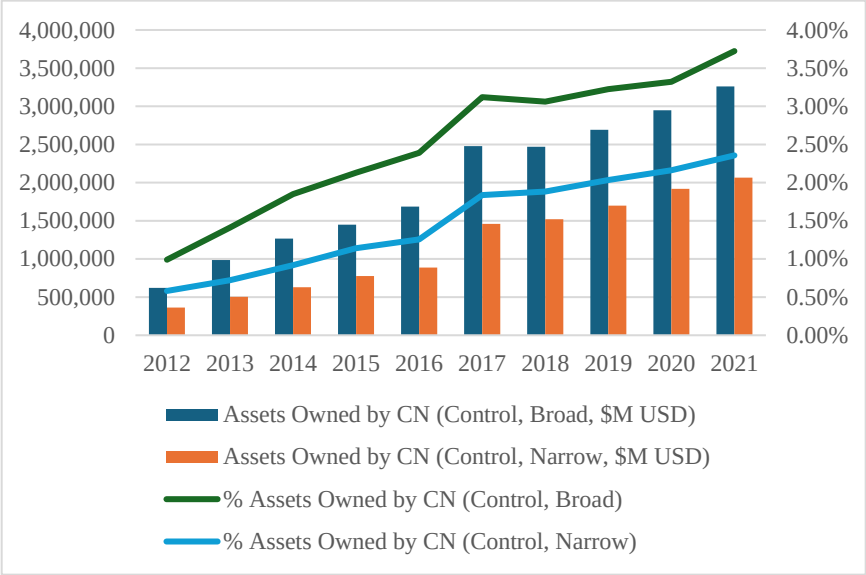
Panel B. The Evolution of the US's Global Ownership



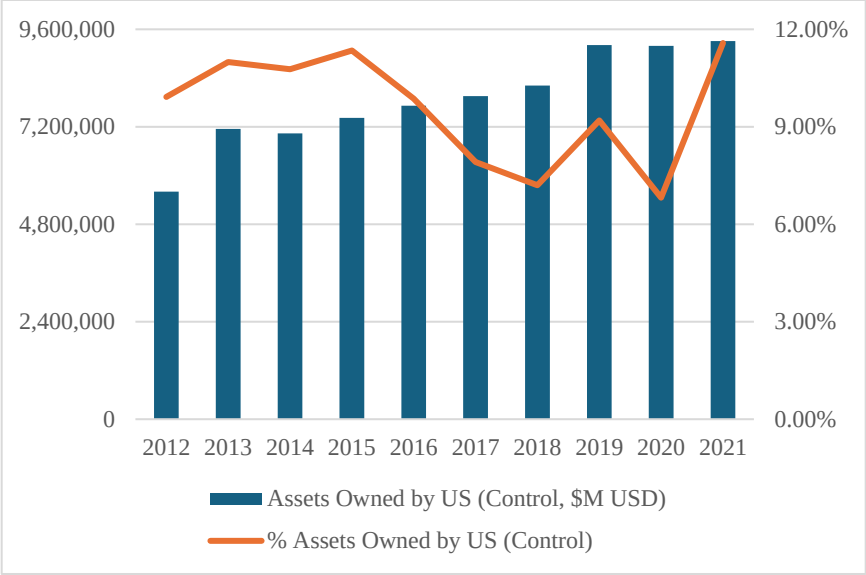
Notes: This figure plots the evolution of global ownership by Chinese and US entities. The data includes non-financial, non-Chinese (non-US) "Very Large" firms from Orbis (2012-2021). Firms based in mainland China, Hong Kong, Macau, or with "golden shares" (firms based in the US) are excluded. Assets are winsorized at the 1st and 99th percentiles and aggregated. CNOwn or USOwn identifies firms whose direct or ultimate shareholders (UO10) are Chinese entities (mainland China, Hong Kong, Macau, or with "golden shares") or US entities. Panel A represents Chinese ownership, and Panel B represents US ownership. Absolute asset values are displayed on the left Y-axis, while the percentages of global control are represented on the right Y-axis.

Figure 2. The Evolution of China's Global Control

Panel A. The Evolution of China's Global Control

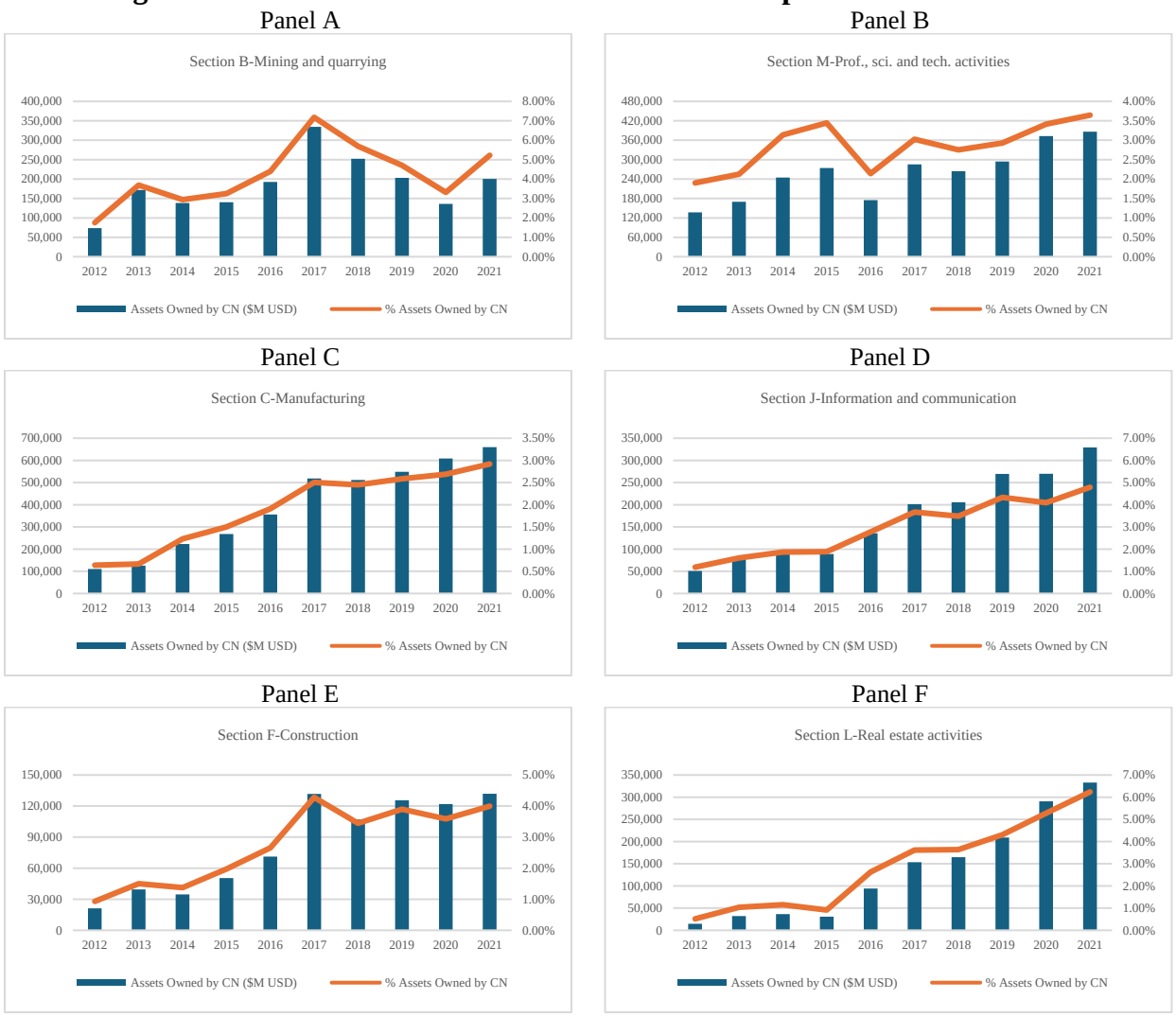


Panel B. The Evolution of the US's Global Control



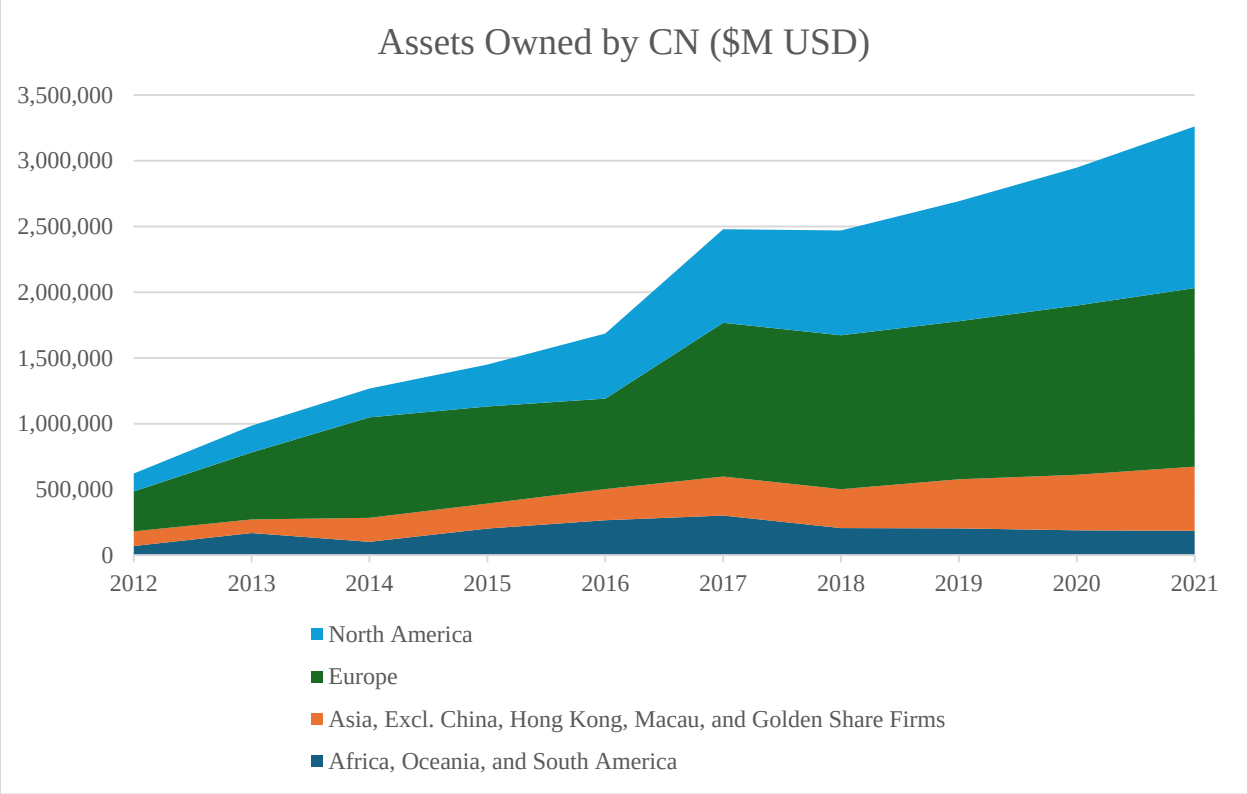
Notes: This figure plots the evolution of global control by Chinese and US entities. The data includes non-financial, non-Chinese (non-US) "Very Large" firms from Orbis (2012-2021). Firms based in mainland China, Hong Kong, Macau, or with "golden shares" (firms based in the US) are excluded. Assets are winsorized at the 1st and 99th percentiles and aggregated. CNOwn or USOwn with control identifies firms whose largest direct shareholders with at least 10% ownership or ultimate shareholders (UO10) are Chinese entities (mainland China, Hong Kong, Macau, or with "golden shares") or US entities. Absolute asset values (million USD) are displayed on the left Y-axis, while the percentages of global control are represented on the right Y-axis.

Figure 3. The Evolution of China's Global Ownership in Selected Industries



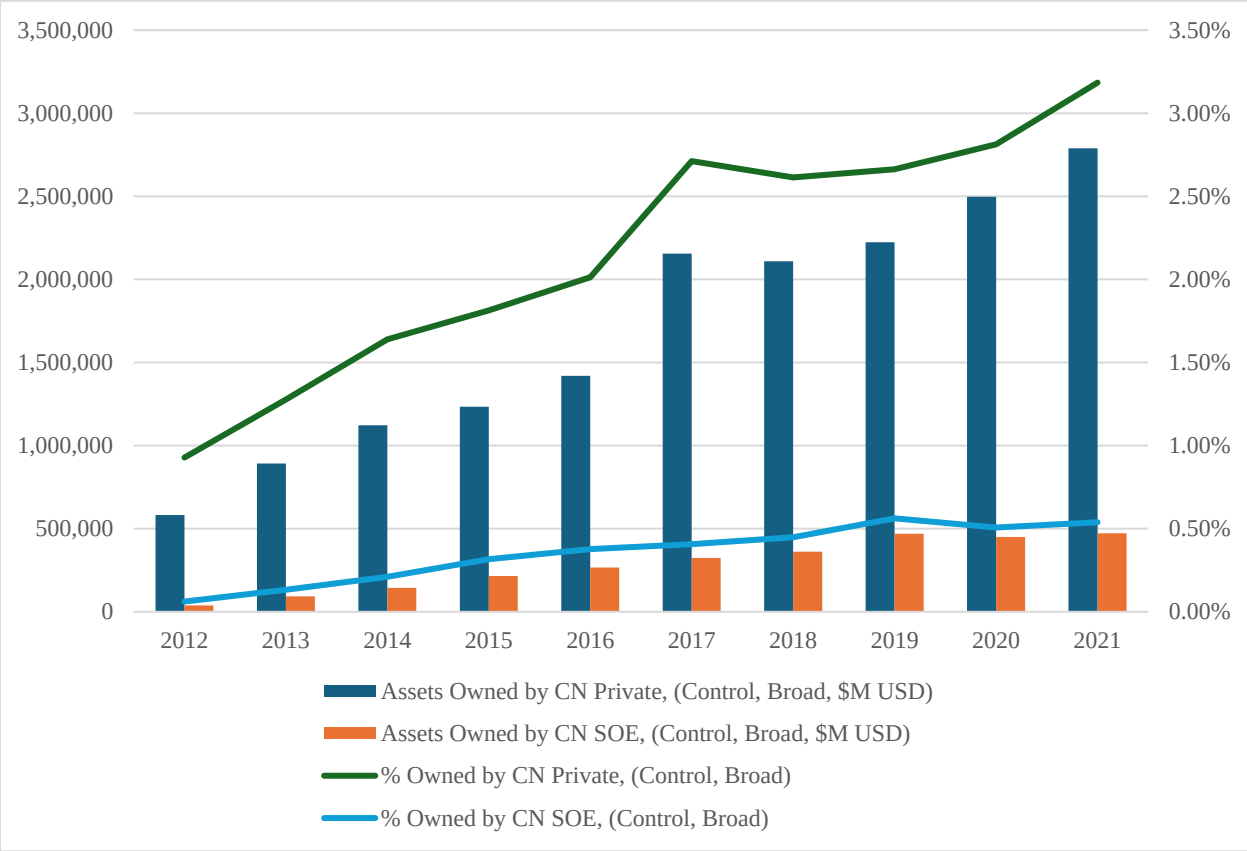
Notes: This figure plots the evolution of China's global ownership across six selected industries: mining and quarrying (Panel A), professional, scientific, and technical activities (Panel B), manufacturing (Panel C), information and communication (Panel D), construction (Panel E), and real estate activities (Panel F). The data includes non-financial, non-Chinese "Very Large" firms from Orbis (2012-2021). Firms based in mainland China, Hong Kong, Macau, or with "golden shares" are excluded. Assets are winsorized at the 1st and 99th percentiles and aggregated within the respective industry. CNOwn with control identifies firms whose largest direct shareholders with at least 10% ownership or ultimate shareholders (UO10) are Chinese entities (mainland China, Hong Kong, Macau, or with "golden shares"). Absolute asset values (million USD) are displayed on the left Y-axis, while the percentages of global control are represented on the right Y-axis.

Figure 4. The Evolution of China's Global Ownership by Region



Notes: This figure plots the evolution of China's global ownership, segmented by world regions. The data includes non-financial, non-Chinese "Very Large" firms from Orbis (2012-2021). Firms based in mainland China, Hong Kong, Macau, or with "golden shares" are excluded. Assets are winsorized at the 1st and 99th percentiles and aggregated within the respective region. CNOwn with control identifies firms whose largest direct shareholders with at least 10% ownership or ultimate shareholders (UO10) are Chinese entities (mainland China, Hong Kong, Macau, or with "golden shares"). The regions analyzed include Asia (excluding China), Europe, North America, and the Rest of the World (Africa, Oceania, and South America). Country classifications by region are detailed in Table A3 of the Appendix. Interpret data for North America cautiously, as Orbis provides complete information predominantly for publicly listed firms in the US and Canada.

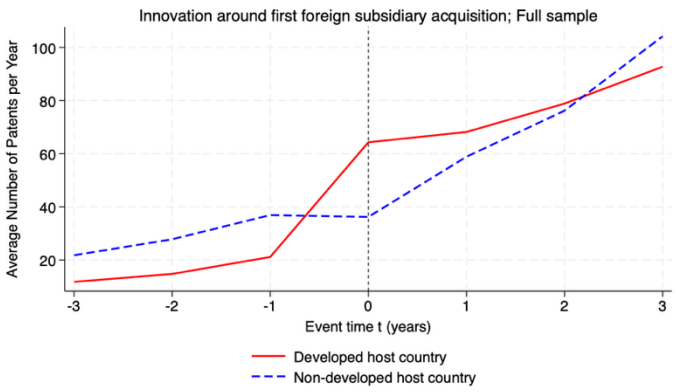
Figure 5. China's Global Control: SOE vs Private



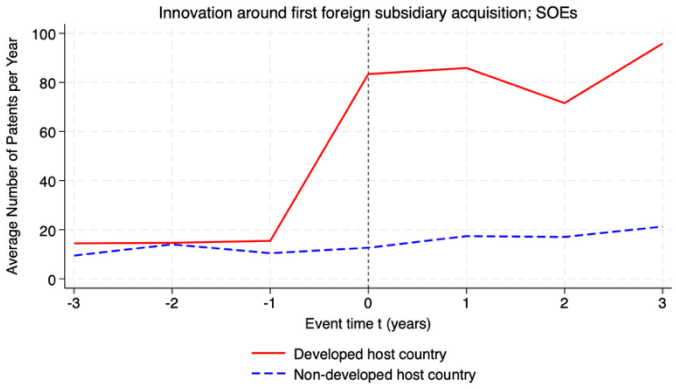
Notes: This figure plots the evolution of China's global ownership, segmented into state-owned enterprises (SOEs) and private firms. The data includes non-financial, non-Chinese "Very Large" firms from Orbis (2012-2021). Firms based in mainland China, Hong Kong, Macau, or with "golden shares" are excluded. Assets are winsorized at the 1st and 99th percentiles and aggregated. CNOwn with control identifies firms whose largest direct shareholders with at least 10% ownership or ultimate shareholders (UO10) are Chinese entities (mainland China, Hong Kong, Macau, or with "golden shares"); CNOwn*SOE with control identifies the largest direct (≥10%) or ultimate ownership by Chinese government entities (UO25); CNOwn*Pvt denotes private Chinese ownership, indicating non-SOE Chinese ownership. Absolute asset values (million USD) are displayed on the left Y-axis, while the percentages of global control are represented on the right Y-axis.

Figure 6. Granted Patents Surrounding Foreign Acquisitions

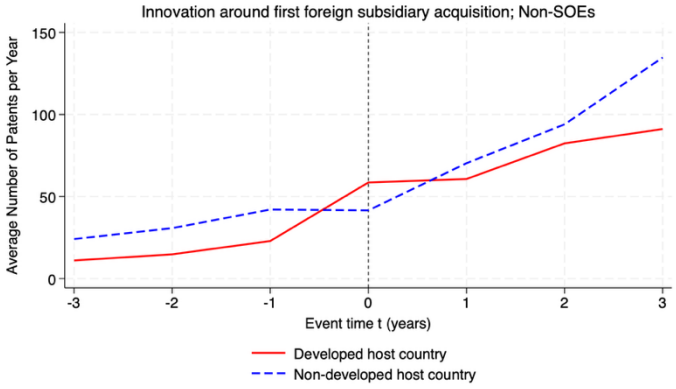
Panel A. Full Sample



Panel B. SOEs



Panel C. Non-SOEs



Notes: This figure plots the evolution of Chinese firms' patenting activities surrounding foreign acquisitions, specifically measuring the number of patents applied for by the firm each year that are eventually granted. The data includes non-financial, Chinese "Very Large" firms from Orbis (2012-2020). We omit patents filed after 2020 to mitigate the right-truncation issue. Chinese firms include firms based in mainland China, Hong Kong, and Macau. Foreign acquisitions are identified using *CNOwn* with control, which identifies firms whose largest direct shareholders with at least 10% ownership or ultimate shareholders (UO10) are Chinese entities. Foreign acquisitions are categorized into those in developed host countries and those in non-developed host countries. Year t0 is the year when the first foreign acquisition in the respective group is made. Panel A reports the pattern for the full sample, Panel B for the SOEs, and Panel C for the non-SOEs.

Appendix

Table A1. Variable definitions.

Variable	Definition
CNOwn, Control, Broad	CNOwn = 1 if one of the firm's direct or ultimate shareholders (i.e., UO10) is a Chinese company and, if there is a direct shareholder, the direct shareholder is also the largest shareholder with at least 10% cashflow rights. Chinese companies include firms incorporated or domiciling in China, Hong Kong, or Macau, as well as golden share firms.
CNOwn, Control, Narrow	CNOwn = 1 if one of the firm's direct or ultimate shareholders (i.e., UO10) is a Chinese company and, if there is a direct shareholder, the direct shareholder is also the largest shareholder with at least 10% cashflow rights. Under the narrow definition, only firms incorporated or domiciling in China are treated as Chinese firms.
CNOwn, Ownership, Broad	CNOwn = 1 if one of the firm's direct or ultimate shareholders (i.e., UO10) is a Chinese company. Chinese companies include firms incorporated or domiciling in China, Hong Kong, or Macau, as well as golden share firms.
CNOwn, Ownership, Narrow	CNOwn = 1 if one of the firm's direct or ultimate shareholders (i.e., UO10) is a Chinese company. Under the narrow definition, only firms incorporated or domiciling in China are treated as Chinese firms.
CNOwn*SOE, Control, Broad	CNOwn*SOE = 1 if one of the firm's direct or ultimate shareholders (i.e., UO25) is a Chinese government agency and, if there is a direct shareholder, the direct shareholder is also the largest shareholder with at least 10% cashflow rights. Chinese government agencies include entities incorporated or domiciling in China and labeled as "Public authority, state, government" by Orbis.
CNOwn*SOE, Control, Narrow	CNOwn*SOE = 1 if one of the firm's direct or ultimate shareholders (i.e., UO25) is a Chinese government agency and, if there is a direct shareholder, the direct shareholder is also the largest shareholder with at least 10% cashflow rights. Under the narrow definition, only firms incorporated or domiciling in China are treated as Chinese firms.
CNOwn*SOE, Ownership, Broad	CNOwn*SOE = 1 if one of the firm's direct or ultimate shareholders (i.e., UO25) is a Chinese government agency. The broad definition includes Hong Kong, Macau, and golden share firms.
CNOwn*SOE, Ownership, Narrow	CNOwn*SOE = 1 if one of the firm's direct or ultimate shareholders (i.e., UO25) is a Chinese government agency. The narrow definition includes only firms incorporated or domiciling in China.
CNOwn*Pvt	CNOwn*Pvt = CNOwn - CNOwn*SOE, under the respective ownership/control and broad/narrow definition.
US_Owned, Control	US_Owned = 1 if one of the firm's direct or ultimate shareholders (i.e., UO10) is a US company and, if there is a direct shareholder, the direct shareholder is the largest shareholder with at least 10% cashflow rights.
US_Owned, Ownership	US_Owned = 1 if one of the firm's direct or ultimate shareholders (i.e., UO10) is a US company.
JP_Owned, Control	JP_Owned = 1 if one of the firm's direct or ultimate shareholders (i.e., UO10) is a Japanese company and, if there is a direct shareholder, the direct shareholder is the largest shareholder with at least 10% cashflow rights.
JP_Owned, Ownership	JP_Owned = 1 if one of the firm's direct or ultimate shareholders (i.e., UO10) is a Japanese company.
IN_Owned, Control	IN_Owned = 1 if one of the firm's direct or ultimate shareholders (i.e., UO10) is an Indian company and, if there is a direct shareholder, the direct shareholder is the largest shareholder with at least 10% cashflow rights.
IN_Owned, Ownership	IN_Owned = 1 if one of the firm's direct or ultimate shareholders (i.e., UO10) is an Indian company.
Log(1+R&D), Dropped if Missing	R&D expenses are winsorized at the 1st and 99th percentiles and log-transformed. R&D is deleted if missing.

Log(1+R&D), R&D=0 if Missing	R&D expenses are winsorized at the 1st and 99th percentiles and log-transformed. R&D is treated as zero if missing.
Blank_R&D	A binary variable that equals one if R&D expenses are not reported for a firm in a given year.
#GrantedPatents	The number of patents the firm applies for in the following three years that are eventually granted. Duplicate applications in multiple jurisdictions are treated as one application, and jointly applied patents are fractionally attributed across firms.
Log(1+Assets)	Total assets are winsorized at the 1st and 99th percentiles and log-transformed.
Log(1+Fixed)	Fixed assets are winsorized at the 1st and 99th percentiles and log-transformed.
Log(1+Debts)	Total debts, defined as the summation of long-term debt, loans, and creditors, are winsorized at the 1st and 99th percentiles and log-transformed.
ROA Using P/L before tax (%)	Return on assets calculated using profit and loss before tax.
Log(1+Empl)	Employment is winsorized at the 1st and 99th percentiles and log-transformed.
Log(1+OpeRev)	Operating revenue is winsorized at the 1st and 99th percentiles and log-transformed. Source: Orbis Financials.
Log(1+Sales)	Sales are winsorized at the 1st and 99th percentiles and log-transformed. Source: Orbis Financials.
CashFlow/Assets	Ratio of cash flow to assets, winsorized at the 1st and 99th percentiles.
P/L/Assets	Profit and loss before tax divided by total assets, winsorized at the 1st and 99th percentiles.
HHI	Herfindahl-Hirschman Index at the country-industry-year level based on firm-level sales.
HHI*HHI	Square of the Herfindahl-Hirschman Index (HHI) at the country-industry-year level based on firm-level sales.
CNCustomer	Equals one if the firm is recorded as a customer of a source company in China (ISIN starts with CN, HK, MO) or a source company with CNOwn = 1 (broad definition and Control), zero if the firm is another country's customer or is not a customer, missing if the firm does not have customer information up to year t, based on FactSet Revere. Customers are firms listed in FactSet as (i) purchasing goods or services from a source company or (ii) to whom a source company licenses products, patents, intellectual property, and technology.
CNSupplier	Equals one if the firm is recorded as a supplier to a source company in China (ISIN starts with CN, HK, MO) or a source company with CNOwn = 1 (broad definition and Control), zero if the firm is another country's supplier or is not a supplier, missing if the firm does not have supplier information up to year t, based on FactSet Revere. Suppliers are firms recorded in FactSet as: (i) selling goods or services to a source company; (ii) providing paid manufacturing services; (iii) offering paid marketing, branding, or advertising services; (iv) receiving payment from a source company for distribution services; or (v) from whom a source company licenses products, patents, intellectual property, or technology.
USCustomer / JPCustomer / INCustomer	Defined as CNCustomer with the source-company country replaced by the US (ISIN starts with US), Japan (JP), or India (IN), and ownership by the respective XX_Owned (Control) flag.
USSupplier / JPSupplier / INSupplier	Defined as CNSupplier with the source-company country replaced by the US (ISIN starts with US), Japan (JP), or India (IN), and ownership by the respective XX_Owned (Control) flag.
Customer	Equals one if the firm is recorded as a customer of a source company, zero if the firm is not a customer, missing if the firm does not have customer information up to year t, based on FactSet Revere.
Supplier	Equals one if the firm is recorded as a supplier to a source company, zero if the firm is not a supplier, missing if the firm does not have supplier information up to year t, based on FactSet Revere.
ln(1+ΣCNOwn*Assets)	CNOwn*Assets = CNOwn x Assets, where Assets are winsorized at the 1st and 99th percentiles; aggregated at the country-sector-year level and log-transformed. Reported for the ownership/control and broad/narrow definitions; ln(1+ΣCNOwn*Pvt*Assets) and ln(1+ΣCNOwn*SOE*Assets) are defined analogously with CNOwn*Pvt and CNOwn*SOE.

%CNOwn*Assets (leave-one-out)	The share of Chinese-controlled assets in the firm's country-sector-year cell, excluding the firm itself: aggregate assets of Chinese-controlled cell firms net of the firm's own assets when Chinese-controlled, divided by aggregate cell assets net of the firm's own assets. The private and state-owned components are winsorized at the 1st and 99th percentiles and summed (control definition, broad, 10%+).
Log(1+∑Assets)	Total assets are aggregated at the country-sector-year level and log-transformed. Source: Orbis Financials.
Log(1+∑Fixed)	Fixed assets are aggregated at the country-sector-year level and log-transformed. Source: Orbis Financials.
Log(1+∑Debts)	Total debts (long-term debt, loans, and creditors) are aggregated at the country-sector-year level and log-transformed. Source: Orbis Financials.
Log(1+∑R&D)	R&D expenses are treated as zero if missing, aggregated at the country-sector-year level, and log-transformed. Source: Orbis Financials.
Log(1+∑Sales)	Sales are aggregated at the country-sector-year level and log-transformed. Source: Orbis Financials.
Log(1+∑EMPL)	Employment is aggregated at the country-sector-year level and log-transformed. Source: Orbis Financials.
Log(1+∑Assets_NonCN)	Total assets of firms not owned by any Chinese entity up to and including year t, aggregated at the country-sector-year level, winsorized at the 1st and 99th percentiles, and log-transformed. Source: Orbis Financials.
II_CN/II	Intermediate inputs from Chinese industries over the total intermediate inputs for each country-sector-year. Source: OECD Input-Output Tables.
IO_CN/IO	Intermediate outputs to Chinese industries over the total intermediate outputs for each country-sector-year. Source: OECD Input-Output Tables.
Nature_Resources_Rent_Country	Natural resource rents as a percentage of GDP for each country-year. Source: World Bank.
Agriculture, hunting, forestry (indicator)	Equals one if the industry's 2-digit ISIC Rev. 4 code is 01 or 02.
Mining&quarrying - energy (indicator)	Equals one if the industry's 2-digit ISIC Rev. 4 code is 05 or 06.
Mining&quarrying - non-energy (indicator)	Equals one if the industry's 2-digit ISIC Rev. 4 code is 07 or 08.
Mining support service activities (indicator)	Equals one if the industry's 2-digit ISIC Rev. 4 code is 09.
Intensity (MIC2025)	Categorical policy-intensity tier (0-3) assigned ex ante to each NACE Rev. 2 sector covered by Made in China 2025, based on the policy documents and implementation plans; zero for uncovered sectors. Sector assignments and tiers are listed in Table A2.
ForeignSub	Equals one for a Chinese parent from the year of its first foreign subsidiary onward (spillback analysis, Table 14).
OwnLink	Equals one for a parent-target dyad with an ownership link.

Table A2. NACE Rev. 2 sectors targeted by "Made in China 2025" (MIC2025).

MIC Targeted Sector	NACE Rev2	Name	Description	Intensity	Intensity rationale
Advanced rail equipment	302	Railway locomotives and rolling stock	Direct match to advanced rail equipment priority.	1	Named priority consolidating an established national strength; qualitative upgrading goals.
Aerospace & aviation equipment	265	Instruments for measuring, testing & navigation; watches & clocks	Precision instruments and navigation systems essential to avionics & aerospace.	1	Named priority consolidating an established national strength; qualitative upgrading goals.
	303	Air & spacecraft and related machinery	Direct match to aerospace & aviation equipment priority (incl. space).		
	613	Satellite telecommunications activities	Space-based comms rely on spacecraft; downstream of aerospace priority.		
Agricultural machinery & equipment	283	Agricultural and forestry machinery	Direct match to agricultural machinery priority.	1	Named priority; qualitative modernization goals.
Biomedicine & high-performance medical devices	211	Basic pharmaceutical products	Upstream pharma inputs for domestic biomedicine value chain.	2	Priority chapter with substantial supporting programs; targets broader and less quantified than tier 3.
	212	Pharmaceutical preparations	Drug manufacturing—core to biomedicine push.		
	266	Irradiation, electromedical & electrotherapeutic equipment	Electromedical imaging/therapy devices—explicit MIC medical device focus.		
	267	Optical instruments & photographic equipment	Optics for endoscopy, diagnostics and precision instruments.		
	325	Medical and dental instruments & supplies	Medical instruments & disposables—part of high-performance medical devices.		
	861	Hospital activities	Clinical demand-pull and deployment site for advanced medical devices.		
	862	Medical and dental practice activities	Physician/dental users & buyers of domestic medical devices.		
	869	Other human health activities	Other healthcare services using diagnostics & devices.		
Electrical equipment (power equipment & smart grid)	252	Tanks, reservoirs & containers of metal	Pressure vessels & large metal containers used in power/energy plant equipment.	2	Priority chapter with substantial supporting programs; targets broader and less quantified than tier 3.
	253	Steam generators, except central heating hot-water boilers	Boilers/steam generators are key balance-of-plant for power equipment.		
	271	Electric motors, generators, transformers &	Motors/transformers/switchgear for smart grid and advanced equipment.		

		distribution/control apparatus			
	272	Batteries and accumulators	Batteries—core to NEVs, grid storage and electronics.		
	273	Wiring and wiring devices	Cables & wiring devices for grid, rail, aerospace and factories.		
	274	Electric lighting equipment	Lighting (including LED) is part of efficient electrical equipment.		
	279	Other electrical equipment	Power equipment sub-systems not elsewhere classified.		
	351	Electric power generation, transmission & distribution	Grid operations that drive/absorb domestic power-equipment innovation (UHV, smart grid).		
	352	Manufacture of gas; distribution of gaseous fuels via mains	Gas infrastructure complements energy equipment & industrial efficiency goals.		
	353	Steam and air conditioning supply	Thermal/steam utilities linked to industrial energy efficiency and CHP equipment.		
Energy-saving & new-energy vehicles (NEVs)	291	Motor vehicles	Vehicle platforms targeted for electrification & efficiency (NEVs).	3	Flagship priority; dedicated implementation plans with quantified 2025 output and domestic-share targets.
	292	Bodies (coachwork) for motor vehicles; trailers & semi-trailers	Bodies/trailers integrate lightweight materials & EV platforms.		
	293	Parts and accessories for motor vehicles	Domestic auto parts capability incl. e-drive, power electronics.		
	309	Other transport equipment n.e.c. (incl. motorcycles, bicycles)	Two-wheelers & other transport moving to electrification (NEVs ecosystem).		
High-end numerically controlled (NC) machine tools & robots	281	General-purpose machinery	General machinery base for upgrading to high-end NC equipment.	3	Flagship priority; dedicated robotics and machine-tool implementation plans with quantified domestic-share targets.
	282	Other general-purpose machinery	Other general-purpose machinery used across automated production lines.		
	284	Metal forming machinery & machine tools	Direct match to high-end NC machine tools; foundation of smart manufacturing.		
	289	Other special-purpose machinery	Robotics and special-purpose machinery fit the NC tools & robots priority.		

Maritime engineering equipment & high-tech ships	301	Building of ships and boats	High-tech ships & offshore engineering equipment are an explicit priority.	1	Named priority consolidating an established national strength; qualitative upgrading goals.
New materials	201	Basic chemicals, fertilisers, plastics & synthetic rubber (primary forms)	Feeds advanced materials (polymers, basic chemicals) for composites, semiconductors & batteries.	2	Priority chapter with substantial supporting programs; targets broader and less quantified than tier 3.
	205	Other chemical products	Speciality chemicals (e.g., additives, electrolytes) underpin new materials and devices.		
	206	Man-made fibres	High-performance fibres for aerospace, rail, autos and protective equipment.		
	231	Glass and glass products	Technical glass (e.g., display, optical, PV) is a priority new material.		
	232	Refractory products	Advanced refractories for high-temp processes in steel, glass, energy equipment.		
	233	Clay building materials	Engineered ceramics/bricks relevant for new-material and green construction technologies.		
	234	Other porcelain and ceramic products	Technical ceramics for electronics, medical devices, energy equipment.		
	235	Cement, lime and plaster	Cement/lime/plaster—materials platform; target is high-performance & green variants.		
	236	Articles of concrete, cement and plaster	Pre-cast/engineered articles tie to high-performance materials and smart construction.		
	239	Abrasive products & other non-metallic mineral products n.e.c.	Abrasives & other mineral materials used in polishing, batteries, electronics.		
	244	Basic precious & other non-ferrous metals	Non-ferrous metals (e.g., Al, Cu, Ti) critical for aerospace, NEVs, grid equipment.		
	721	R&D on natural sciences & engineering	R&D on materials & engineering feeding semiconductors, composites, batteries.		
New-generation information technology	261	Electronic components and boards	Chips & components—backbone of next-gen IT and smart manufacturing.	3	Flagship priority; dedicated national programs (semiconductors, 5G, industrial internet) with quantified localization targets.
	262	Computers and peripheral equipment	Computing hardware platform for digital manufacturing & AI.		
	263	Communication equipment	Telecom gear integral to 5G/industrial internet.		

	582	Software publishing	Domestic software ecosystems/platforms for industrial digitalization.		
	611	Wired telecommunications activities	Fixed/fibre networks (backbone & access) enabling industrial internet and cloud/edge connectivity.		
	612	Wireless telecommunications activities	Mobile networks (4G/5G/6G) enabling industrial IoT, smart manufacturing and V2X for NEVs.		
	619	Other telecommunications activities	Specialized telecom services (e.g., internet access, VoIP, private networks, MVNO); supports industrial internet and IIoT.		
	620	Computer programming, consultancy & related activities	Software & IT services enabling industrial internet and AI applications.		
	631	Data processing, hosting & related activities; web portals	Cloud/data infrastructure supporting smart manufacturing.		

Table A3. List of regions.

Notes: AF - Africa, AN - Antarctica, AS - Asia, OC - Oceania, EU - Europe, NA - North America, SA - South America. The list of tax havens comes from Coppola et al. (2021) with the addition of Switzerland (https://globalcapitalallocation.s3.us-east-2.amazonaws.com/CMNS-Appendix.pdf).

Continent	ISO 2	Name	IsTaxHaven
AF	DZ	Algeria	0
AF	AO	Angola	0
AF	BJ	Benin	0
AF	BW	Botswana	0
AF	BF	Burkina Faso	0
AF	BI	Burundi	0
AF	CM	Cameroon	0
AF	CV	Cape Verde	0
AF	CF	Central African Republic	0
AF	TD	Chad	0
AF	KM	Comoros	0
AF	CG	Congo	0
AF	CD	Congo, the Democratic Republic of the	0
AF	CI	Côte d'Ivoire	0
AF	DJ	Djibouti	1
AF	EG	Egypt	0
AF	GQ	Equatorial Guinea	0
AF	ER	Eritrea	0
AF	ET	Ethiopia	0
AF	GA	Gabon	0
AF	GM	Gambia	0
AF	GH	Ghana	0
AF	GN	Guinea	0
AF	GW	Guinea-Bissau	0
AF	KE	Kenya	0
AF	LS	Lesotho	0
AF	LR	Liberia	1
AF	LY	Libyan Arab Jamahiriya	0
AF	MG	Madagascar	0
AF	MW	Malawi	0
AF	ML	Mali	0
AF	MR	Mauritania	0
AF	MU	Mauritius	1
AF	YT	Mayotte	0
AF	MA	Morocco	0
AF	MZ	Mozambique	0
AF	NA	Namibia	0
AF	NE	Niger	0
AF	NG	Nigeria	0
AF	RE	Réunion	0
AF	RW	Rwanda	0
AF	SH	Saint Helena	0
AF	ST	Sao Tome and Principe	0
AF	SN	Senegal	0
AF	SC	Seychelles	1
AF	SL	Sierra Leone	0
AF	SO	Somalia	0
AF	ZA	South Africa	0

AF	SS	South Sudan	0
AF	SD	Sudan	0
AF	SZ	Swaziland	0
AF	TZ	Tanzania, United Republic of	0
AF	TG	Togo	0
AF	TN	Tunisia	0
AF	UG	Uganda	0
AF	EH	Western Sahara	0
AF	ZM	Zambia	0
AF	ZW	Zimbabwe	0
AN	AQ	Antarctica	0
AN	BV	Bouvet Island	0
AN	TF	French Southern Territories	0
AN	HM	Heard Island and McDonald Islands	0
AN	GS	South Georgia and the South Sandwich Islands	0
AS	AF	Afghanistan	0
AS	AM	Armenia	0
AS	AZ	Azerbaijan	0
AS	BH	Bahrain	1
AS	BD	Bangladesh	0
AS	BT	Bhutan	0
AS	IO	British Indian Ocean Territory	0
AS	BN	Brunei Darussalam	0
AS	KH	Cambodia	0
AS	CN	China	0
AS	CX	Christmas Island	0
AS	CC	Cocos (Keeling) Islands	0
AS	CY	Cyprus	1
AS	GE	Georgia	0
AS	HK	Hong Kong	1
AS	IN	India	0
AS	ID	Indonesia	0
AS	IR	Iran, Islamic Republic of	0
AS	IQ	Iraq	0
AS	IL	Israel	0
AS	JP	Japan	0
AS	JO	Jordan	1
AS	KZ	Kazakhstan	0
AS	KP	Korea, Democratic People's Republic of	0
AS	KR	Korea, Republic of	0
AS	KW	Kuwait	0
AS	KG	Kyrgyzstan	0
AS	LA	Lao People's Democratic Republic	0
AS	LB	Lebanon	1
AS	MO	Macao	1
AS	MY	Malaysia	0
AS	MV	Maldives	1
AS	MN	Mongolia	0
AS	MM	Myanmar	0
AS	NP	Nepal	0
AS	OM	Oman	0
AS	PK	Pakistan	0
AS	PS	Palestinian Territory, Occupied	0

AS	PH	Philippines	0
AS	QA	Qatar	0
AS	SA	Saudi Arabia	0
AS	SG	Singapore	1
AS	LK	Sri Lanka	0
AS	SY	Syrian Arab Republic	0
AS	TW	Taiwan, Province of China	0
AS	TJ	Tajikistan	0
AS	TH	Thailand	0
AS	TL	Timor-Leste	0
AS	TM	Turkmenistan	0
AS	AE	United Arab Emirates	0
AS	UZ	Uzbekistan	0
AS	VN	Vietnam	0
AS	YE	Yemen	0
EU	AX	Åland Islands	0
EU	AL	Albania	0
EU	AD	Andorra	1
EU	AT	Austria	0
EU	BY	Belarus	0
EU	BE	Belgium	0
EU	BA	Bosnia and Herzegovina	0
EU	BG	Bulgaria	0
EU	HR	Croatia	0
EU	CZ	Czech Republic	0
EU	DK	Denmark	0
EU	EE	Estonia	0
EU	FO	Faroe Islands	0
EU	FI	Finland	0
EU	FR	France	0
EU	DE	Germany	0
EU	GI	Gibraltar	1
EU	GR	Greece	0
EU	GG	Guernsey	1
EU	VA	Holy See (Vatican City State)	0
EU	HU	Hungary	0
EU	IS	Iceland	0
EU	IE	Ireland	1
EU	IM	Isle of Man	1
EU	IT	Italy	0
EU	JE	Jersey	1
EU	LV	Latvia	0
EU	LI	Liechtenstein	1
EU	LT	Lithuania	0
EU	LU	Luxembourg	1
EU	MK	Macedonia, the Former Yugoslav Republic of	0
EU	MT	Malta	1
EU	MD	Moldova, Republic of	0
EU	MC	Monaco	1
EU	ME	Montenegro	0
EU	NL	Netherlands	1
EU	NO	Norway	0
EU	PL	Poland	0

EU	PT	Portugal	0
EU	RO	Romania	0
EU	RU	Russian Federation	0
EU	SM	San Marino	1
EU	RS	Serbia	0
EU	SK	Slovakia	0
EU	SI	Slovenia	0
EU	ES	Spain	0
EU	SJ	Svalbard and Jan Mayen	0
EU	SE	Sweden	0
EU	CH	Switzerland	1
EU	TR	Turkey	0
EU	UA	Ukraine	0
EU	GB	United Kingdom	0
NA	AI	Anguilla	1
NA	AG	Antigua and Barbuda	1
NA	AW	Aruba	1
NA	BS	Bahamas	1
NA	BB	Barbados	1
NA	BZ	Belize	1
NA	BM	Bermuda	1
NA	BQ	Bonaire, Sint Eustatius and Saba	0
NA	CA	Canada	0
NA	KY	Cayman Islands	1
NA	CR	Costa Rica	1
NA	CU	Cuba	0
NA	CW	Curaçao	1
NA	DM	Dominica	1
NA	DO	Dominican Republic	0
NA	SV	El Salvador	0
NA	GL	Greenland	0
NA	GD	Grenada	1
NA	GP	Guadeloupe	0
NA	GT	Guatemala	0
NA	HT	Haiti	0
NA	HN	Honduras	0
NA	JM	Jamaica	0
NA	MQ	Martinique	0
NA	MX	Mexico	0
NA	MS	Montserrat	1
NA	NI	Nicaragua	0
NA	PA	Panama	1
NA	PR	Puerto Rico	0
NA	BL	Saint Barthélemy	0
NA	KN	Saint Kitts and Nevis	1
NA	LC	Saint Lucia	1
NA	MF	Saint Martin (French part)	1
NA	PM	Saint Pierre and Miquelon	0
NA	VC	Saint Vincent and the Grenadines	1
NA	SX	Sint Maarten (Dutch part)	0
NA	TT	Trinidad and Tobago	0
NA	TC	Turks and Caicos Islands	1
NA	US	United States	0

NA	VG	Virgin Islands, British	1
NA	VI	Virgin Islands, U.S.	0
OC	AS	American Samoa	0
OC	AU	Australia	0
OC	CK	Cook Islands	1
OC	FJ	Fiji	0
OC	PF	French Polynesia	0
OC	GU	Guam	0
OC	KI	Kiribati	0
OC	MH	Marshall Islands	1
OC	FM	Micronesia, Federated States of	1
OC	NR	Nauru	1
OC	NC	New Caledonia	0
OC	NZ	New Zealand	0
OC	NU	Niue	1
OC	NF	Norfolk Island	0
OC	MP	Northern Mariana Islands	0
OC	PW	Palau	0
OC	PG	Papua New Guinea	0
OC	PN	Pitcairn	0
OC	WS	Samoa	1
OC	SB	Solomon Islands	0
OC	TK	Tokelau	0
OC	TO	Tonga	1
OC	TV	Tuvalu	0
OC	UM	United States Minor Outlying Islands	0
OC	VU	Vanuatu	1
OC	WF	Wallis and Futuna	0
SA	AR	Argentina	0
SA	BO	Bolivia	0
SA	BR	Brazil	0
SA	CL	Chile	0
SA	CO	Colombia	0
SA	EC	Ecuador	0
SA	FK	Falkland Islands (Malvinas)	0
SA	GF	French Guiana	0
SA	GY	Guyana	0
SA	PY	Paraguay	0
SA	PE	Peru	0
SA	SR	Suriname	0
SA	UY	Uruguay	0
SA	VE	Venezuela	0

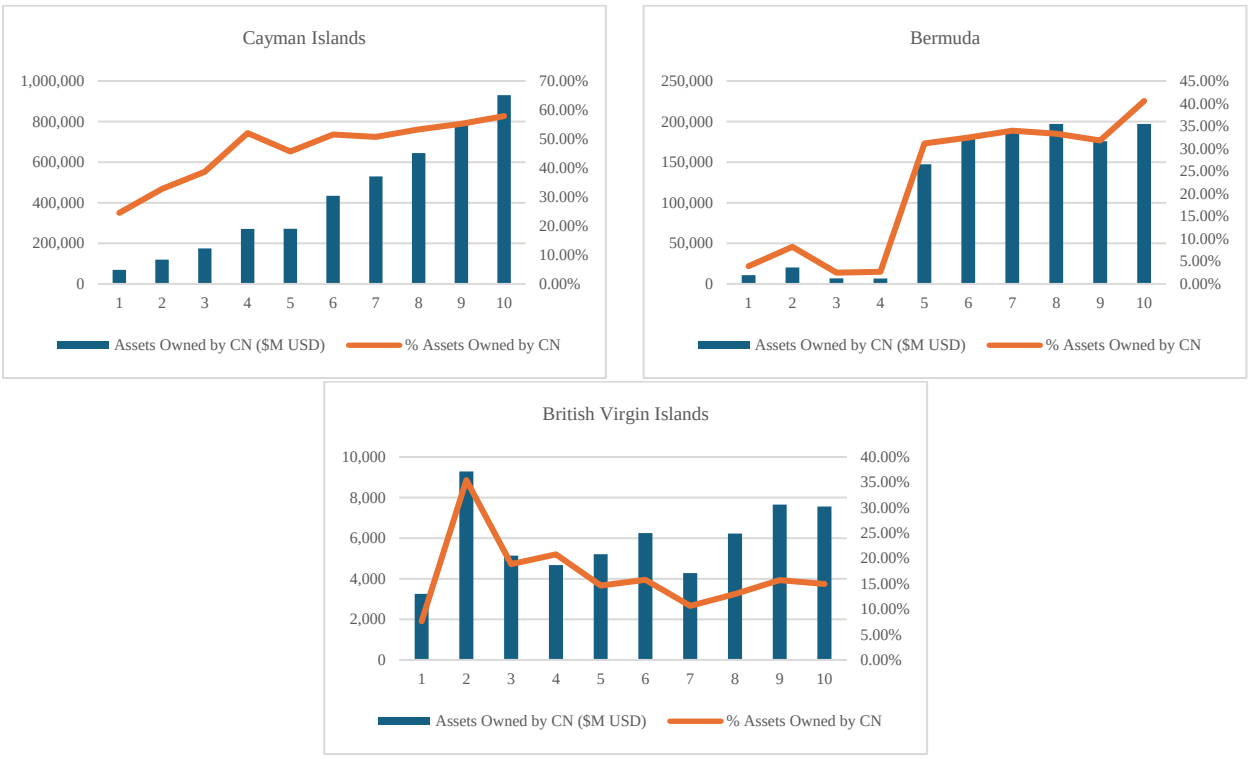
Table A4. List of developed countries and emerging markets.

Developed Countries		Emerging Markets	
EU's List	**ISO2**	**EU's List**	**ISO2**
Belgium	BE	Algeria	DZ
Bulgaria	BG	Egypt	EG
Czechia	CZ	Libya	LY
Denmark	DK	Mauritania	MR
Germany	DE	Morocco	MA
Estonia	EE	Sudan	SD
Ireland	IE	Tunisia	TN
Greece	EL	Cameroon	CM
Spain	ES	Central African Republic	CF
France	FR	Chad	TD
Croatia	HR	Congo	CG
Italy	IT	Equatorial Guinea	GQ
Cyprus	CY	Gabon	GA
Latvia	LV	Sao Tome and Principe	ST
Lithuania	LT	Burundi	BI
Luxembourg	LU	Comoros	KM
Hungary	HU	Democratic Republic of the Congo	CD
Malta	MT	Djibouti	DJ
Netherlands	NL	Eritrea	ER
Austria	AT	Ethiopia	ET
Poland	PL	Kenya	KE
Portugal	PT	Madagascar	MG
Romania	RO	Rwanda	RW
Slovenia	SI	Somalia	SO
Slovakia	SK	Uganda	UG
Finland	FI	United Republic of Tanzania	TZ
Sweden	SE	Angola	AO
Iceland	IS	Botswana	BW
Norway	NO	Lesotho	LS
Switzerland	CH	Malawi	MW
Australia	AU	Mauritius	MU
Canada	CA	Mozambique	MZ
Japan	JP	Namibia	NA
New Zealand	NZ	South Africa	ZA
United States	US	Zambia	ZM
France	FR	Zimbabwe	ZW
Germany	DE	Benin	BJ
Italy	IT	Burkina Faso	BF
United Kingdom	GB	Cabo Verde	CV
		Cote d'lvoire	CI
Additional		Gambia	GM
Singapore	SG	Ghana	GH
Korea	KR	Guinea	GN
Taiwan	TW	Guinea-Bissau	GW
		Liberia	LR
		Mali	ML

Niger	NE
Nigeria	NG
Senegal	SN
Sierra Leone	SL
Togo	TG
Brunei Darussalam	BN
Indonesia	ID
Malaysia	MY
Myanmar	MM
Papua New Guinea	PG
Philippines	PH
Thailand	TH
Viet Nam	VN
Bangladesh	BD
India	IN
Iran (Islamic Republic of)	IR
Nepal	NP
Pakistan	PK
Sri Lanka	LK
Bahrain	BH
Iraq	IQ
Israel	IL
Jordan	JO
Kuwait	KW
Lebanon	LB
Oman	OM
Qatar	QA
Saudi Arabia	SA
Syrian Arab Republic	SY
Turkey	TR
United Arab Emirates	AE
Yemen	YE
Barbados	BB
Cuba	CU
Dominican Republic	DO
Guyana	GY
Haiti	HT
Jamaica	JM
Trinidad and Tobago	TT
Costa Rica	CR
El Salvador	SV
Guatemala	GT
Honduras	HN
Mexico	MX
Nicaragua	NI
Panama	PA
Argentina	AR
Bolivia (Plurinational State of)	BO
Brazil	BR

Chile	CL
Colombia	CO
Ecuador	EC
Paraguay	PY
Peru	PE
Uruguay	UY
Venezuela (Bolivarian Republic of)	VE
Excluded	
China	CN
Hong Kong SAR	HK
Republic of Korea	KR
Singapore	SG
Taiwan	TW

Figure A1. China's Ownership in Selected Tax Havens



Notes: This figure plots the evolution of China's global ownership in the following three tax havens: Cayman Islands, Bermuda, and British Virgin Islands. The data includes non-financial, non-Chinese "Very Large" firms from Orbis (2012–2021). Firms based in mainland China, Hong Kong, Macau, or with "golden shares" are excluded. Assets are winsorized at the 1st and 99th percentiles and aggregated within the respective tax haven. CNOwn with control identifies firms whose largest direct shareholders with at least 10% ownership or ultimate shareholders (UO10) are Chinese entities (mainland China, Hong Kong, Macau, or with "golden shares"). Absolute asset values (million USD) are displayed on the left Y-axis, while the percentages of global control are represented on the right Y-axis.

Table B1. China's Ownership and Innovation, R&D Deleted if Missing

Note: This table presents OLS regression analyses examining the relationship between Chinese ownership and firm-level innovation, measured by the logarithm of non-missing R&D expenditures. CNOwn identifies firms whose direct or ultimate shareholders (UO10) are Chinese entities; CNOwn*SOE identifies direct or ultimate ownership by Chinese government entities (UO25). With control, Chinese entities must be the largest direct shareholders with at least 10% ownership or ultimate shareholders. The narrow definition includes entities in mainland China, while the broad definition includes entities in mainland China, Hong Kong, Macau, or with "golden shares." Control variables are detailed in Table A1 of the Appendix. The sample covers the period from 2012 to 2021. Standard errors clustered at the firm level are in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: Overall

	Ownership				Control			
	Narrow		Broad		Narrow		Broad	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Log(1+R&D)							
CNOwn	0.165**	0.211*	0.119**	0.171**	0.267***	0.381***	0.174***	0.228**
	(0.079)	(0.108)	(0.049)	(0.078)	(0.095)	(0.130)	(0.065)	(0.101)
Log(1+Assets)		0.289***		0.289***		0.289***		0.289***
		(0.039)		(0.039)		(0.039)		(0.039)
Log(1+Fixed)		-0.004		-0.003		-0.005		-0.003
		(0.021)		(0.021)		(0.021)		(0.021)
Log(1+Debts)		0.004		0.004		0.004		0.004
		(0.007)		(0.007)		(0.007)		(0.007)
Log(1+Sales)		-0.037***		-0.037***		-0.037***		-0.037***
		(0.008)		(0.008)		(0.008)		(0.008)
Log(1+Empl)		0.349***		0.348***		0.349***		0.349***
		(0.039)		(0.039)		(0.039)		(0.039)
Log(1+OpeRev)		0.088***		0.088***		0.088***		0.088***
		(0.018)		(0.018)		(0.018)		(0.018)
ROA		-0.006**		-0.006**		-0.006**		-0.006**
		(0.002)		(0.002)		(0.002)		(0.002)
PL/Assets		0.103		0.104		0.105		0.109
		(0.376)		(0.376)		(0.376)		(0.376)
CashFlow/Assets		-0.098		-0.095		-0.096		-0.097
		(0.266)		(0.267)		(0.266)		(0.266)
HHI		-0.269		-0.270		-0.254		-0.265
		(0.405)		(0.405)		(0.405)		(0.405)
HHI*HHI		0.220		0.219		0.217		0.218
		(0.392)		(0.392)		(0.391)		(0.392)
Constant	6.012***	0.122	6.010***	0.111	6.011***	0.124	6.010***	0.111
	(0.002)	(0.546)	(0.002)	(0.545)	(0.002)	(0.546)	(0.002)	(0.545)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	198,969	75,497	198,969	75,497	198,969	75,497	198,969	75,497
R-squared	0.958	0.975	0.958	0.975	0.958	0.975	0.958	0.975

Panel B: SOE versus Private

	Ownership (Broad)			Control (Broad)		
	All	Developed	Emerging	All	Developed	Emerging
	(1)	(2)	(3)	(4)	(5)	(6)
			Log(1+R&D)			
CNOwn	0.149*	-0.022	0.109	0.193*	-0.257	0.281
	(0.078)	(0.124)	(0.114)	(0.101)	(0.157)	(0.204)
CNOwn*SOE	1.424**	4.727*	0.078	1.386**	4.798*	-0.032
	(0.611)	(2.735)	(0.105)	(0.614)	(2.726)	(0.160)
Log(1+Assets)	0.288***	0.430***	0.167**	0.288***	0.430***	0.167**
	(0.039)	(0.047)	(0.072)	(0.039)	(0.047)	(0.072)
Log(1+Fixed)	-0.003	-0.046*	-0.042	-0.004	-0.046*	-0.042
	(0.021)	(0.024)	(0.035)	(0.021)	(0.024)	(0.035)
Log(1+Debts)	0.004	-0.002	0.007	0.004	-0.002	0.007
	(0.007)	(0.007)	(0.020)	(0.007)	(0.007)	(0.020)
Log(1+Sales)	-0.038***	-0.029	-0.011	-0.038***	-0.029	-0.011
	(0.008)	(0.025)	(0.008)	(0.008)	(0.025)	(0.008)
Log(1+Empl)	0.348***	0.444***	0.172***	0.348***	0.443***	0.172***
	(0.039)	(0.053)	(0.052)	(0.039)	(0.053)	(0.052)
Log(1+OpeRev)	0.090***	0.100***	-0.003	0.090***	0.100***	-0.003
	(0.018)	(0.028)	(0.044)	(0.018)	(0.028)	(0.044)
ROA	-0.006**	-0.006***	0.007	-0.006**	-0.006***	0.007
	(0.002)	(0.002)	(0.007)	(0.002)	(0.002)	(0.007)
PL/Assets	0.096	0.308	-2.243*	0.100	0.307	-2.241*
	(0.376)	(0.437)	(1.163)	(0.376)	(0.437)	(1.163)
CashFlow/Assets	-0.086	-0.403	0.862	-0.088	-0.404	0.870
	(0.267)	(0.318)	(0.832)	(0.266)	(0.319)	(0.832)
HHI	-0.285	0.286	-0.655	-0.281	0.285	-0.662
	(0.405)	(0.550)	(0.547)	(0.405)	(0.549)	(0.547)
HHI*HHI	0.240	-0.531	0.524	0.238	-0.527	0.530
	(0.391)	(0.681)	(0.481)	(0.391)	(0.681)	(0.481)
Constant	0.145	1.739**	-1.961**	0.144	1.740**	-1.969**
	(0.545)	(0.722)	(0.833)	(0.545)	(0.722)	(0.834)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	75,497	43,932	23,454	75,497	43,932	23,454
R-squared	0.975	0.969	0.901	0.975	0.969	0.901

Table B2. China's Ownership and Innovation, Alternative Fixed Effects

Note: This table presents OLS regression analyses examining the relationship between Chinese ownership and firm-level innovation, measured by the logarithm of R&D expenditures. Missing R&D expenditures are treated as zero and indicated by Blank_R&D. CNOwn with control identifies firms whose largest direct shareholders with at least 10% ownership or ultimate shareholders (UO10) are Chinese entities (mainland China, Hong Kong, Macau, or with "golden shares"); CNOwn*SOE with control identifies the largest direct (≥10%) or ultimate ownership by Chinese government entities (UO25). Control variables are detailed in Table A1 of the Appendix. The sample covers the period from 2012 to 2021. Standard errors clustered at the firm level are in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

	Control (Broad)		Control (Broad)		Control (Broad)	
	(1)	(2)	(3)	(4)	(5)	(6)
			Log(1+R&D)			
CNOwn	0.026	0.003	0.089*	0.066	0.025	0.002
	(0.045)	(0.048)	(0.050)	(0.052)	(0.045)	(0.048)
CNOwn*SOE		0.289**		0.301**		0.291**
		(0.135)		(0.143)		(0.137)
Log(1+Assets)	0.072***	0.072***	0.070***	0.070***	0.069***	0.069***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Log(1+Fixed)	-0.001	-0.001	0.005	0.005	-0.001	-0.001
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Log(1+Debts)	0.000	0.000	0.001	0.001	0.000	0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Log(1+Sales)	-0.000	-0.000	-0.000	-0.000	0.000	-0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Log(1+Empl)	0.074***	0.074***	0.061***	0.061***	0.072***	0.072***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Log(1+OpeRev)	0.030***	0.029***	0.034***	0.034***	0.029***	0.028***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
ROA	-0.001**	-0.001**	-0.001***	-0.001***	-0.001*	-0.001*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PL/Assets	0.046	0.045	-0.009	-0.010	0.053	0.052
	(0.105)	(0.105)	(0.107)	(0.107)	(0.106)	(0.106)
CashFlow/Assets	-0.149	-0.149	-0.086	-0.086	-0.157	-0.156
	(0.095)	(0.095)	(0.098)	(0.098)	(0.096)	(0.096)
HHI	-0.009	-0.011	-0.259*	-0.261*	0.093	0.091
	(0.128)	(0.128)	(0.134)	(0.134)	(0.139)	(0.139)
HHI*HHI	0.033	0.035	0.139	0.141	-0.025	-0.022
	(0.145)	(0.145)	(0.154)	(0.154)	(0.153)	(0.153)
Blank_R&D	-8.133***	-8.133***	-7.938***	-7.938***	-8.132***	-8.132***
	(0.120)	(0.120)	(0.125)	(0.125)	(0.120)	(0.120)
Constant	5.937***	5.939***	5.725***	5.726***	6.013***	6.015***
	(0.179)	(0.179)	(0.185)	(0.185)	(0.181)	(0.181)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Country*Year FE	Yes	Yes	No	No	Yes	Yes
Sector*Year FE	No	No	Yes	Yes	Yes	Yes
Observations	437,635	437,635	436,211	436,211	436,002	436,002
R-squared	0.970	0.970	0.968	0.968	0.970	0.970

Table B3. Alternative Control Thresholds

Notes: This table reports the coefficient on CNControl from separate regressions of each dependent variable on an indicator for Chinese control under the broad definition, which includes ultimate owners in Great China. Column (1) applies the 10% control threshold used throughout the main text and reproduces the corresponding estimates from Tables 4 through 7; columns (2) and (3) raise the threshold to 25% (significant influence) and 50% (majority control). Each cell is from a separate regression that includes the full set of firm controls detailed in Table A1, firm fixed effects, and year fixed effects. #GrantedPatents is estimated by Poisson; all other outcomes by OLS. Standard errors clustered at the firm level are reported below each coefficient. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)
Control threshold	10%	25%	50%
Log(1+R&D)			
CNControl (Broad)	0.093*	0.117*	0.081
	(0.050)	(0.069)	(0.081)
Observations	437,885	432,850	430,537
#GrantedPatents			
CNControl (Broad)	0.034	-0.088*	-0.115***
	(0.082)	(0.050)	(0.035)
Observations	65,886	65,304	65,176
ROA			
CNControl (Broad)	-1.143***	-2.226***	-1.640***
	(0.280)	(0.451)	(0.574)
Observations	539,197	533,638	531,178
Log(1+Fixed)			
CNControl (Broad)	0.073***	0.125***	0.172***
	(0.022)	(0.032)	(0.042)
Observations	769,057	759,230	755,276
Log(1+Empl)			
CNControl (Broad)	-0.020	-0.008	-0.003
	(0.013)	(0.018)	(0.024)
Observations	559,919	554,140	551,382
CNSupplier			
CNControl (Broad)	0.037**	0.063***	0.079**
	(0.014)	(0.024)	(0.036)
Observations	79,053	77,027	76,264
CNCustomer			
CNControl (Broad)	0.018	0.020	0.049
	(0.016)	(0.026)	(0.033)
Observations	79,053	77,027	76,264
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes