Bailout, Borrowing, and Bust: How Stock Rescue Amplified China's Real Estate Meltdown *

Lingtian Bu, Meng Miao, and Tianyue Ruan†

March 2025

Preliminary draft; please do not circulate.

Abstract

We show that China's government stock purchases, originally aimed at stabilizing financial markets in 2015, induce non-real estate firms to diversify into the real estate sector and inadvertently contribute to China's recent housing market boom and bust cycle. Using a difference-in-differences empirical approach, we find firms backed by the "National Team" (NT) not only established more real estate subsidiaries, but also engaged more aggressively in land acquisitions than other firms, by tapping into the improved access to credit brought about by explicit government backing. Moreover, these firms exhibited speculative behaviors by prioritizing investments in cities with rapidly rising home prices and strong local government dependence on land sales. However, during the market correction, NT-backed firms faced heightened financial distress and legal disputes, underscoring their role in exacerbating market volatility.

Keywords: Real estate, state ownership, financial intervention, speculative investment, market volatility

*We thank Jie Yang for excellent research assistance.

†Bu: Renmin University of China, email: lingtianbu@ruc.edu.cn. Miao: Renmin University of China, email: miaomeng@ruc.edu.cn. Ruan: National University of Singapore, email: tianyue.ruan@nus.edu.sg.

1 Introduction

Economic stability is often regarded as the ultimate goal of government intervention, yet in certain contexts, such efforts may sow the seeds of a larger crisis. The dramatic fluctuations in China's real estate market over the past decade—from soaring prices in 2015 to a widespread decline exceeding 30% by 2023—offer a compelling case study. On the surface, this appears to be a "Minsky moment" triggered by speculative fervor and debt accumulation (Minsky, 1992), but a potentially deeper driver lies beneath: the government's emergency stock market bailout in 2015. Intended to quell financial panic, this intervention unexpectedly redirected funds and confidence toward the real estate sector, spurring an influx of non-traditional participants and ultimately destabilizing the market. This paper explores how this policy, through unforeseen pathways, reshaped the dynamics of China's real estate market.

Economics literature has long examined the dual effects of government intervention — capable of alleviating crises while also distorting market signals. In the United States, the 2008 Troubled Asset Relief Program (TARP) successfully stabilized the financial system, whereas Japan's bank bailouts in the 1990s were followed by prolonged economic stagnation. China's experience, however, is more intricate. In 2015, confronted with a severe stock market crash, the government deployed the "National Team" to purchase shares on a large scale, aiming to restore investor confidence. Yet, an unintended consequence of this move was that many firms gained long-coveted political connections. In China, as in perhaps other developing countries, such ownership ties grant firms access to government-controlled resources, including preferential financing and land supply, paving the way for their entry into the high-risk real estate sector. While this resource reallocation appeared to ease short-term pressures from stock market, it laid the groundwork for a subsequent real estate bubble, amplifying market instability.

China's A-share market experienced a severe downturn in 2015, with the CSI 300 In-

dex plummeting from nearly 7,000 points to about 2,000 points by July within six months. Market panic and liquidity shortages forced the central government to intervene. Through state-controlled financial institutions such as Central Huijin Investment and China Securities Finance Corporation (CSFC), commonly referred to as the "National Team" (NT), the government acquired stakes in hundreds of large-cap companies, with holdings remaining widespread by the end of 2015. As the stock market stagnated for an extended period, these holdings remained intact, creating a group of companies under central government control and fostering significant political ties. The political connections allowed firms to secure low-interest financing and privileged access to the land market, easing their entry into the real estate sector. While this likely spurred China's real estate boom up until 2019, their lack of industry expertise may have intensified the market chaos as conditions worsened.

We first present novel stylized facts on the aggregate importance of the less known small real estate developers in China. Even though large developers such as Evergrande, Vanke, and Country Garden have received significant media attention, they constitute a small fraction in the development of residential housing projects. During the period from 2008 to 2022, the 50 largest developers (including their subsidiaries) only jointly constitute 4.41% (11.87%) of the number (value) of residential land parcel purchases, while small developers collectively account for more than 95% (88%) of total transaction number (value). In addition, we use a novel, hand-collected data set containing residential housing legal disputes where real estate developers are sued by home buyers, creditors, or contractors to assess the quality of their development projects. We find that small developers constitute more than 90% of the defendants in the legal disputes.

Underlying the aggregate importance of the numerous small real estate developers is a widespread phenomenon of "diversification into real estate", that is, firms whose main lines of operation are not related to real estate set up real estate subsidiaries and participate in the development of residential housing projects. We find that many publicly listed

firms with no prior real estate involvement significantly increased their participation in the sector following the NT intervention. Between 2007 and 2022, non-real estate firms acquired more residential land than traditional real estate developers. Furthermore, from 2019 to 2023, at least 96 non-real estate listed companies were involved in real estate-related legal disputes. These patterns suggest that an influx of inexperienced real estate developers played a critical role in shaping the boom-bust cycle of the past decade (Deng et al., 2015). One notable example is Zhejiang Longsheng Group, a large chemical company founded in 1970 and a major global producer of dyes and other chemical products. Since 2009, Zhejiang Longsheng has ventured into the real estate sector by taking on high leverage. The direct NT backing since 2015 provided it with improved access to low-interest loans and further fueled its real estate expansion.

We leverage the National Team's intervention as a natural experiment to study the impact of government bailout on firms' real estate activities. Our empirical strategy is a difference-in-differences (DID) framework, comparing firms that received NT backing to similar firms that did not. In our regression specifications, we include firm fixed effects to control for observed and unobserved cross-sectional heterogeneity and time fixed effects to control for aggregate trends. Therefore, we only use within-firm variation in NT backing for estimation.

We find that state ownership significantly influenced firms' real estate exposure. Non-real estate listed firms backed by the NT exhibited a significantly higher probability of establishing real estate subsidiaries, with an average increase of 2.290 subsidiaries, a figure with both statistical and economic significance. Additionally, they have become more active in the real estate market, as demonstrated by a significant increase in residential land acquisitions. Our analysis suggests that improved access to credit, brought about by explicit government backing, is crucial for these firms to pursue diversification into the capital-intensive real estate sector. In addition, we find that these firms' market entry was largely driven by speculation, as they tended to favor markets with rising housing

prices and higher local government dependence on land, which were perceived to have a lower risk of price collapse due to the strong connection between local governments and land revenue. However, this expansion came at a cost. During market downturns, inexperienced firms faced greater risks. For instance, real estate subsidiaries of NT-backed firms were more likely to be involved in legal disputes following the 2019 housing price decline, reflecting deteriorating operational quality.

Notably, non-real estate listed firms heavily relied on high financial leverage for the diversification into the real estate sector. Our analysis shows that non-real estate firms backed by the NT significantly increased bond issuance and borrowing. For example, after being backed by the National Team, these firms saw a 2.598 percentage point increase in the probability of issuing bonds , with total bond issuance rising by 2.8% of their total asset. Additionally, short-term and long-term borrowing increased by 0.030 and 0.038, respectively (significant at 5%). While this high-leverage strategy fueled rapid expansion during the boom, it became a heavy burden during downturns, especially for firms lacking industry expertise.

We find that the NT backing induce listed state-owned enterprises (SOEs) to diversify into the real estate sector more than private firms. In terms of performance implications, we find that NT backing is associated with significantly lower profitability across a host of profitability measures. Furthermore, while NT backing has minimal negative effects on firm performance before real estate diversification, it has significant negative impact on firm performance following real estate diversification. This dynamic pattern reveals that NT backing itself does not directly undermine firm performance; rather, performance deterioration emerges specifically after NT-backed firms expand into real estate. The evidence points to real estate diversification as the mechanism through which NT backing ultimately harms profitability.

Our research is closely aligned with the literature on government intervention in markets during crises, particularly in the context of bailouts. While numerous studies high-

light bailouts as a crucial mechanism for government intervention during financial crises (Bernard et al., 2022), increasing attention is now being paid to the negative consequences of such actions, such as the over-indebtedness of the government (Bianchi et al., 2023). In developing economies like China, the side effects of government intervention could be even more prominent. Chen et al. (2020) argue that China's 4 trillion yuan bailout package may have played a key role in the subsequent rise of shadow banking in the country. Similarly, Acharya et al. (2020) demonstrate that the stimulus led to greater risks within China's banking sector, notably through the increased rollover risks of wealth management products. Dang et al. (2024a) analyze China's large-scale market intervention during the 2015 stock market crash and document that such interventions reduced stock price informativeness. Jin et al. (2023) extended this analysis by showing that the reduction in stock information could hinder managerial investment efficiency. In contrast, our study focuses on how the political connections fostered by bailout interventions influence corporate decisions, particularly when Chinese firms enter the real estate market.

Our work also aligns with research that examines the complex relationship between political connections and China's real estate market. Given China's dependence on real estate (Xiong, 2023) and the pervasive presence of political ties (Fan et al., 2007), many studies have delved into the interactions between these two elements. For example, Chen and Kung (2019) describe how land is often used by local officials as a tool to gain favor with the "princelings" and advance in their careers. Similarly, Deng et al. (2015) highlight how the Chinese government often leverages politically connected state-owned enterprises to implement macroeconomic policies, directing them to buy real estate and engage in other measures to stimulate the economy during downturns. Ling et al. (2016) find that politically connected companies in the real estate sector are prone to over-investment, which leads to lower returns. Wang and Yang (2021) also observe that companies with political ties tend to pay higher premiums in the real estate market. Our research differs by focusing on non-real estate companies with political connections, exploring how these

ties affect their decisions to enter the real estate sector. The political connections in our study are primarily those that private companies form under specific conditions, particularly through the government's stock purchasing initiative. This is echoed by Bai et al. (2020b), who observe that the network of "state-connected" private owners has grown significantly in recent years.

2 Institutional Setting and Data

2.1 Significance of small real estate developers in China

Real estate investment accounts for a significant fraction of the Chinese economy. Direct real estate investment contributes to approximately 10% of GDP (Rogoff and Yang, 2021). Using China's input-output matrix to further incorporate indirect effects, Rogoff and Yang (2024a) estimate that real estate in China accounts for over 25% of aggregate demand. While real estate investment has fallen as a share of GDP recently, as Xiong (2023) notes, the overall level of real estate investment in China remains significantly higher than the current level in the United States, and even higher than the US level seen before the Global Financial Crisis (Rogoff and Yang, 2024b). Furthermore, housing wealth far outweighs other asset classes for Chinese households. As Rogoff and Yang (2024b) note, China's housing valuation, despite recent price adjustments, is still double that of the US housing market; in contrast, the stock market represents only slightly over one-tenth of the housing market valuation. Given the predominant share of housing in household wealth, distress in the housing market has far-reaching implications for consumption, growth, and financial stability in China.

In China, there are approximately 100,000 real estate firms, less than 4% of them are listed on the stock markets (either the A-share or the H-share market). The vast majority of real estate firms are small real estate developers. The abundance of small real estate developers partly reflects the low entry barriers. The *Regulations on the Administration of Qualifications of Real Estate Development Enterprises*, issued by China's Ministry

of Housing and Urban-Rural Development, specify the qualification criteria of real estate development companies. The requirements on registered capital and qualifications are low. In addition, despite that developers need to be reviewed by the ministry before they can undertake real estate development across regions, the penalty for failing to pass the qualification review is low.

Despite being individually small, small developers collectively play an important role in China's real estate market. Even though large developers such as Evergrande, Vanke, and Country Garden have received significant media attention, they constitute a small fraction in the development of residential housing projects. We assess the importance of large and small developers using two measures: (1) land purchases, reflecting the activity in residential housing development, and (2) legal disputes where developers are sued by home buyers, creditors, or contractors, reflecting the quality of these developments.

During the period from 2008 to 2022, the 50 largest developers (including their subsidiaries)[1] only jointly constitute 4.41% of the number of residential land parcel purchases, while other, smaller developers collectively account for more than 95% of total land parcel purchases. Large developers purchase larger land parcels on average, so their share in total transaction values is higher, but still relatively low at 11.87% of total transaction values, while small developers collectively account for 88% of total transaction values. In contrast, large developers have a much higher market share in the US: According to the US National Association of Home Builders (NAHB),[2] 30% of homes are constructed by the 10 largest developers in the US over the same period. Figure 1 shows the comparison of small developers' combined market share in land purchases across provinces

[1]We follow Chen et al. (2024) to use a Leju report from the China Real Estate Information Center (http://m.fangchan.com/data/17/2018-12-31/6485515862089732345.html) and keyword matches to identify large developers. The Leju report identifies the largest 50 developers based on their sales revenue in 2018. The keyword search algorithm classifies a developer's name contains keyword(s) that matches any names of the top 50 developers listed in the report as (belonging to) a large developer. For example, a company named "Beijing Evergrande Real Estate Development Co., Ltd." is classified as (belonging to) a large developer because Evergrande is one of the top 50 developers on the list. Effectively, this algorithm allows us to identify subsidiaries of large developers that share the common keywords in the land transaction data.

[2]Source: https://www.nahb.org/blog/2021/02/Top-10-Builders-Account-for-30-of-SingleFamily-Market-Share.

in China. Despite substantial geographic variation, small developers' combined market share is consistently high across different areas in China.

On the other hand, large developers (including their subsidiaries) constitute only 7.26% of the defendants in the residential housing legal disputes, while small developers are the defendants in the remaining 92.24% disputes. Figure 2 shows the comparison of small developers' combined market share in legal disputes across provinces in China.

2.2 Diversification into real estate by listed firms

Underlying the aggregate importance of the numerous small real estate developers is a widespread phenomenon of "diversification into real estate", that is, firms whose main lines of operation are not related to real estate (i.e., "non-real estate listed firms") set up real estate subsidiaries and participate in the development of residential housing projects.

During the period from 2008 to 2022, 17.45% of non-real estate listed firms have established at least one real estate subsidiaries. On the other hand, firms whose headline industry is real estate ("real estate listed firms") account for only 4.29% of all listed firms.

Data show that real-estate subsidiaries set up by the diversifying non-real estate firms engage in real estate development. 393 non-real estate listed firms purchase residential land parcels through one of their subsidiaries; 114 non-real estate listed firms have been sued by home buyers, creditors, or contractors. In both measures, the representation of non-real estate firms is on par or even exceeds that of real estate firms.

One notable example is Zhejiang Longsheng Group, a large chemical company founded in 1970 and listed in the Shanghai Stock Exchange (ticker: 600352). As a leading chemical company, it produces 300,000 tons of dyes and 100,000 tons of other chemical products annually, sells its products to more than 70 countries and regions, and accounts for 21% of the global market share.[3] Since 2009, through its wholly-owned subsidiary, Longsheng Real Estate Group, Zhejiang Longsheng has ventured into the real estate sector, focus-

[3]Source: https://www.longsheng.com/aboutus.

ing on urban renewal and high-end property development. The real estate operation is primarily financed by credit: as of the second quarter of 2019, the real estate segment accounts for 49.37% of assets but a whopping 72.91% of liabilities, resulting in a segment-specific debt-to-assets ratio as high as 81.39%. Despite the high leverage and the heavy reliance on credit, the real estate segment only contributes to 0.7% of total revenue.

By documenting this stylized fact, we extend the prior analysis by Deng et al. (2015) on central state-owned enterprises' diversification into real estate development.

2.3 Data

Legal dispute data: The legal dispute data of real estate companies comes from Tianyancha. Tianyancha is a business information platform that includes basic industrial and commercial information, equity structure, litigation information, trademark and patent details, dishonesty records, and corporate relationships for all companies operating in mainland China. We obtain the legal dispute information from the "Legal Litigation" section.

Land transaction data: The land transaction data set is obtained from the website of the Land Transaction Monitoring System.[4] According to the 2007 Law of Land Management, the prefectural bureau of land and resources is required to report each land transaction in their jurisdiction electronically on this website.

Firm information and financials: We obtain firm-level information and financial data from the China Stock Market and Accounting Research (CSMAR) database. Firm-level characteristics include the registered address and industry classification of the parent company. Ownership structure data comprise the top ten shareholders of each listed firm, their respective shareholding ratios, and the nature of these shareholders (e.g., state-owned, private, or foreign investors). Financial data include key variables reported in

[4]Link: http://www.landchina.com/.

firms' balance sheets and income statements, such as total assets, liabilities, revenues, and net profits. In addition, CSMAR provides information on corporate financing activities, including bank loans, bond issuances, and seasoned equity offerings.

Following Dang et al. (2024b), we use top 10 shareholders disclosed in listed firms' quarterly report to identify whether a given firm is backed by national teams (NT). The NT consists of four groups of financial institutions: China Securities Finance Corporation (CSF), CSF mutual funds, Central Huijin Investment, and investment platforms owned and funded by the State Administration of Foreign Exchange (SAFE).

We further combine top 10 shareholders records with the list of actual controllers disclosed in quarterly reports to identify central and local SOEs, as well as private firms. Based on Bai et al. (2020a); Allen et al. (2024a) , we define central government holders as (1) departments of the State Council; or (2) State-Owned Assets Supervision and Administration Commission (SASAC) or Ministry of Finance (MOF)[5]; (3) a firm that is wholly and directly owned by the State Council, SASAC or MOF. We define local government holders as (1) administrative divisions of government at provincial/city/county levels; or (2) local SASAC and department of finance. We classify a listed firm as central SOE if its actual controller(s) include at least one central government holder or the shares owned by central government holders exceed that of the other holders combined. We classify a listed firm as a local SOE in a similar way and as privately owned if otherwise.

Subsidiary Information: Data on corporate subsidiaries are obtained from the China Research Data Services (CNRDS) database, which provides a panel dataset tracking subsidiary-level information such as firm names, establishment years, industry classifications, and registered addresses. This dataset enables us to capture firms' diversification trends by observing the dynamic evolution of their subsidiary structures. To address missing information, we supplement the dataset with manually collected subsidiary records from Tianyancha.

[5]Firms under the administration of SASAC and MOF are publicly disclosed every year.

Other data sources: To construct our key measures in the Channels section, we rely on multiple data sources.

To capture speculative incentives, we use the lagged local house price index (HPI), which is sourced primarily from Anjuke, a major online real estate platform in China that tracks the prices of new and second-hand housing, rental properties, and commercial office spaces across various cities. To enhance data coverage and accuracy, we further incorporate price information from other real estate platforms, including Lianjia and Fangtianxia, as well as aggregate market statistics from the Juhui Data platform. These sources allow us to construct a comprehensive dataset covering average housing prices in 296 Chinese cities.

The measure of local government dependence on land finance is constructed using two key datasets. First, we obtain land transaction records, and then calculate the total income from land transections. Second, we collect fiscal data from statistical yearbook issued by prefecture-level cities, including government expenditures, revenues, and intergovernmental transfers. By combining these sources, we compute the ratio of land-related revenues to local government deficit as a proxy for local governments' reliance on land-based fiscal resources.

3 Empirical Approach

3.1 The National Team's Intervention

In mid-2015, China's major stock market indices experienced a sharp crash, erasing nearly 40% of total market capitalization. This drastic decline was the culmination of several factors that had been building since 2011. A key contributor was the widespread use of margin financing, which had fueled a prolonged bull market following its authorization in 2011 (Huang et al., 2019; Dang et al., 2024a). However, concerns over excessive leverage grew as unregulated margin trading expanded rapidly. In response, the China Securities Regulatory Commission (CSRC) issued an order on June 12, 2015, prohibiting securities

firms from facilitating unregulated margin trading. The market reacted swiftly, with major indices plunging 13% within a week, ultimately triggering a month-long stock market crash. The sharp decline is widely attributed to excessive leverage and the subsequent wave of forced liquidations as investors unwound their margin positions in a fire sale.

The crash generated widespread panic, prompting the Chinese government to introduce a series of rescue measures aimed at stabilizing the market. Among these interventions was the direct purchase of stocks by state-owned financial institutions including the China Securities Finance Corporation (CSF), CSF-managed mutual funds, Central Huijin Investment, and investment platforms under the State Administration of Foreign Exchange (SAFE). The CSRC assured investors that the NT would act as a stabilizing force in the market, stepping in when necessary to curb volatility. Subsequent quarterly reports provided updates on the NT's holdings, offering insights into potential future government interventions. This measured approach also helped prevent a disorderly exit of NT-backed funds, which could have further destabilized the market. As shown in Figure 3, NT-backed non-real estate firms remained prevalent over time. By the end of 2019, the NT still held 956 stocks, of which 836 were non-real estate firms.

Listed firms in China are required to disclose the names and holdings of their top ten shareholders in quarterly reports. We classify a firm as NT-backed if at least one of these shareholders is an NT-affiliated institution. Using the NT list from Dang et al. (2024a), we identify NT backing based on shareholder names. This classification serves as a key measure of state participation in financial markets, highlighting the government's ongoing efforts to maintain stability and bolster investor confidence.

3.2 Empirical Specification

We leverage the National Team's intervention as a natural experiment to study its impact on firms' real estate activities. Our empirical strategy employs a difference-in-differences (DID) framework, comparing firms that received NT backing to similar firms that did not.

We focus on Non-real estate listed firms. Specifically, we estimate the following baseline regression model:

$$Y_{i,t} = \gamma_i + \delta_t + \beta NT_{i,t} + \theta X_{i,t} + \varepsilon_{i,t} \tag{1}$$

where $Y_{i,t}$ represents key firm-level outcomes, including (a) the number of real estate subsidiaries established by non-real estate listed firms, (b) land acquisition behavior, and (c) the probability of encountering legal disputes. The variable $NT_{i,t}$ is an indicator for whether firm i is held by the National Team at time t. $X_{i,t}$ denotes a set of time-varying firm characteristics. We include firm fixed effects γ_i to control for observed and unobserved cross-sectional heterogeneity and time fixed effects δ_t to control for aggregate trends. Therefore, we only use within-firm variation in NT backing for estimation. Standard errors are clustered at the firm level to account for serial correlation.

Given the stylized fact that non-real estate listed firms have substantial exposure to real estate, we propose the hypothesis that NT-holding increases the real estate exposure of the firm. In detail, we expect NT-backed firms to engage more actively in real estate expansion, particularly through subsidiary formation and land purchases. The inclusion of legal disputes as an outcome variable further allows us to assess potential risks associated with this expansion.

3.3 Endogeneity

In the third quarter of 2015, the first quarter when systematic information on National Team holdings is available, National Teams have equity ownership in 1193 listed firms, accounting 43% of stocks listed in Chinese stock markets at the time. Figure 3 shows that in non-real estate firms, more than 35% are backed by National Teams at the time. Huang et al. (2019) document disperse industry allocations of NT-backed firms by the end of September 2015. In total, National Teams invested more than 30% in terms of market cap in banking and non-banking financial firms, and the remaining investments were

distributed among various industries ranging from 7% to less than 1%. In subsequent periods, National Teams maintain their holdings and only gradually exit their positions years after the initial bailout.

Tables 1 and 2 sort stocks into quintiles based on market capitalization and ROE, and reports the number of NT-backed companies in each quintiles. We find that over time, NT-backed listed firms are distributed across diverse market capitalization and ROE groups.

4 Results

To study the behavior and performance of non-real estate listed firms after being held by national team investors, we focus on three key outcomes: (a) the size-scaled number of real estate subsidiaries, (b) the size-scaled number of land parcel purchases, and (c) the probability of involvement in legal disputes. We investigate the underlying mechanisms driving NT-holding firms' entry into the real estate sector in terms of motivation and capability. Our analysis also highlights the heterogeneous effects of being held by central SOEs versus local SOEs. Additionally, we provide evidence on the broader diversification strategies pursued by NT-holding firms. Finally, we discuss the systemic implications of state ownership from the perspective of stability in the real estate sector.

4.1 Diversification into Real Estate Development

To examine the geographic diversification patterns of non-real estate listed firms following investment by the National Team, we analyze both the establishment of real estate subsidiaries and land acquisitions across different locations.

Table 3 reports estimates from our baseline specification. Column 1 shows that NT investment increases the number of real estate subsidiaries, scaled by total assets, by 2.538. The effect is statistically significant at the 1 percent level and represents a substantial expansion into real estate activities following NT investment.

The geographic distribution of this expansion reveals important patterns. Column 2

shows that NT-backed firms primarily establish real estate subsidiaries in their home city, with an estimated increase of 1.406, significant at the 5 percent level. Column 4 indicates that firms also expand into other cities within the same region, with an increase of 0.502, significant at the 5 percent level. In contrast, columns 3 and 5 show no statistically significant increases in subsidiary establishment in other cities within the same province or in different provinces and regions.

Table 4 examines land acquisition patterns, estimated at a quarterly frequency. Column 1 shows that NT holding increases the scaled number of land transactions by 0.079. This effect is statistically significant at the 5 percent level, confirming that NT-backed non-real estate firms not only establish real estate subsidiaries but also actively acquire land for development. The results are robust to firm type*time FEs.

The geographic breakdown suggests a more concentrated pattern in land purchases. Column 2 indicates that NT-backed firms predominantly acquire land in their home city, with an increase of 0.055, significant at the 10 percent level. However, unlike subsidiary establishment, we find no statistically significant evidence of geographic diversification in land acquisitions beyond the home city, as reflected in the insignificant coefficients in columns 3 through 5.

These findings suggest that NT-backed firms adopt a concentrated geographic strategy in their real estate activities, leveraging their informational advantages and political connections in their home markets. While subsidiary establishment extends into other cities within the same region, actual land purchases remain largely confined to home cities. This pattern indicates a strategic approach in which firms expand their organizational footprint regionally while concentrating development activities in familiar locations.

4.2 Deteriorating Quality

While our previous analysis demonstrated that NT-holding promotes real estate sector expansion, a critical question emerges regarding the quality of these expanded operations. Firms rapidly diversifying into real estate might sacrifice operational quality for growth, potentially leading to increased legal challenges. This section examines whether NT-backed firms experience higher incidence of legal disputes, which would suggest deterioration in business quality and potential negative externalities from state-driven diversification.

Table 5 presents our findings on the geographic distribution of legal disputes. Column 1 shows that NT backing significantly increases the probability of experiencing legal disputes by 0.409 percentage points, which is significant at the 10% level. This represents a substantive increase in legal risk and suggests potential deterioration in operational quality following NT investment.

The geographic decomposition in columns 2-5 offers important insights into the spatial distribution of these legal challenges. We find no statistically significant increase in legal disputes in the firms' home cities, within different cities of the same province, or in different provinces and regions. However, column 4 reveals a significant increase in legal disputes in different cities within the same region, with a coefficient of 0.249 and significant at the 10% level.

These patterns align with our earlier findings on geographic expansion. NT-backed firms primarily experience increased legal disputes in different cities within the same region - precisely where they significantly expand subsidiary establishments. This suggests that firms encounter operational difficulties when venturing beyond their home city but remaining within their broader regional networks. The absence of significant effects in home cities, where these firms concentrate their land purchases, may indicate that local connections and familiarity help mitigate legal risks in immediate proximity to headquarters.

The findings suggest a quality-quantity tradeoff in NT-driven real estate diversification. While NT holding enables firms to rapidly expand their real estate operations, this expansion appears to come at the cost of increased legal complications, particularly in operations beyond firms' immediate geographic base.

4.3 The Role of External Finance

We turn to examine firms' capabilities to pursue diversification into the real estate sector, a well-known capital-intensive sector. A critical question is whether NT backing enhances firms' financing capacity, potentially providing preferential access to capital needed for real estate development. Given the capital-intensive nature of real estate projects, enhanced financing capabilities could be a key mechanism through which NT-backed firms pursue diversification.

We investigate multiple financing channels through which NT backing might facilitate capital access, including bank loans, bond issuance, and equity financing. This comprehensive approach allows us to examine whether NT-backed firms substitute between different financing sources or enjoy broad-based financing advantages.

Table 6 presents the results that challenge conventional wisdom about state connections and financing in China. Contrary to expectations, NT backing does not improve firms' access to traditional bank credit. Columns 1 and 2 show no statistically significant effect on short-term or long-term borrowings. More strikingly, columns 3 and 4 reveal that NT-backed firms experience significant decreases in bank loans, with both the probability of securing bank loans and the loan amounts declining significantly. For alternative financing channels, we observe a notable shift toward bond markets. Columns 5 and 6 show that NT-backed firms are significantly more likely to issue bonds and in larger amounts. However, equity financing declines substantially following NT backing, as demonstrated in columns 7 and 8.

The shift from traditional bank lending to bond financing aligns with broader finan-

cial market developments in China, where bond markets have expanded as alternatives to bank credit, particularly for sectors facing regulatory restrictions. This finding suggests that NT backing provides legitimacy in bond markets. The results challenges the view that state connections invariably improve financing conditions in China's state-dominated banking system. Instead, NT-backed firms' real estate diversification appears driven primarily by the mechanisms identified earlier—speculative motives and alignment with local government fiscal objectives—while working within, rather than circumventing, evolving financing constraints in China's financial system.

The pattern is also consistent with China's shadow banking development. Following regulatory tightening on bank lending to real estate, many firms turned to bond markets and other non-bank channels to finance property investments (Chen et al., 2018, 2020; He and Wei, 2023). NT-backed firms appear to follow this pattern, suggesting they operate within rather than outside regulatory constraints. The reliance on bond markets rather than bank credit may also have implications for financial stability, as bond financing typically involves less monitoring and potentially greater risk-taking than traditional bank loans. This financing pattern may contribute to the quality deterioration and increased legal disputes documented earlier.

4.4 Channels

To further investigate the mechanisms underlying NT-backed firms' engagement in real estate, we explore three potential channels: speculative motives, local government land reliance, and financial facility. Our empirical strategy follows a generalized specification that incorporates interaction terms to capture these mechanisms:

$$Y_{ict} = \beta_0 + \beta_1 NT_{it} + \beta_2 Z_{ic,t-1} + \beta_3 NT_{it} \times Z_{ic,t-1} + \theta_1 X_{it} + \theta_2 X_{ct} + \gamma_i + \delta_t + \varepsilon_{it} \qquad (2)$$

where $Z_{ic,t-1}$ represents different city-level or firm-level mediators, including (i) the lagged local house price index (HPI) to capture speculative incentives, and (ii) local government dependence on land finance (LFD). X_{it} and X_{ct} include firm- and city-level controls, while fixed effects absorb unobservable heterogeneity. By examining these channels, we provide deeper insights into the motivations and capabilities driving NT-backed real estate investments.

4.4.1 Speculative Motives

Having established that NT-backed firms significantly expand their real estate activities and subsequently face increased legal disputes, we now explore a key mechanism driving this diversification: speculation on rising real estate prices. Prior research suggests that non-core firms may enter real estate markets primarily to capitalize on price appreciation rather than to achieve operational synergies (Chen et al., 2017; Chen and Wen, 2017).

To test this speculation channel, we extend our baseline model by incorporating housing price index (HPI) measures and their interaction with NT-holding. Table 7 Panel (a) presents results from this specification. The interaction term $NT_{it} \times HPI_{ic,t-1}$ is positive and significant for the overall number of real estate subsidiaries (column 1), with a coefficient of 0.098 significant at the 5% level. This indicates that NT-backed firms establish more real estate subsidiaries in response to higher housing prices, consistent with speculative motives. The geographic breakdown shows this effect is significant for subsidiaries in the same city and in different cities within the same region.

Interestingly, the main effect of HPI is negative and significant for subsidiaries in different cities within the same region and in different provinces and regions. This suggests that while non-NT firms tend to reduce distant real estate activities when local housing prices increase, NT-backed firms exhibit the opposite behavior, potentially reflecting their greater capacity to engage in speculative investment.

The findings suggest that NT-backed firms are not merely diversifying into real es-

tate as a general strategy, but are strategically responding to housing price signals. The stronger effect in high-price environments indicates that anticipated price appreciation is a significant driver of NT-backed firms' real estate investments. This speculative behavior may explain the previously documented quality deterioration, as firms rapidly expand into real estate markets without sufficient operational experience in the sector, but with expectations of financial gains from price appreciation.

4.4.2 Local Land Reliance

Building on our analysis of speculative motives, we now examine another potential mechanism driving NT-backed firms' real estate diversification: the fiscal dependence of local governments on land sales. In China, local governments rely heavily on land transfer fees as a critical source of revenue, creating incentives for officials to encourage real estate development in their jurisdictions (Lin, 2007; He et al., 2022; Lin and Yi, 2011; Han and Kung, 2015; Chen and Kung, 2016). We hypothesize that NT-backed firms may face stronger political pressure or receive greater support to enter real estate markets in cities where governments are more dependent on land-based fiscal revenue.

To test this channel, we augment our baseline specification with measures of local government land finance dependence (LFD) and its interaction with NT backing. Results in Table 8 show that the interaction term $NT_{it} \times LFD_{ic,t-1}$ is positive and significant for the overall number of real estate subsidiaries. This indicates that NT-backed firms establish more real estate subsidiaries when headquartered in cities with higher dependence on land finance.

The geographic decomposition reveals that this effect is particularly pronounced for subsidiaries established in the same city. This suggests that NT-backed firms respond most directly to the fiscal needs of their home cities, where they likely have the strongest political connections and face the most direct pressure or incentives from local officials.

These findings complement our earlier results on speculation motives. While NT-

backed firms appear to respond to price signals for potential financial gain, they also align their diversification strategies with local government fiscal objectives. This dual mechanism helps explain the geographic concentration of real estate activities in home cities, where both market opportunities and political incentives are strongest.

The local government fiscal dependence channel also provides insight into the varying quality of real estate projects. In cities highly dependent on land revenue, there may be pressure to expedite development approvals and potentially overlook quality concerns, contributing to the increased legal disputes we documented earlier. It suggests that NT-backed firms' real estate expansion represents not only a corporate diversification strategy but also reflects their role in China's political economy, serving as instruments for achieving government objectives in the real estate sector.

4.5 Heterogeneity by Firm Ownership

To further explore the heterogeneous impact of NT backing on firms' diversification into real estate, we stratify our baseline analysis by firm ownership type: central state-owned enterprises (central SOEs), local state-owned enterprises (local SOEs), and privately owned enterprises (private firm). The rationale for this heterogeneity analysis is twofold. First, ownership structure plays a crucial role in shaping firms' strategic investment decisions, particularly in sectors subject to significant government influence, such as real estate. State-owned enterprises, especially central SOEs, often enjoy preferential access to credit and land resources, which could amplify the effects of NT backing on their expansion into real estate. In contrast, private firms may face greater financial and regulatory constraints, leading to differential responses. Second, given the strategic role of real estate in China's political economy, examining heterogeneity by firm type allows us to discern whether NT-backed diversification aligns with broader state objectives or is driven by firm-specific incentives.

Table 9 presents the estimation results, which reveal notable differences across firm

types. Column 1 shows that NT-backed central SOEs significantly expand their real estate subsidiaries, with an estimated increase of 4.010 size-scaled subsidiaries on average, significant at the 1% level. Local SOEs also exhibit a positive response, albeit of smaller magnitude (2.540 size-scaled subsidiaries, significant at the 5% level). In contrast, the effect on private firms is weaker, with an increase of 1.977 size-scaled subsidiaries, which is only marginally significant. This pattern is consistent with the notion that central SOEs, as the most politically connected entities, are better positioned to leverage NT support for real estate expansion.

Column 2 further examines firms' participation in land auctions, a crucial channel for real estate expansion. The results indicate that NT-backed central SOEs significantly increase their land acquisitions, with an additional 0.174 size-scaled land auction participations on average. The effect for local SOEs is positive but statistically insignificant, while private firms exhibit the smallest response, suggesting that state-owned firms—especially those at the central level—are more aggressive in acquiring land under NT support.

Finally, Column 3 investigates the likelihood of firms facing disputes related to real estate activities, which may reflect regulatory scrutiny or contractual frictions. The results suggest that NT-backed local SOEs are more likely to experience disputes, with an estimated increase of 0.917 percentage points, whereas central SOEs and private firms do not exhibit statistically significant effects. This finding may indicate that while central SOEs benefit from stronger political alignment, local SOEs, who operate at the intersection of local government interests, face greater legal uncertainties when expanding into real estate.

Overall, these results underscore the critical role of firm ownership structure in mediating the effects of NT intervention. The stronger response among central SOEs highlights their privileged position in mobilizing resources for real estate expansion, while the relatively muted reaction among private firms suggests that private firms remain constrained despite direct central government support in the form of NT backing. These findings align

with the broader literature on state capitalism, which emphasizes the differentiated roles of state versus private actors in politically connected markets (Fisman, 2001; Cull and Xu, 2005; Bai et al., 2006; Song et al., 2011).

4.6 Implication: Performance Consequences

A critical policy question is how this diversification affects subsequent performance. If real estate expansion enhances profitability, concerns about resource misallocation might be overstated. Table 10 Panel (a) initially suggests cause for concern, showing that NT backing correlates with significantly lower profitability across all measures.

However, this average effect obscures a more nuanced reality revealed in Panel (b), which distinguishes between pre- and post-diversification periods. The results demonstrate that NT backing has minimal negative effects on firm performance before real estate diversification, with most coefficients statistically insignificant except for scaled operating revenue. The post-diversification picture changes dramatically. The interaction between NT backing and post-diversification status shows substantial negative effects on multiple profitability measures. The coefficients are economically meaningful and statistically significant for ROA, ROE, ROIC, and scaled operating revenue.

This temporal pattern reveals that NT backing itself does not directly undermine firm performance. Rather, performance deterioration emerges specifically after NT-backed firms expand into real estate. The evidence points to real estate diversification as the mechanism through which NT backing ultimately harms profitability.

These findings illuminate important dynamics in how state influence through market interventions affects capital allocation and economic efficiency. The evidence presents a concerning sequence: NT backing encourages firms to diversify into real estate, but this diversification subsequently leads to significant profitability declines.

This pattern suggests a form of resource misallocation where productive capital flows from efficient core businesses toward real estate activities where these firms lack compet-

itive advantage. The redirection of resources from precisely those activities where firms demonstrate greatest competence to a sector characterized by speculation and cyclicality raises efficiency concerns from both firm and macroeconomic perspectives.

The negative post-diversification performance effects, combined with our earlier findings on increased legal disputes, indicate that NT-backed firms' real estate ventures not only underperform their core businesses but also potentially increase operational risks. This suggests that NT backing may inadvertently promote inefficient diversification strategies that reduce overall economic productivity while increasing business fragility.

These results contribute to the literature on state capitalism and the efficiency consequences of government influence in market economies (Shleifer and Vishny, 1994; Acemoglu et al., 2001; Hsieh and Klenow, 2009; Song et al., 2011; Acemoglu and Robinson, 2013). While state support may provide firms with enhanced resources and opportunities, our findings indicate that such support can distort incentives in ways that lead to suboptimal resource allocation. The combination of political connections through NT backing and opportunities in the real estate sector appears to create incentives for diversification that ultimately undermines firm performance.

From a policy perspective, these results highlight potentially significant unintended consequences of state market interventions. Though the National Team program was implemented to stabilize financial markets during periods of volatility, our analysis suggests it may have contributed to resource misallocation by encouraging non-real estate firms to divert capital to property development. This diversion potentially fueled speculation in an already heated real estate market while simultaneously undermining these firms' performance in their core businesses—a concerning trade-off for economic efficiency.

5 Discussion and Concluding Remarks

Our findings reveal how financial market interventions unintentionally impact real estate dynamics. Government bailouts and state ownership have fostered political connections

among firms, leading to the entry of inexperienced yet politically connected companies into the property sector, increasing market risks and unfinished projects.

Our analysis highlights the double-edged nature of government bailouts. On the one hand, during financial crises or stock market crashes, government intervention through capital injections can quickly restore liquidity, boost confidence, and help stabilize the market and the broader economy. At the same time, in many developing countries, government ownership of listed firms is often seen as a form of political connection, which can lead to negative consequences such as corruption and inefficient resource allocation. The key policy implication is that while government intervention may be necessary in times of crisis, it can also distort the market. Therefore, it is important for the government to exit as soon as possible once stability is restored, minimizing any long-term negative effects without disrupting the market.

Another challenge occurs when the stock market remains depressed for a prolonged period, as evidenced by the case of the Chinese stock market (Allen et al., 2024b). The government may struggle to find an opportunity to exit quickly while also avoiding financial losses. In such cases, policymakers must face a hard decision: Whether to accept lower returns and exit to prevent further distortions, or to maintain holdings over the long term, allowing potential negative effects to persist. Additionally, an early exit could result in losses on the government's balance sheet, raising the question of whether the public and higher authorities would be willing to accept such outcomes. These issues are of great importance and worth exploring in future research.

References

Acemoglu, D., Johnson, S., Robinson, J. A., 2001. The colonial origins of comparative development: An empirical investigation. American economic review 91, 1369–1401.

Acemoglu, D., Robinson, J. A., 2013. Why nations fail: The origins of power, prosperity, and poverty. Crown Currency.

Acharya, V. V., Qian, J., Su, Y., Yang, Z., et al., 2020. In the shadow of banks: wealth management products and issuing banks' risks in china .

Allen, F., Cai, J., Gu, X., Qian, J., Zhao, L., Zhu, W., 2024a. Centralization or decentralization? The evolution of state-ownership in China.

Allen, F., Qian, J., Shan, C., Zhu, J. L., 2024b. Dissecting the long-term performance of the chinese stock market. The journal of finance 79, 993–1054.

Bai, C.-E., Hsieh, C.-T., Song, Z. M., Wang, X., 2020a. The rise of state-connected private owners in china. Working Paper 28170, National Bureau of Economic Research.

Bai, C.-E., Hsieh, C.-T., Song, Z. M., Wang, X., 2020b. Special deals from special investors: The rise of state-connected private owners in china. University of Chicago, Becker Friedman Institute for Economics Working Paper .

Bai, C.-E., Lu, J., Tao, Z., 2006. The multitask theory of state enterprise reform: Empirical evidence from china. American Economic Review 96, 353–357.

Bernard, B., Capponi, A., Stiglitz, J. E., 2022. Bail-ins and bailouts: Incentives, connectivity, and systemic stability. Journal of Political Economy 130, 1805–1859.

Bianchi, J., Ottonello, P., Presno, I., 2023. Fiscal stimulus under sovereign risk. Journal of Political Economy 131, 2328–2369.

Chen, K., Ren, J., Zha, T., 2018. The nexus of monetary policy and shadow banking in china. American Economic Review 108, 3891–3936.

Chen, K., Wen, Y., 2017. The great housing boom of china. American Economic Journal: Macroeconomics 9, 73–114.

Chen, T., Kung, J. K.-s., 2019. Busting the "princelings": The campaign against corruption in china's primary land market. The Quarterly Journal of Economics 134, 185–226.

Chen, T., Kung, J.-S., 2016. Do land revenue windfalls create a political resource curse? evidence from china. Journal of Development Economics 123, 86–106.

Chen, T., Liu, L., Xiong, W., Zhou, L.-A., et al., 2017. Real estate boom and misallocation of capital in china. Work. Pap., Princeton Univ., Princeton, NJ 9.

Chen, Z., He, Z., Liu, C., 2020. The financing of local government in china: Stimulus loan wanes and shadow banking waxes. Journal of Financial Economics 137, 42–71.

Chen, Z., Hu, M., Jin, G., Zhou, Q., 2024. Haste or waste? the role of presale in residential housing. NBER Working Paper .

Cull, R., Xu, L. C., 2005. Institutions, ownership, and finance: the determinants of profit reinvestment among chinese firms. Journal of financial economics 77, 117–146.

Dang, T. V., Li, W., Wang, Y., 2024a. Government stock purchase undermines price informativeness: Evidence from china's "national team". Journal of Financial and Quantitative Analysis 59, 2340–2374.

Dang, T. V., Li, W., Wang, Y., 2024b. Government stock purchase undermines price informativeness: Evidence from china's "national team". Journal of Financial and Quantitative Analysis 59, 2340–2374.

Deng, Y., Morck, R., Wu, J., Yeung, B., 2015. China's pseudo-monetary policy. Review of Finance 19, 55–93.

Fan, J. P., Wong, T. J., Zhang, T., 2007. Politically connected ceos, corporate governance, and post-ipo performance of china's newly partially privatized firms. Journal of financial economics 84, 330–357.

Fisman, R., 2001. Estimating the value of political connections. American economic review 91, 1095–1102.

Han, L., Kung, J. K.-S., 2015. Fiscal incentives and policy choices of local governments: Evidence from china. Journal of Development Economics 116, 89–104.

He, Z., Nelson, S. T., Su, Y., Zhang, A. L., Zhang, F., 2022. Zoning for profits: How public finance shapes land supply in china. Tech. rep., National Bureau of Economic Research.

He, Z., Wei, W., 2023. China's financial system and economy: A review. Annual Review of Economics 15, 451–483.

Hsieh, C.-T., Klenow, P. J., 2009. Misallocation and manufacturing tfp in china and india. The Quarterly journal of economics 124, 1403–1448.

Huang, Y., Miao, J., Wang, P., 2019. Saving China's Stock Market? IMF Economic Review 67, 349–394.

Jin, L., Li, Z., Lu, L., Ni, X., 2023. Does stock market rescue affect investment efficiency in the real sector? Journal of Financial Markets 65, 100859.

Lin, G. C., 2007. Reproducing spaces of chinese urbanisation: New city-based and land-centred urban transformation. Urban studies 44, 1827–1855.

Lin, G. C., Yi, F., 2011. Urbanization of capital or capitalization on urban land? land development and local public finance in urbanizing china. Urban Geography 32, 50–79.

Ling, L., Zhou, X., Liang, Q., Song, P., Zeng, H., 2016. Political connections, overinvestments and firm performance: Evidence from chinese listed real estate firms. Finance Research Letters 18, 328–333.

Rogoff, K., Yang, Y., 2021. Has china's housing production peaked? China & World Economy 29, 1–31.

Rogoff, K., Yang, Y., 2024a. Rethinking china's growth. Economic Policy 39, 517–548.

Rogoff, K. S., Yang, Y., 2024b. A tale of tier 3 cities. Journal of International Economics 152, 103989.

Shleifer, A., Vishny, R. W., 1994. Politicians and firms. The quarterly journal of economics 109, 995–1025.

Song, Z., Storesletten, K., Zilibotti, F., 2011. Growing like china. American economic review 101, 196–233.

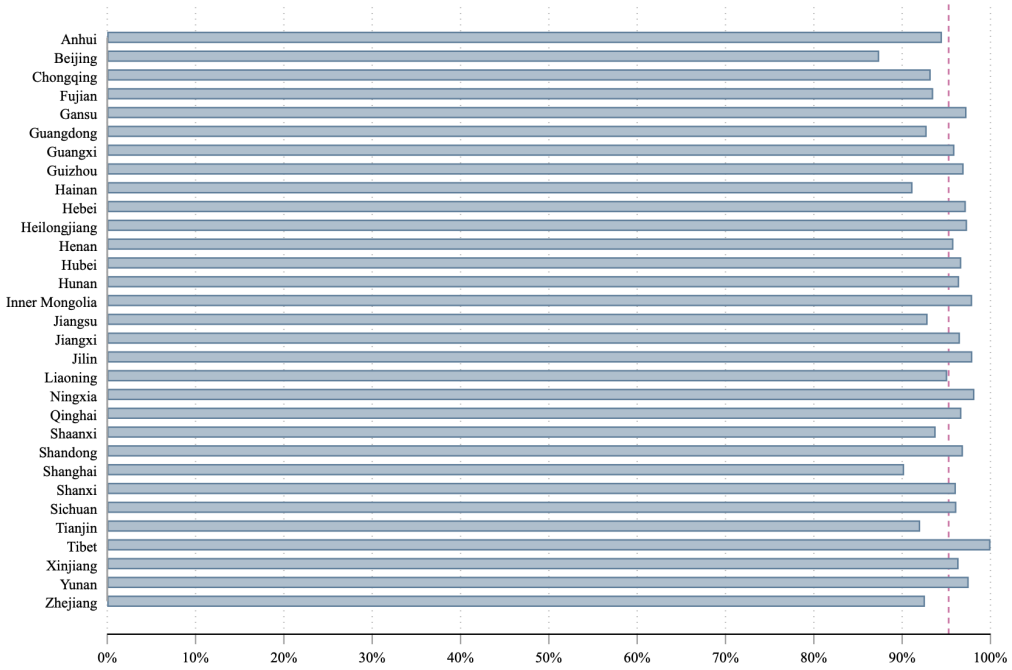
Wang, L., Yang, Y., 2021. Political connections in the land market: Evidence from china's state-owned enterprises. Real Estate Economics 49, 7–35.

Xiong, W., 2023. Derisking real estate in China's hybrid economy. NBER Working Paper .

Figure 1: **Small developers' importance in residential land purchases**

This figure shows the comparison of small developers' combined share in residential land purchases across provinces in China. We consider the 50 largest developers (including their subsidiaries) as large developers and all other developers as small developers. Panel a (b) considers the number (amount) of land parcel purchases. In both panels, the vertical line indicates the national average.

(a) Small developers' combined share in terms of number of land parcel purchases



(b) Small developers' combined share in terms of amount of land parcel purchases

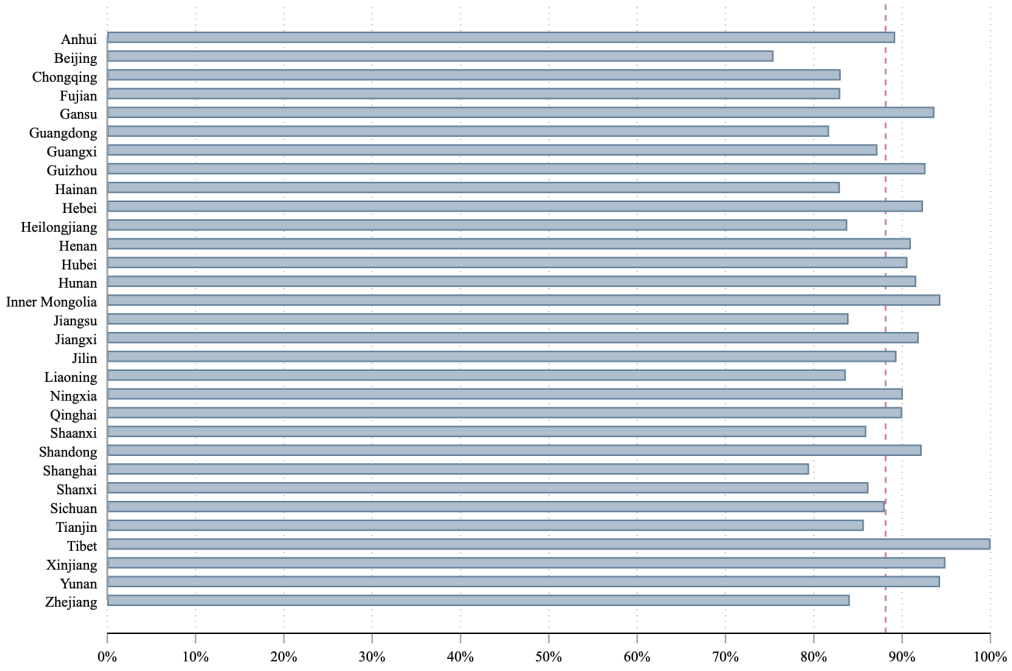


Figure 2: **Small developers' importance in residential housing legal disputes**

This figure shows the comparison of small developers' combined share in residential land purchases across provinces in China. We consider the 50 largest developers (including their subsidiaries) as large developers and all other developers as small developers. The vertical line indicates the national average.

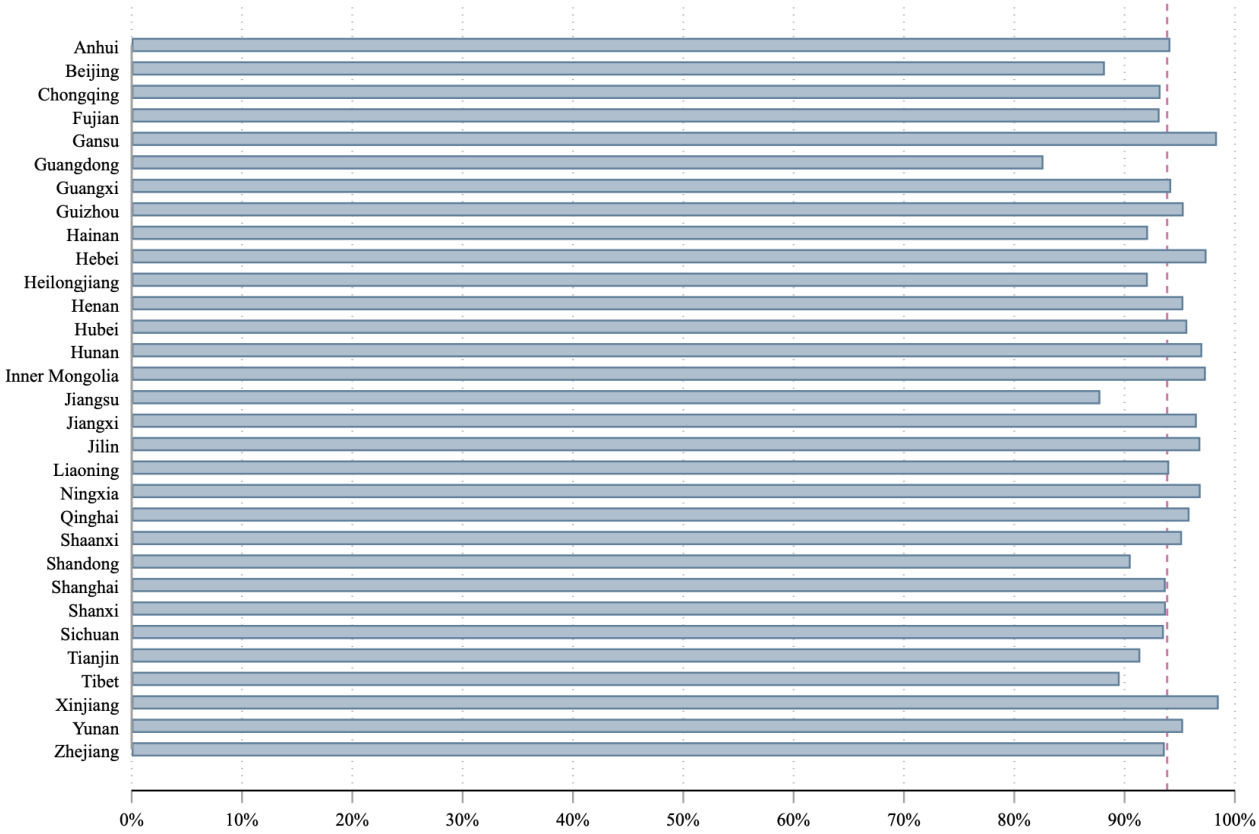


Figure 3: **National Team (NT)-backed firms over time**

This figure shows the time-series variation in the number of NT-backed non-real estate firms in our sample period.

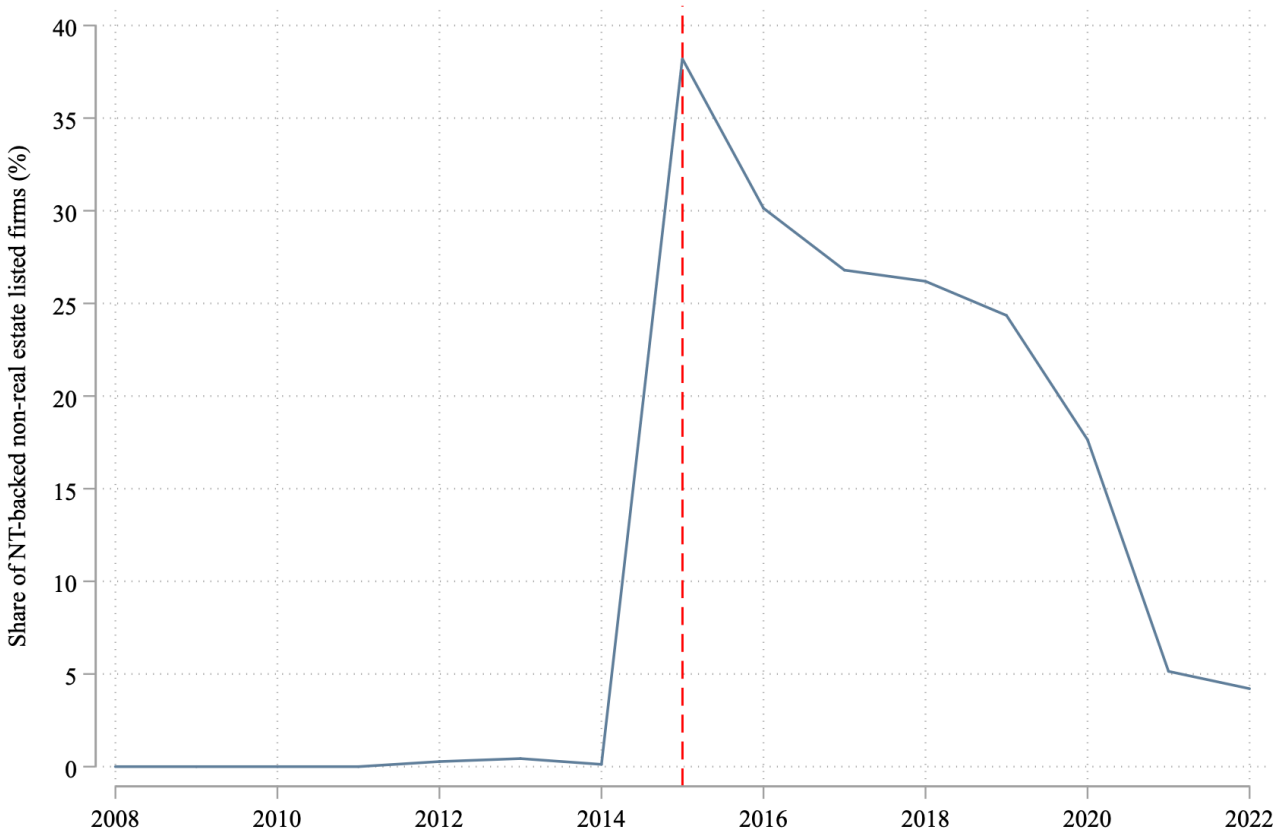


Table 1: **Size distribution of National Team (NT)-backed firms**

This table shows the number of NT-backed non-real estate firms by quintiles of market capitalization over time. For each quarter, we sort non-real estate listed firms in an ascending order of market capitalization and count the number of firms that are backed by the NT in each quintile. The market capitalization is from CSMAR and is defined as the product of trading volume weighted average close prices and the number of shares outstanding.

	0%-20%	20%-40%	40%-60%	60%-80%	80%-100%
2015Q3	150	127	160	232	360
2015Q4	136	115	129	212	346
2016Q1	135	122	122	199	341
2016Q2	112	115	128	199	329
2016Q3	101	115	127	192	331
2016Q4	89	111	119	184	333
2017Q1	66	103	125	198	343
2017Q2	55	116	127	198	367
2017Q3	48	113	126	203	364
2017Q4	42	106	126	197	364
2018Q1	48	108	125	192	359
2018Q2	58	114	124	186	353
2018Q3	67	111	128	193	359
2018Q4	70	114	118	201	355
2019Q1	57	113	137	186	363
2019Q2	62	114	139	178	363
2019Q3	66	107	124	174	359
2019Q4	59	111	128	182	356
2020Q1	61	98	134	181	341
2020Q2	55	96	126	180	343
2020Q3	46	93	143	161	353
2020Q4	31	71	104	136	329
2021Q1	9	20	53	75	256
2021Q2	6	18	36	55	185
2021Q3	4	12	35	45	152
2021Q4	1	10	26	40	147
2022Q1	1	8	16	39	151
2022Q2	2	8	16	35	143
2022Q3	2	6	16	35	142
2022Q4	3	3	18	32	145

Table 2: **Profitability distribution of National Team (NT)-backed firms**

This table shows the number of NT-backed non-real estate firms by quintiles of return on equity (ROE) over time. For each quarter, we identify non-real estate listed firms with negative and positive ROE respectively. We further sort firms with positive ROE in quintiles based on an ascending order of ROE and count the number of firms that are backed by the NT in each group.

	Negative ROE	0%-20%	20%-40%	40%-60%	60%-80%	80%-100%
2015Q3	168	171	157	170	188	227
2015Q4	124	180	156	150	178	200
2016Q1	166	158	150	127	178	186
2016Q2	114	168	146	139	174	193
2016Q3	97	176	140	137	171	183
2016Q4	63	193	143	151	167	145
2017Q1	120	152	131	129	152	181
2017Q2	83	163	151	151	150	204
2017Q3	71	166	172	135	141	199
2017Q4	63	186	169	129	144	171
2018Q1	110	152	143	136	141	181
2018Q2	73	157	159	141	146	182
2018Q3	77	156	170	147	135	185
2018Q4	103	160	169	141	125	162
2019Q1	91	171	150	141	141	162
2019Q2	74	165	171	154	134	158
2019Q3	66	150	164	156	138	156
2019Q4	83	167	174	134	147	131
2020Q1	214	120	128	128	117	108
2020Q2	112	144	145	134	125	140
2020Q3	88	138	149	143	126	152
2020Q4	62	119	129	118	118	125
2021Q1	46	56	59	78	85	89
2021Q2	16	51	53	56	57	67
2021Q3	20	47	45	36	45	55
2021Q4	24	41	45	28	45	41
2022Q1	27	35	29	37	43	44
2022Q2	24	23	33	42	35	47
2022Q3	22	24	32	37	38	48
2022Q4	24	29	32	41	33	42

Table 3: **Government support and diversifying real estate subsidiaries by non-real estate firms**

This table shows the effects of the National Team (NT) backing on diversification into the real estate sector by non-real estate listed firms, as measured by their setting up real estate subsidiaries. We limit the sample to non-ST, non-financial, and non-real estate listed firms and scale the number of real estate subsidiaries by the total assets of the parent firm in the same year. Column (1) shows the overall effects of NT backing, whereas columns (2) to (5) show the effects of NT backing by the geographical distribution of subsidiaries, i.e., whether the subsidiary is in the same city as the parent firm, in a different city but the same province, in a different province but the same region, or a different region from the parent firm. Regions refer to the four economic regions: eastern, central, western, northeastern. The sample period is 2008-2023. Firm and time fixed effects are included and denoted at the bottom. Standard errors are clustered at the firm level; the corresponding standard errors are reported in parenthesis. We use ***, ** and * to denote significance at 1%, 5% and 10% level (two-sided), respectively.

	Outcome variable: Scaled number of real-estate subsidiaries				
	(1) Across all locations	(2) In HQ city	(3) In HQ province diff. city	(4) In diff. province	(5) In diff. region
$NT_{i,t}$	2.538***	1.406**	0.244	0.502**	0.312
	(0.879)	(0.654)	(0.224)	(0.237)	(0.266)
Firm FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
R^2	0.662	0.666	0.567	0.494	0.531
Observations	41,862	41,862	41,862	41,862	41,862

Table 4: **Government support and land purchases by non-real estate firms**

This table shows the effects of the National Team (NT) backing on diversification into the real estate sector by non-real estate listed firms, as measured by their purchases of residential land parcels. We limit the sample to non-ST, non-financial, and non-real estate listed firms and scale the number of land purchase by the total assets of the parent firm in the same year. Column (1) shows the overall effects of NT backing, whereas columns (2) to (5) show the effects of NT backing by the geographical distribution of purchased land parcels, i.e., whether the purchased land parcel is in the same city as the parent firm, in a different city but the same province, in a different province but the same region, or a different region from the parent firm. Regions refer to the four economic regions: eastern, central, western, northeastern. The sample period is 2008Q2-2023Q4. Firm and time fixed effects are included and denoted at the bottom. Standard errors are clustered at the firm level; the corresponding standard errors are reported in parenthesis. We use ***, ** and * to denote significance at 1%, 5% and 10% level (two-sided), respectively.

	Outcome variable: Scaled land parcel purchases				
	(1) Across all locations	(2) In HQ city	(3) In HQ province diff. city	(4) In diff. province	(5) In diff. region
$NT_{i,t}$	0.079**	0.055*	0.003	0.005	0.010
	(0.036)	(0.029)	(0.015)	(0.007)	(0.013)
Firm FEs	Yes	Yes	Yes	Yes	Yes
Year-Quarter FEs	Yes	Yes	Yes	Yes	Yes
R^2	0.0386	0.0319	0.0365	0.0459	0.0305
Observations	158,753	158,753	158,753	158,753	158,753

Table 5: **Government support and real estate legal disputes involving non-real estate firms**

This table shows the effects of the National Team (NT) backing on the quality of diversification into the real estate sector by non-real estate listed firms, as measured by their involvement in real estate legal disputes as defendants. We limit the sample to non-ST, non-financial, and non-real estate listed firms. Column (1) shows the overall effects of NT backing, whereas columns (2) to (5) show the effects of NT backing by the geographical distribution of the legal disputes, i.e., whether the dispute is in the same city as the parent firm, in a different city but the same province, in a different province but the same region, or a different region from the parent firm. Regions refer to the four economic regions: eastern, central, western, northeastern. The sample period is 2008Q2-2023Q4. Firm and time fixed effects are included and denoted at the bottom. Standard errors are clustered at the firm level; the corresponding standard errors are reported in parenthesis. We use ***, ** and * to denote significance at 1%, 5% and 10% level (two-sided), respectively.

	Outcome variable: Probability of having legal disputes (%)				
	(1) Across all locations	(2) In HQ city	(3) In HQ province diff. city	(4) In diff. province	(5) In diff. region
$NT_{i,t}$	0.409*	0.100	0.071	0.249*	0.119
	(0.243)	(0.135)	(0.079)	(0.147)	(0.154)
Firm FEs	Yes	Yes	Yes	Yes	Yes
Year-Quarter FEs	Yes	Yes	Yes	Yes	Yes
R^2	0.284	0.225	0.227	0.266	0.241
Observations	158,753	158,753	158,753	158,753	158,753

Table 6: **Government support and external finance**

This table shows the effects of the National Team (NT) backing through firms financing channels. We limit the sample to non-ST, non-financial, and non-real estate listed firms and scale the monetary variables by the total assets of the parent firm in the same year. Columns (1) and (2) shows the effects of NT backing on short- and long-term borrowings of the parent firm, respectively, where as columns (3) to (8) show the effects of both probability and the amount of parent firms receiving financing via bank loans, bond issuance and equity issuance. The sample period is 2008Q2-2023Q4. Firm and time fixed effects are included and denoted at the bottom. Standard errors are clustered at the firm level; the corresponding standard errors are reported in parenthesis. We use ***, ** and * to denote significance at 1%, 5% and 10% level (two-sided), respectively.

	Borrowings		Bank loans		Bond issuance		Equity issuance	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Short-term	Long-term	Prob.(%)	Amount	Prob.(%)	Amount	Prob.(%)	Amount
$NT_{i,t}$	0.028	-0.011	-1.815***	-0.553***	2.636***	0.054***	-2.238***	-0.616***
	(0.028)	(0.020)	(0.603)	(0.207)	(0.445)	(0.020)	(0.181)	(0.053)
Firm FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0333	0.0426	0.280	0.213	0.264	0.128	0.0358	0.0318
Observations	158,753	158,753	158,757	158,753	158,757	158,753	158,757	158,753

Table 7: **Testing the effect of speculative motives**

This table presents results testing the role of the speculative motives in driving the effects of the National Team (NT) backing on diversification into the real estate sector by non-real estate listed firms. We limit the sample to non-ST, non-financial, and non-real estate listed firms and scale the number of real estate subsidiaries by the total assets of the parent firm in the same year. Column (1) shows the overall effects of NT backing, whereas columns (2) to (5) show the effects of NT backing by the geographical distribution of purchased land parcels, i.e., whether the purchased land parcel is in the same city as the parent firm, in a different city but the same province, in a different province but the same region, or a different region from the parent firm. Regions refer to the four economic regions: eastern, central, western, northeastern. The sample period is 2008-2023. Firm and time fixed effects are included and denoted at the bottom. Standard errors are clustered at the firm level; the corresponding standard errors are reported in parenthesis. We use ***, ** and * to denote significance at 1%, 5% and 10% level (two-sided), respectively.

	Outcome variable: Scaled number of real-estate subsidiaries				
	(1) Across all locations	(2) In HQ city	(3) In HQ province diff. city	(4) In diff. province	(5) In diff. region
$NT_{i,t}$	0.467	0.184	0.462	-0.281	-0.242
	(1.068)	(0.796)	(0.316)	(0.387)	(0.402)
HPI	-0.101	-0.024	0.011	-0.054*	-0.051*
	(0.066)	(0.050)	(0.010)	(0.029)	(0.027)
$NT_{i,t} \times$ HPI	0.098**	0.059*	-0.010	0.036*	0.025
	(0.045)	(0.032)	(0.007)	(0.018)	(0.016)
Firm FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
R^2	0.664	0.668	0.568	0.503	0.531
Observations	41,385	41,385	41,385	41,385	41,385

Table 8: **Testing the effect of local government's reliance on land sales**

This table presents results testing the role of local government's reliance on land sales in driving the effects of the National Team (NT) backing on diversification into the real estate sector by non-real estate listed firms. Land reliance is defined as fraction of income through land transactions in the difference between government expenditure and income. We limit the sample to non-ST, non-financial, and non-real estate listed firms and scale the number of real estate subsidiaries by the total assets of the parent firm in the same year. Column (1) shows the overall effects of NT backing, whereas columns (2) to (5) show the effects of NT backing by the geographical distribution of purchased land parcels, i.e., whether the purchased land parcel is in the same city as the parent firm, in a different city but the same province, in a different province but the same region, or a different region from the parent firm. Regions refer to the four economic regions: eastern, central, western, northeastern. The sample period is 2008-2023. Firm and time fixed effects are included and denoted at the bottom. Standard errors are clustered at the firm level; the corresponding standard errors are reported in parenthesis. We use ***, ** and * to denote significance at 1%, 5% and 10% level (two-sided), respectively.

	Outcome variable: Scaled number of real-estate subsidiaries				
	(1) Across all locations	(2) In HQ city	(3) In HQ province diff. city	(4) In diff. province	(5) In diff. region
$NT_{i,t}$	2.540***	1.482**	0.247	0.467**	0.261
	(0.884)	(0.658)	(0.228)	(0.235)	(0.264)
Land reliance	-1.205*	-0.720**	-0.492	-0.120	0.175
	(0.623)	(0.325)	(0.303)	(0.093)	(0.363)
$NT_{i,t} \times$ Land reliance	1.179**	0.423*	0.341	0.196*	0.188
	(0.596)	(0.242)	(0.250)	(0.116)	(0.168)
Firm FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
R^2	0.664	0.668	0.568	0.502	0.530
Observations	41,363	41,363	41,363	41,363	41,363

Table 9: **Heterogeneity by firm ownership type**

This table decomposes the effects of NT backing on the scaled number of real estate subsidiaries, the scaled number of land parcel purchases, and the probability of having legal disputes by firm type. We classify firms into central SOE, local SOE and private by top 10 shareholders and actual controllers combined that listed firms are obligated to disclose. We limit the sample to non-real estate firms and scale the number of real-estate subsidiaries and land parcel purchases by the total assets of the parent firm in the same year. The sample period for column (1) is 2008-2023, and for columns (2) to (3) is 2008Q2-2023Q4. All columns include firm and time FEs. Standard errors are clustered at the firm level; the corresponding standard errors are reported in parenthesis. We use ***, ** and * to denote significance at 1%, 5% and 10% level (two-sided), respectively.

	(1) Scaled number of real-estate subsidiaries	(2) Scaled land parcel purchases	(3) Probability of having legal disputes (%)
$NT_{i,t} \times$ Central SOE	4.010***	0.174***	0.810
	(1.246)	(0.035)	(0.607)
$NT_{i,t} \times$ Local SOE	2.540**	0.089	0.917*
	(1.151)	(0.070)	(0.517)
$NT_{i,t} \times$ Private firm	1.977*	0.036	-0.041
	(1.056)	(0.043)	(0.239)
Firm FEs	Yes	Yes	Yes
Year FEs	Yes	No	No
Year-Quarter FEs	No	Yes	Yes
R^2	0.662	0.0386	0.284
Observations	41,862	158,753	158,757

Table 10: **Performance consequences of diversification into real estate**

Panel (a) shows the effects of National Team (NT) backing on quarterly profitability measures of non-real estate listed firms, whereas Panel (b) decomposes the effects of NT backing prior to and after the diversification into real estate of non-real estate listed firms. Profitability is measured by return on assets (ROA), return on equity (ROE), return on invested capital (ROIC), net profit margin, and operating revenue scaled by total assets of the same quarter. The sample period is 2008Q2-2023Q4. Firm and time fixed effects are included and denoted at the bottom. Standard errors are clustered at the firm level; the corresponding standard errors are reported in parenthesis. We use ***, ** and * to denote significance at 1%, 5% and 10% level (two-sided), respectively.

(a) Quarterly profitability

	(1)	(2)	(3)	(4)	(5)
	ROA	ROE	ROIC	Net profit margin	Scaled operating revenue
$NT_{i,t}$	-0.488***	-0.974***	-0.643***	-0.973***	-1.509***
	(0.071)	(0.145)	(0.088)	(0.329)	(0.469)
Firm FEs	Yes	Yes	Yes	Yes	Yes
Year-Quarter FEs	Yes	Yes	Yes	Yes	Yes
R^2	0.442	0.312	0.426	0.388	0.760
Observations	158,757	158,757	158,757	158,757	158,752

(b) Quarterly profitability on pre- and post-diversification

	(1)	(2)	(3)	(4)	(5)
	ROA	ROE	ROIC	Net profit margin	Scaled operating revenue
$NT_{i,t}$ ×Pre-diversification	-0.161	-0.042	-0.094	0.243	-1.734*
	(0.209)	(0.469)	(0.273)	(1.084)	(1.013)
$NT_{i,t}$ ×Post-diversification	-0.277**	-0.928***	-0.529***	0.343	-3.067***
	(0.109)	(0.214)	(0.134)	(0.493)	(0.795)
Firm FEs	Yes	Yes	Yes	Yes	Yes
Year-Quarter FEs	Yes	Yes	Yes	Yes	Yes
R^2	0.441	0.312	0.425	0.388	0.760
Observations	158,757	158,757	158,757	158,757	158,752