

The Real Estate Policy Shift in China and State-Owned Brokerage Behavior

Yuanhao Xiang

International Business School, University of International Business and Economics

yuanhao_uibe@foxmail.com

Yuying Zhao

International Business School, University of International Business and Economics

zhaoyuyinguibe@163.com

Xuejiao Liu

International Business School, University of International Business and Economics

xuejiaoliu@uibe.edu.cn

Abstract

This study examines how the 2021 real estate policy shift in China influenced state-owned brokerages' (SOBs) macroeconomic forecasting and investment behavior. We find that SOBs exhibited greater optimism in forecasting real estate development investment growth and increased their shareholdings in real estate firms, aligning with government objectives. These effects are more pronounced in regions with stronger government intervention and among smaller brokerages with less reputational pressure. Our findings highlight the dual role of SOBs as both market intermediaries and policy tools, offering insights into the interplay between state influence and financial market behavior.

Keywords: state-owned brokerage; policy bias; macroeconomic forecasting; brokerage investment

*The meeting emphasized that next year's economic work should prioritize stability while seeking progress. **All regions and departments must take responsibility for maintaining macroeconomic stability**, and all sectors should actively introduce policies conducive to economic stability, with policy efforts being appropriately proactive.*

...

*It is essential to uphold the principle that "housing is for living in, not for speculation," **strengthen expectations management, and explore new development models**. Efforts should be made to promote both renting and purchasing, accelerate the development of the long-term rental housing market, advance the construction of affordable housing, and **support the commercial housing market** in better meeting reasonable housing demands of buyers. Tailored policies should be implemented for different cities to foster a virtuous cycle and healthy development of the real estate industry.*

—The Central Economic Work Conference, 2021¹

1 INTRODUCTION

Investor expectations in financial markets are inherently endogenous to the socio-economic and political environments in which they operate. These expectations are shaped by individual knowledge bases and the availability of information (Botos & Koppl, 1993; O'Driscoll & Rizzo, 2016). In well-ordered systems, individuals are better equipped to form reliable assumptions about the future. Coordinated policy initiatives, particularly those implemented in a stable environment, often achieve desired outcomes (Hayek & Streit, 2003). Stability in investor expectations, therefore, depends on consistent political and economic environment and accessible information.

¹ The Central Economic Work Conference is an annual meeting in China of critical importance for economic policymaking, typically held in December. Its main functions include: reviewing the year's economic work; planning key economic priorities for the following year; deploying major economic reforms and policy adjustments. The content of the 2021 conference can be found at https://www.gov.cn/xinwen/2021-12/10/content_5659796.htm.

In emerging market economies, however, the interplay between financial liberalization (Kaminsky & Schmukler, 2008) and information asymmetry introduces heightened short-term financial uncertainty, often impeding the formation of stable expectations. Policy shifts, while intended to foster long-term growth, can amplify uncertainty (Hoffmann & Urbansky, 2015), influencing the learning and judgment processes of investors.

This dynamic becomes particularly significant during major policy changes in emerging market's critical sectors, such as real estate sector in China, where government interventions can profoundly reshape financial market. The real estate sector and its extensive industrial chain contributes over 30% of China's GDP, serving as a key driver of urbanization and economic activity through its extensive value chain(Cai et al., 2020). It primarily stimulates downstream industries(Huang et al., 2021) , highlighting its critical role in national economic growth.

China's economic policies have a profound impact on the real estate market. Both broad monetary policies(Xu & Chen, 2012), and specific measures, such as purchase restriction policies(Y. Li et al., 2020) have been key drivers behind fluctuations in real estate prices. By prioritizing the real estate sector and implementing targeted regulatory measures, China achieved a period of rapid growth in both its real estate market and overall economy following the 2008 global financial crisis.

The real estate sector, along with its extensive industrial chain, contributes over 30% of China's overall GDP, serving as a key driver of urbanization and economic activity through its extensive value chain(Cai et al., 2020). It primarily stimulates

downstream industries(Huang et al., 2021) , highlighting its critical role in national economic growth.

Between 2017 and 2021, the government introduced stringent measures to curb the real estate bubble fueled by high leverage and overexpansion. During this period, policies were focused on suppressing the market prices of commercial housing, advancing the construction of residential housing rather than commercial housing, and restricting the financing scale and channels of real estate companies.

The tightening tendency of real estate policy started with the December 2016 Central Economic Work Conference (CEWC), which first introduced the concept that “house is for living in, not for speculation”.² And the Ministry of Housing and Urban-Rural Development (MOHURD) further reinforced this idea in May 2018 by expanding the development of residential housing land and rental housing market, and curbing the overheating of the commercial housing market to prevent high housing prices.³ In May 2019, the China Banking and Insurance Regulatory Commission (CBIRC) and the National Development and Reform Commission (NDRC) jointly imposed strict restrictions on real estate financing across sectors such as banking, trusts, asset management, and financial leasing.⁴⁵ In August 2020, the MOHURD and the People's Bank of China further strengthened real estate financing regulations

² The 2016 CEWC content can be viewed at https://www.gov.cn/xinwen/2016-12/16/content_5149018.htm.

³ The Ministry of Housing and Urban-Rural Development (MOHURD) is a government agency in China responsible for overseeing the country's urban and rural development, housing policy, and construction. The specific content can be viewed at https://www.mohurd.gov.cn/gongkai/zhengce/zhengcefilelib/201805/20180520_236128.html.

⁴ The China Banking and Insurance Regulatory Commission (CBIRC) is a regulatory body in China that oversees the banking and insurance sectors. The specific content can be viewed at https://www.gov.cn/xinwen/2019-05/17/content_5392623.htm.

⁵ The National Development and Reform Commission (NDRC) is one of the key government agencies in China responsible for economic planning, policy formulation, and guiding national development. The specific content can be viewed at https://www.gov.cn/xinwen/2019-07/13/content_5408912.htm.

by setting the “Three Red Lines.”⁶⁷ By December 31, 2020, the PBOC and the CBIRC established limits on the proportion of real estate loans and individual housing loans for various financial institutions.⁸ Overall, from 2016 to 2020, China's real estate policies became increasingly tightening.

However, when signs of the real estate bubble's collapse, exemplified by the bankruptcy of real estate firms like Evergrande, emerged in 2021 after years of rapid expansion, the Chinese government shifted its approach from a “curbing hand” to a “helping hand” during the December 2021 CEWC. Although this meeting maintained the stance of “housing is for living, not for speculation,” it reflected a shift in attitude towards the real estate sector. It called for “strengthening expectations management and exploring new development models” in the real estate sector. The meeting also emphasized the need to “support the commercial housing market and better meet the reasonable housing needs of homebuyers.”⁹

While this meeting alone may not fully indicate a policy shift, the successive policies in 2022 would justify it as a turning point. The PBOC announced two Reserve Requirement Ratio (RRR) cuts and three Loan Prime Rate (LPR) cuts in 2022, which reduced the cost of overall loan borrowing, benefiting the high-leverage

⁶ The People's Bank of China (PBOC) is the central bank of China, which is responsible for implementing monetary policy, regulating financial institutions, managing the currency, and maintaining financial stability. The specific content can be viewed at https://www.mohurd.gov.cn/xinwen/gzdt/202008/20200823_246876.html and <https://caifuha0.eastmoney.com/news/20201119131321335018140>.

⁷ The “Three Red Lines” policy was introduced in August 2020 by the PBOC and NDRC for real estate companies. The policy sets the following financial thresholds: the debt-to-asset ratio, excluding advance receipts, should not exceed 70%; the net debt ratio should not exceed 100%; and the cash-to-short-term debt ratio must be greater than 1.

⁸ The specific content can be viewed at https://www.gov.cn/zhengce/zhengceku/2021-01/01/content_5576085.htm.

⁹ It is important to note that 2016 and 2021 mark the beginning of China's 13th Five-Year Plan and 14th Five-Year Plan, respectively. Therefore, the CEWC meetings in these two years are of particularly significant importance.

real estate firms.¹⁰ In the same year, the PBOC and the CBIRC also introduced 16 financial support measures for real estate.¹¹ The region-specific easing of house purchase restrictions are also widely implemented in 2022¹². These policies demonstrated a clear shift toward supporting or, in a crisis-based context, saving the real estate sector, reinforcing the idea that the CEWC at the end of 2021 acted as a key policy signal, indicating a significant change in real estate policy. At this critical turning point, stabilizing housing prices, restoring investor confidence in the real estate market, and ensuring broader capital market stability became top priorities for the government's policy agenda.

State-owned brokerages (SOBs) occupy a unique position in China's financial ecosystem, functioning both as market information intermediaries (Bradshaw, 2011; So, 2013) and as extensions of government policy (Pittman et al., 2024). As state-directed entities, SOBs are often tasked with aligning their operations with national economic goals, particularly during periods of market instability (Youvan, 2024). Their alignment with governmental directives grants them a dual role in influencing market sentiment and stabilizing financial markets.

One critical function of SOBs lies in their ability to disseminate information. As intermediaries between firms and investors, they shape market perceptions through their macroeconomic forecasts and investment analyses. Research has shown that

¹⁰ The PBOC announced the two RRR cuts on Apr. 15th (lowered by 0.25%) and Nov. 15th (lowered by 0.25%) in 2022. And the three LPR cuts were announced on Jan. 20th (1-year LPR lowered by 0.1%, 5-year by 0.05%), May 20th (1-year LPR lowered by 0.05%, 5-year by 0.15%) and Aug. 22nd (5-year LPR lowered by 0.15%) in 2022.

¹¹ The 16 specific measures by the PBOC and the CBIRC can be viewed at <http://camlmac.pbc.gov.cn/zhengwugongkai/4081330/4406346/4693549/4720053/index.html>.

¹² For example, Zhengzhou, Harbin, Wuhan, Foshan, Qingdao and many other cities in China all cancelled or relaxed their sales restriction policies on real estate in 2022.

brokerages, as information providers, play a pivotal role in guiding investor behavior (Maggio et al., 2019; So, 2013; Michaely, 2005), particularly during periods of uncertainty. Analysts in SOBs, influenced by their state affiliations, may amplify optimistic narratives to stabilize investor confidence, a practice that aligns closely with government objectives during economic downturns.

In addition to their informational role, SOBs contribute to market stability through strategic investment activities. By channeling funds into key sectors, such as real estate, they act as stabilizing agents, signaling confidence in market recovery. This dynamic is particularly evident during economic crises, where state-directed financial institution investment has historically been deployed to reinforce market stability (Acharya et al., 2016; Mishkin, 2001). SOBs' investment strategies often reflect policy priorities, further demonstrating their alignment with national economic objectives.

Through their dual role in disseminating optimistic information and making strategic investments, SOBs serve as critical tools for aligning market sentiment with government policy. In the context of the 2021 real estate policy shift, SOBs likely played a pivotal role in restoring investor confidence by bridging the gap between policy intent and market perception. By examining their forecasting behavior and investment strategies, this study sheds light on the broader implications of SOBs as instruments of economic policy.

This study aims to examine the behavior of state-owned brokerages (SOBs) in response to China's 2021 real estate policy shift, focusing specifically on their

macroeconomic forecasting and investment behavior. The research investigates how SOBs adjusted their forecasts and investment behaviors to align with government objectives, thereby contributing to market stability during a critical period for the real estate sector.

Specifically, this study addresses a notable gap in the literature regarding SOBs as instruments of government economic policy. While prior studies have explored the roles of state-owned enterprises (Yu, 2019; L.-W. Lin, 2017; Milhaupt & Pargendler, 2017), state-owned banks(Z. Li et al., 2023; Deng et al., 2015) and brokerage's micro forecasting bias(Kong et al., 2024; Pittman et al., 2024; Cao et al., 2022) as polical tools, less attention has been given to SOBs' policy-driven macroeconomic forecasting and strategic investment behavior. By investigating SOBs' responses to the 2021 policy shift, this study contributes to a deeper understanding of their dual role in influencing investor confidence and aligning market sentiment with state objectives.

Furthermore, this study provides valuable insights into the political economy of state-directed financial institutions and their role in promoting financial stability. In emerging markets like China, where government intervention is a key mechanism for maintaining market equilibrium, understanding SOBs' roles is critical. This research sheds light on how SOBs' optimistic forecasts and targeted investments attempt to stabilize markets during periods of uncertainty, offering practical insights for policymakers on leveraging financial intermediaries to support economic policy objectives.

2 BACKGROUND AND HYPOTHESES

2.1 Institutional background

Given the pivotal role of the real estate sector in driving China's economy, it is no exaggeration to call it the lifeblood of the nation's economic growth. Between 2016 and 2021, the government introduced stringent measures to curb speculative behavior and stabilize the housing market. However, these efforts failed to contain the relentless growth of a real estate bubble fueled by high leverage and overexpansion. When signs of the bubble's collapse, exemplified by the bankruptcy of real estate firms like Evergrande, emerged in 2021 after years of rapid expansion, the Chinese government swiftly shifted its approach from a "curbing hand" to a "helping hand." At this critical juncture, stabilizing housing prices, restoring investor confidence in the real estate market, and ensuring broader capital market stability became top priorities for the government's policy agenda.

2.2 Government policy, state-ownership, and macroeconomic analysts' forecast optimism

A growing body of literature suggests that official government forecasts of macroeconomic indicators, such as GDP growth and fiscal balance, tend to exhibit optimism bias compared to private sector forecasts (Jonung & Larch, 2006; Frankel & Schreger, 2016). Political factors, particularly election cycles, have been shown to partially explain this phenomenon in various contexts, including the European Union (Beetsma et al., 2013) and the United States (Boylan, 2008).

While performing forecasts, analysts affiliated with brokerages must navigate a trade-off between maintaining their professional credibility and responding to external influences, such as commission-based incentives and government pressure (Cowen et al., 2006; Jackson, 2005). For SOBs, governmental directives often take precedence, resulting in a more pronounced optimistic bias. Recent studies corroborate this tendency, with evidence from China indicating that analysts in state-controlled brokerages exhibit optimism bias during politically significant events (Pittman et al., 2024; Cao et al., 2022).

Given the inherent political alignment of government macroeconomic forecasts, coupled with the observed optimistic tendencies among analysts at SOBs, it is plausible to posit a similar forecast bias at the macroeconomic level. In the context of China's real estate sector, where investor confidence required stabilization following the 2021 industry crisis and policy shift, SOBs could play a pivotal role. By releasing optimistic macroeconomic forecasts, these entities may help maintain positive investor expectations and align market sentiment with broader policy objectives. To empirically test the macroeconomic forecasting behavior of SOBs, we propose the following hypothesis:

***H1:** The implementation of the policy has a greater effect on the real estate macroeconomic forecast optimism of SOBs compared to non-SOBs.*

2.3 Government policy, state-ownership, and institutional investment

The strategic investments made by state-owned entities serve a purpose of boosting investor confidence during economic crises. For instance, Holland (2019)

demonstrates how national-level investment activities can effectively stabilize market sentiment and reinforce confidence among investors. This dynamic suggests that SOBs, as extensions of government policy, may similarly adjust their investment strategies to align with industry-specific policies.

In China, this alignment reflects a broader trend of state-directed financial activity. Research highlights the increasing role of institutional investors in corporate governance, with the Chinese Communist Party leveraging these entities to stabilize markets during periods of economic uncertainty (L. Lin & Puchniak, 2022). For instance, state-controlled banks have shifted their investment focus toward local government bonds, deeming them risk-free assets, in response to policy directives (Z. Li et al., 2023).

In the specific context of China's real estate sector, where policy support became imperative following the 2021 market crisis, SOBs likely played a critical role as instruments of state economic strategy. Through such efforts, SOBs not only fulfill their political mandate but also contribute to stabilizing investor expectations and market dynamics. To examine the investment preferences of SOBs in response to the policy shift, we posit:

***H2:** The implementation of the policy has a greater effect on SOBs' investment in the real estate industry compared to non-SOBs.*

3 RESEARCH DESIGN

3.1 Empirical models

This study employs an empirical research methodology. Specifically, it uses the Difference-in-Differences (DID) approach to examine the impact of the policy shift in China's real estate sector at the end of 2021 on the behavior of state-owned brokerages. The study first investigates the change in the optimism of macroeconomic analysts' real estate forecasts at state-owned brokerages before and after the policy shift, and then explores the changes in the real estate holdings of these brokerages that participated in real estate industry forecasts.

3.1.1 Empirical model to test H1

We use the following DiD model to test H1, which concerns the impact of real estate policy shift on SOB macroeconomic forecast optimism:

$$\begin{aligned}
 Optimism_{i,t} = & \alpha_0 + \alpha_1 SOB_{i,t} + \alpha_2 POST_{i,t} + \alpha_3 SOB_{i,t} * POST_{i,t} \\
 & + \alpha_4 LnHorizon_{i,t} + \alpha_5 LnPeers_{i,t} + \alpha_6 AnlstRange_{i,t} \\
 & + \alpha_7 AnlstExp_{i,t} + \alpha_8 BrokerSize_{i,t} + \alpha_9 GDP_Growth_{i,t} \\
 & + Fixed\ Effects + Error\ Term,
 \end{aligned}
 \tag{1}$$

where the dependent variable $Optimism_{i,t}$ measures the level of optimism in the analyst team's forecasts relative to the industry average. The test variable $SOB_{i,t}$ represents state ownership in brokerages and is defined in two ways: $SOB_Pct_{i,t}$, a continuous variable indicating the percentage of state-held shares among the broker's top 10 shareholders, or $SOB_30_{i,t}$, a dummy variable indicating whether this percentage exceeds 30%.

Control variables are selected based on Pittman et al.(2024), which examines politically

driven micro forecast optimism. Additionally, $GDP_Growth_{i,t}$ is included to account for the general macroeconomic environment influencing macro analysts' forecasts.

3.1.2 Empirical model to test H2

Similarly, we use the following DiD model to test H2, which concerns the impact of real estate policy shift on SOB investment in real estate sector:

$$\begin{aligned}
 ChgType_{i,t} = & \alpha_0 + \alpha_1 SOB_{i,t} + \alpha_2 POST_Y_{i,t} + \alpha_3 SOB_{i,t} * POST_Y_{i,t} \\
 & + \alpha_4 LnAvgHorizon_{i,t} + \alpha_5 LnAvgPeers_{i,t} + \alpha_6 BrokerRange_{i,t} \\
 & + \alpha_7 AvgAnlstExp_{i,t} + \alpha_8 BrokerSize_{i,t} \\
 & + \alpha_9 Avg_GDP_Growth_{i,t} + \alpha_{10} FirmLnAssets_{i,t} \\
 & + \alpha_{11} Firm_LEV_{i,t} + \alpha_{12} Firm_ROA_{i,t} + \alpha_{13} Firm_MB_{i,t} \\
 & + \alpha_{14} FirmLargest_{i,t} + \alpha_{15} FirmMgtInv_{i,t} + \alpha_{16} FirmInsInv_{i,t} \\
 & + Fixed\ Effects + Error\ Term,
 \end{aligned}
 \tag{2}$$

where the dependent variable $ChgType_{i,t}$ captures the direction of change in brokers' shareholdings in real estate firms compared to the previous year. It takes values of -1, 0, and 1, representing a decrease, no change, and an increase, respectively.

In H2, the analyst-month level controls used in H1 are either remeasured or averaged at the broker-year level. Additionally, common firm-level controls are included to account for firm size, performance, and shareholding characteristics. It is important to note that $POST_Y_{i,t}$ is measured annually, unlike $POST_{i,t}$ in H1, due to the broker-year data structure.

3.2 Sample selection

We obtained data on macroeconomic forecast reports by Chinese brokerage analysts from 2010 to 2023 through the WIND database. Data on the top ten shareholders of brokerages and real estate firms, actual real estate development investment values, GDP figures, and firm-level financial control variables were sourced from the China Stock Market & Accounting Research (CSMAR) database.

3.2.1 Sample selection of H1

TABLE 1 outlines the sample selection process for H1. The dataset, sourced from the Chinese Macroeconomic Forecast Database, records various forecast values issued by macroeconomic analyst teams under specific brokerages. Among these, there are 891 forecast values related to REDIG (Real Estate Development Investment Growth), spanning the years 2021 to 2024. Prior to 2021, there is no disaggregated data for REDIG; instead, only the broader indicator “Fixed Asset Investment Growth Rate” is available, which encompasses REDIG as well as “Manufacturing Investment Growth Rate” and “Infrastructure Investment Growth Rate.”

The policy event took place in December 2021. However, specific forecasts for the real estate sector, particularly “real estate development investment growth (REDIG),” are only available starting from April 2021 and are limited in number (891 effective forecasts). Additionally, macroeconomic forecasts tend to be more frequent toward the end of the year. To balance period symmetry and ensure sufficient observations, we set the empirical period to span 21 months, from April 2021 to December 2022.

Specifically, REDIG forecasts include “annual growth rate” and “year-to-date

growth rate” for a given month. Actually, the “annual growth rate” of a certain year and the “year-to-date growth rate” for December of the same year are identical. As a result, duplicate forecast points of this nature within the same report were removed. Additionally, some forecast points were excluded because the corresponding brokerage lacked information on its top ten shareholders in annual disclosures, or the analyst team did not record the names of individual analysts. These data points were also omitted. The descriptive statistics are shown in TABLE 2.

3.2.2 Sample selection of H2

TABLE 3 presents the sample selection process for H2. We selected year-end shareholding data from the database to ensure comparability. Additionally, we verified the names of shareholders to ensure that the holdings were associated with brokerages that had issued forecasts in H1. If multiple shareholder names corresponding to the same brokerage were identified for a single firm (e.g., “XXX securities” and “XXX securities employee shareholding plan”), we consolidated them into a single record, with the shareholding percentage calculated as the sum of these holdings.

Subsequently, we retained only real estate firms as the shareholding targets and focused on brokerage-firm-year structured data in 2020 and later. We then filled in missing shareholding data for brokerage-firm-year combinations by assigning a value of zero, allowing us to calculate the dependent variable, *ChgType*, which captures the change in shareholding of a real estate firm by a forecasting brokerage.

In the end, consistent with H1, we keep the observations of year 2021 and 2022, and dropped the observations with missing controls. The descriptive statistics are shown in TABLE 4.

4 EMPIRICAL RESULTS

4.1 Policy impact on SOB macro forecast optimism on real estate indicator

4.1.1 Baseline results of H1

As shown in TABLE 5, the interaction term between the policy dummy variable and the measures [both (3) continuous and (2) binary] of state-owned brokerages exhibits a significantly positive coefficient. The Optimism is a consensus-based measure, using forecasted REDIG minus the average forecast value of the same year-month across all forecast reports. This suggests that, following the policy implementation, state-owned brokerages issued more optimistic forecasts regarding real estate indicators compared to non-state-owned brokerages.

Specifically, *Optimism* is calculated by the forecasted REDIG value minus the average forecasted value of the same target across all reports. *SOB_Pct* represents the percentage of state-held shares among a brokerage's top ten shareholders, while *SOB_30* is a binary variable indicating whether *SOB_Pct* exceeds 30%. The results remain consistent for alternative thresholds such as *SOB_20* and *SOB_40*.

We also checked the parallel trend in H1's DID design, by replacing the *SOB_30* dummy variable by period dummy variables *Pre2T*, *Pre1T*, and *Post1T*, representing the intervals [-8, -5], [-4, -1], and [1, 4] months relative to the policy time point,

respectively, with all intervals being inclusive (the beginning of the sample is 8 months before the policy). The regression result shows that the period *Pre2T* and *Pre1T* both have insignificant coefficients, while the *Post1T* reports a positive significant coefficient.

4.1.2 Alternative measures of SOBs in H1

TABLE 6 presents two alternative measures of state-owned brokerages (SOBs), using thresholds of 20% and 40% for the shareholding ratio of state-owned entities among the top ten shareholders of a brokerage. The results remain robust under these alternative definitions.

4.1.3 Falsification test of H1

TABLE 7 shows falsification tests for Optimism, using *GDP_Optim* and *nonRE_Optim* as alternative measures. *GDP_Optim* represents the optimism in GDP growth forecasts, while *nonRE_Optim* pools optimism for manufacturing investment growth and infrastructure investment growth—two indicators parallel to REDIG (Real Estate Development Investment Growth), which together form the broader category of "Fixed Asset Investment" in China's macroeconomic forecasts. The results indicate that when GDP or the pooled non-REDIG indicators are used as dependent variables, the SOB variable coefficients are insignificant. This suggests that the post-policy optimism bias is specific to real estate indicators and does not extend to broader economic dimensions.

4.2 Policy impact on SOB investment in real estate firms

4.2.1 Baseline results of H2

In TABLE 8, the interaction term between the policy dummy variable and the two measures of state-owned brokerages also exhibits a significantly positive coefficient like H1, which suggests that state-owned brokerages more actively invested in real estate sectors compared to non-state-owned brokerages following the policy.

Specifically, *ChgType* is a discrete variable, where 1 indicates an increase in *Pct* compared to previous-year *Pct* of the firm, -1 and 0 indicate a decrease and no change, respectively. *SOB_Pct* and *SOB_30* remains the same measurements as H1, and the analyst-month level controls used in H1 are either remeasured or averaged at the broker-year level.

4.2.2 Alternative measures of SOBs in H2

TABLE 9 conducts robustness checks for H2. Like the approach in H1, the SOB measure is replaced with *SOB_20* and *SOB_40*, and the interaction term coefficients remain significantly positive.

4.2.3 Alternative measures of share-holding change in H2

In TABLE 10, the dependent variable *ChgType* is replaced with *Pct*, which represents the brokerage's annual shareholding ratio in real estate firms. The baseline results hold under this adjustment.

5 ADDITIONAL ANALYSES

5.1 Additional test for H1

TABLE 11 introduces the dependent variable *Bias*, measuring the forecast bias of brokerage macro-analysts. *Bias* is calculated as the difference between the REDIG

forecast value and the actual value of the indicator for the forecasted period. The results show that, post-policy, state-owned brokerages exhibit greater forecast bias compared to their peers.

5.2 Cross-sectional test for H1

TABLE 12 demonstrates that policy and state ownership significantly impact forecast optimism only among smaller brokerages. This is likely due to reputational considerations. As discussed earlier in Table 11, state-owned brokerages became more optimistic post-policy while simultaneously exhibiting greater positive bias. For larger brokerages, reputational pressures are more substantial, making them less willing to compromise their accuracy by issuing biased forecasts, even under policy influence.

5.3 Cross-sectional test for H2

In TABLE 13, the grouping is based on the “Marketization Index” introduced in Fangang et al.’s (2001) report¹³, *NERI Index of Marketization of China's Provinces*. Specifically, we group regions using the sub-index "Government-Market Relations," which measures government intervention in economic activities. This sub-index accounts for factors such as the ratio of government fiscal revenue to GDP and the role of market mechanisms in price formation. A higher value indicates stronger market forces and less government intervention.

The results show that in regions with a lower "Government-Market Relations" index (indicating stronger government intervention), state-owned brokerages exhibit more aggressive real estate investments post-policy. We attribute this to the greater influence

¹³ Fan, G., Wang, X., & Zhu, H. (2003). NERI index of marketization of China’s provinces. *National Economic Research Institute, Beijing*.

of state-owned shareholders on investment decisions in such regions.

5.4 Linkage of forecasting and investing behavior

As shown in TABLE 14, to explore whether the state-owned brokerages that issued optimistic real estate forecasts post-policy (as identified in H1) also made more aggressive real estate investments (as per H2), we grouped brokerages based on their *Optimism* in H1. We calculated the difference between each brokerage's average optimism before and after the policy, ranking all brokerages and dividing them into two groups by the median: *MoreOptim* equals 1 for brokerages with greater increases in optimism and 0 for those with smaller increases. We then combined this 0-1 variable with *SOB_30*, creating the explanatory variable *Optim_SOB30*, which equals 1 if both *MoreOptim* and *SOB_30* equal 1.

In an alternative measure, *Optim_SOB30_Alt*, we only consider the average post-policy optimism ranking. The results remain consistent. Further robustness tests using *Optim_SOB20*, *Optim_SOB20_Alt*, *Optim_SOB40*, and *Optim_SOB40_Alt* also yield similar results.

5.5 Influence of SOBs' share holding

TABLE 15 examines the broader impact of SOB shareholding on firms. We analyze how the proportion of state-owned brokerages among a firm's total shareholding affects firm behavior. This is measured by two variables: a continuous variable *SOB_Ratio*, representing the ratio of SOB-held shares to the firm's total shareholding, and a categorical variable *SOB_Stage* where **0** indicates no SOB-held shares, **1** indicates a ratio between 0 and the median *SOB_Ratio* for all firms that year, and **2** indicates a ratio

exceeding the median.

For dependent variables, we study *HouseInc* and *HouseDec*, representing the “Increasing Value of the Year” and “Decreasing Value of the Year” values for the “Houses and Buildings” item, scaled by the “Beginning Balance” value of “Fixed Assets” item in the firm's annual financial report appendix. The results show that firms with higher SOB shareholding ratios exhibit significantly higher increases in their houses and buildings values during the year, while decreases remain insignificant. This suggests that SOBs, as shareholders, may influence firms to support the real estate sector by increasing investments in houses and buildings.

6 CONCLUSIONS

We use the 2021 real estate policy shift in China as an exogenous event to examine its effect on the macroeconomic forecasting and investment behavior of state-owned brokerages (SOBs). We find that, following the policy, SOBs demonstrate significantly greater optimism in their forecasts of real estate development investment growth and increase their shareholdings in real estate firms. These behaviors align with government objectives to stabilize the real estate market and restore investor confidence during a period of economic uncertainty.

Consistent with the notion that SOBs act as instruments of state policy, we find that the increase in forecast optimism and real estate investments is more pronounced among SOBs operating in regions with stronger government intervention, as indicated by lower marketization index scores. Furthermore, smaller SOBs, facing less

reputational pressure, exhibit a greater tendency to issue biased forecasts and adjust their investment strategies in response to policy directives.

Overall, our study provides new insights into the dual role of SOBs as both information intermediaries and policy tools, illustrating how state-directed financial entities respond to major economic policy shifts. While the findings are specific to China's institutional and market environment, which may limit their generalizability, they offer valuable implications for policymakers considering the broader role of state-owned financial institutions in achieving macroeconomic stability and managing sector-specific crises.

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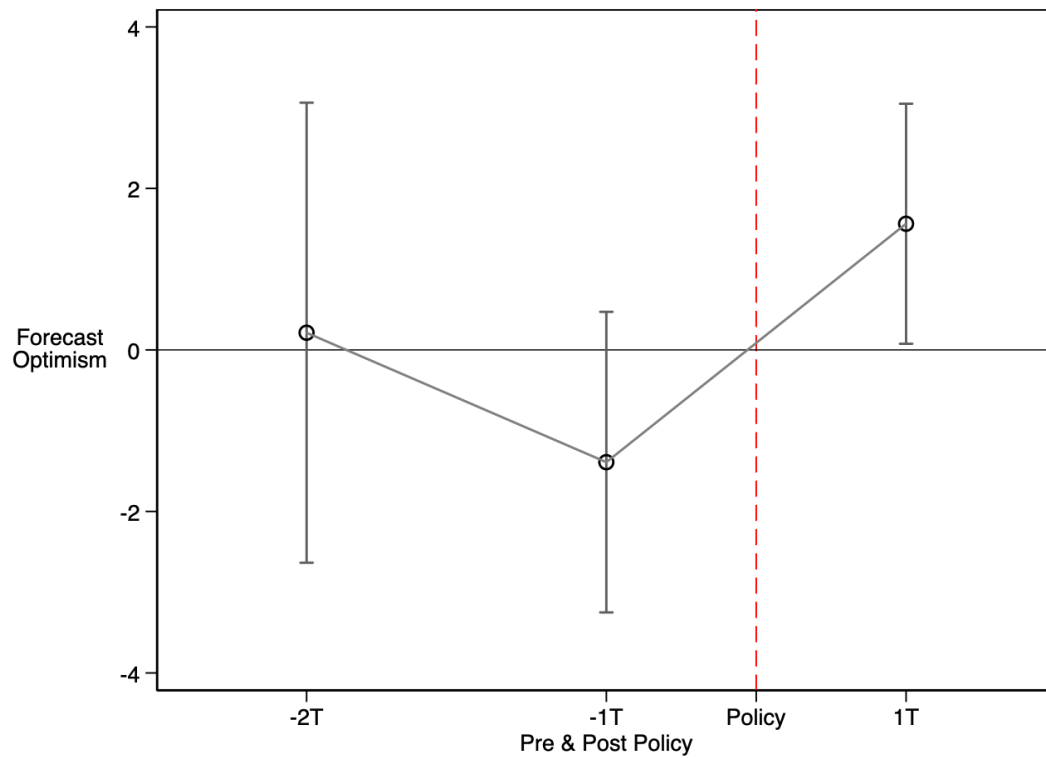
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Appendix A Variable Definition

Variables	Definition
<i>Optimism</i>	The forecasted real estate development investment growth value minus the average forecasted value of the same target across all reports.
<i>GDP_Optim</i>	Falsification dependent variable. The forecasted GDP growth value minus the average forecasted value of the same target across all reports.
<i>NonRE_Optim</i>	Falsification dependent variable. manufacturing investment and infrastructure construction investment growth value minus the average forecasted value of the same target across all reports.
<i>Bias</i>	Alternative dependent variable. The forecasted real estate development investment growth value minus the actual value.
<i>Pct</i>	Forecasting brokers' year-end holding percentage in Chinese A-share real estate companies.
<i>ChgType</i>	Discrete dependent variable of Hypothesis Two, where 1 indicates an increase in <i>Pct</i> compared to previous-year <i>Pct</i> of the firm, -1 and 0 indicate a decrease and no change, respectively.
<i>HouseInc</i>	“Increasing Value of the Year” of “Houses and Buildings” divided by “Beginning Balance” of “Fixed Assets” in the firm's annual financial report appendix.
<i>HouseDec</i>	“Decreasing Value of the Year” of “Houses and Buildings” divided by “Beginning Balance” of “Fixed Assets” in the firm's annual financial report appendix.
<i>POST</i>	An indicator variable equal to one for REDIG forecast issued in December 2021 or later, otherwise 0.
<i>POST_Y</i>	An indicator variable equal to one for REDIG forecast issued in 2022 or after, and zero otherwise.
<i>SOB_Pct</i>	Continuous explanatory variable to proxy “State-Owned Brokerage”. The sum of State-Owned Enterprises shareholding ratios in the brokerage's top 10 shareholders for the year.
<i>SOB_20/SOB_30/SOB_40</i>	An indicator variable equal to one if the <i>SOB_PCT</i> exceeds 20%/30%/40%, otherwise 0.
<i>Optim_SOB30</i>	Equals 1 if <i>SOB_30</i> equals 1 and the delta of broker's average <i>OPTIMISM</i> from 2021 to 2022 exceeds the median delta across all the brokers.
<i>SOB_Ratio</i>	The proportion of state-owned brokerages shareholding in the total forecasting brokerage shareholding for the firm-year.
<i>SOB_Stage</i>	Equals 0 if <i>SOB_Ratio</i> equals 0; 1 if <i>SOB_Ratio</i> is between 0 and the median; and 2 if <i>SOB_Ratio</i> exceeds the median.
<i>LnHorizon</i>	The natural logarithm of the number of days from the forecast date to the publication date of the forecasted indicator.
<i>LnPeers</i>	The natural logarithm of the number of macro analyst teams issuing real estate development investment forecasts in the month of prediction.
<i>AnlstRange</i>	The natural logarithm of the total number of macroeconomic indicators predicted by the analyst team during the forecast month.
<i>AnlstExp</i>	The number of months in which the analyst team has issued at least one macroeconomic report since data records began in 2010.
<i>BrokerSize</i>	The number of analyst teams publishing macroeconomic forecast reports for the brokerage in the year.
<i>GDP_Growth</i>	The GDP growth rate of the quarter.

<i>LnAvgHorizon</i>	The natural logarithm of the brokerage-year level average of <i>Horizon</i> variable.
<i>LnAvgPeers</i>	The natural logarithm of the brokerage-year level average of <i>Peers</i> variable.
<i>BrokerRange</i>	The natural logarithm of the total number of macroeconomic indicators predicted by the brokerage during the forecast month.
<i>AvgAnlstExp</i>	The brokerage-year level average of <i>Anlst_Exp</i> variable.
<i>Avg_GDP_Growth</i>	The brokerage-year level average of <i>GDP_Growth</i> variable, which measures the average macroeconomic environment faced by the analyst teams of a broker-year.
<i>FirmLnAssets</i>	The natural logarithm of the firm's total assets at the end of the year.
<i>Firm_LEV</i>	The firm's debt-to-asset ratio.
<i>Firm_ROA</i>	The return on total assets for the firm.
<i>Firm_MB</i>	The ratio of the firm's market value to book value.
<i>FirmLargest</i>	The ownership ratio of the largest shareholder in the firm.
<i>FirmMgtInv</i>	The ownership ratio of the firm's management.
<i>FirmInsInv</i>	The ownership ratio of institutional investors in the firm.

FIGURE 1 Parallel Trend Assumption Test for H1



Note: Given that the sample starts 8 months before the policy, we replace the POST term in the baseline model with the period dummy variables Pre2T, Pre1T, and Post1T, representing the intervals $[-8, -5]$, $[-4, -1]$, and $[1, 4]$ months relative to the policy time point, respectively, with all intervals being inclusive.

TABLE 1 Sample Selection of H1

<i>Selection criteria</i>	<i>#Forecasts</i>	<i>#Analyst Teams</i>	<i>#Brokerages</i>
All forecasts for REDIG in the macroeconomic reports published by all brokerage analyst teams in China in the database.	891		
<i>Less:</i> duplicate forecasts that are identical indicator of the same year-month	(288)		
<i>Less:</i> forecasts which didn't happen during 2021-2022	(258)		
<i>Subtotal</i>	345	93	42
<i>Less:</i> Brokerages that lack the top10 shareholder data in their annual report of 2021 or 2022	(2)	(1)	(1)
<i>Less:</i> Analysts teams that have null name entry	(1)	(1)	(1)
Final Sample:	342	91	40

Note: There are no observations with missing control variables.

TABLE 2 Summary Statistics of H1 Sample

<i>Variables</i>	<i>Obs.</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>25%</i>	<i>Median</i>	<i>75%</i>
<i>Optimism</i>	342	0.332	3.728	-1.628	0.080	2.772
<i>POST</i>	342	0.789	0.408	1.000	1.000	1.000
<i>SOB_Pct</i>	342	0.414	0.239	0.278	0.452	0.599
<i>SOB_20</i>	342	0.789	0.408	1.000	1.000	1.000
<i>SOB_30</i>	342	0.719	0.450	0.000	1.000	1.000
<i>SOB_40</i>	342	0.664	0.473	0.000	1.000	1.000
<i>LnHorizon</i>	342	4.644	1.290	4.094	4.864	5.743
<i>LnPeers</i>	342	2.559	0.559	2.079	2.773	3.045
<i>AnlstRange</i>	342	2.673	0.615	2.485	2.803	3.045
<i>AnlstExp</i>	342	1.314	1.110	0.000	1.386	1.946
<i>BrokerSize</i>	342	5.974	6.379	2.000	3.000	6.000
<i>GDP_Growth</i>	342	3.333	1.599	2.900	3.900	4.300

Note: All variables are defined in Appendix A.

TABLE 3 Sample Selection of H2

<i>Selection criteria</i>	<i>#Holdings</i>	<i>#Brokerages</i>	<i>#Firms</i>
All A-share top10 holding percentage numbers of all firms in China from 2010 to 2023	1,798,660	-	-
<i>Less: observations not at year-end</i>	(1,312,046)	-	-
<i>Less: observations not held by forecasted brokerages</i>	(465,227)	-	-
<i>Merge: multiple holdings of one brokerage on a single firm of a single year</i>	(1892)	-	-
<i>Less: firms not in real estate industry</i>	(18705)	-	-
<i>Subtotal</i>	790	33	153
<i>Less: observations before year 2020 or did not held by forecasting brokerages</i>	(609)	(18)	(78)
<i>Subtotal</i>	181	15	75
<i>Fill-in: every absent broker-firm-year holding percentage filled with 0</i>	4500	15	75
<i>Less: observations that do not fall in 2021-2022 period</i>	(2,250)	(0)	(0)
<i>Less: observations with missing control variables</i>	(678)	(2)	(3)
Final Sample:	1572	13	72

Note: The fill-in method is designed to calculate *ChgType*, which indicates the direction of change in a broker's holding percentage compared to the previous year.

TABLE 4 Summary Statistics of H2 Sample

<i>Variables</i>	<i>Obs.</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>25%</i>	<i>Median</i>	<i>75%</i>
<i>ChgType</i>	1572	0.043	0.267	0.000	0.000	0.000
<i>Pct</i>	1572	0.059	0.319	0.000	0.000	0.000
<i>POST_Y</i>	1572	0.542	0.498	0.000	1.000	1.000
<i>Optim_SOB30</i>	1572	0.364	0.481	0.000	0.000	1.000
<i>LnAvgHorizon</i>	1572	5.191	0.698	5.075	5.342	5.525
<i>LnAvgPeers</i>	1572	2.713	0.274	2.565	2.773	2.872
<i>BrokerRange</i>	1572	3.406	0.193	3.296	3.466	3.526
<i>AvgAnlstExp</i>	1572	4.167	0.806	4.143	4.527	4.707
<i>BrokerSize</i>	1572	6.949	6.271	3.000	5.000	7.000
<i>Avg_GDP_Growth</i>	1572	3.313	1.181	2.490	4.089	4.300
<i>FirmLnAssets</i>	1572	23.952	1.678	22.607	23.839	24.989
<i>Firm_LEV</i>	1572	0.665	0.216	0.542	0.723	0.818
<i>Firm_ROA</i>	1572	-0.007	0.727	-0.020	0.007	0.021
<i>Firm_MB</i>	1572	1.746	2.697	0.480	0.958	2.022
<i>FirmLargest</i>	1572	0.391	0.141	0.287	0.380	0.500
<i>FirmMgtInv</i>	1572	0.021	0.627	0.000	0.000	0.002
<i>FirmInsInv</i>	1572	0.539	0.178	0.430	0.548	0.650

Note: All variables are defined in Appendix A.

TABLE 5 Baseline Results of H1

Variables	(1) <i>Optimism</i>	(2) <i>Optimism</i>	(3) <i>Optimism</i>
<i>POST</i>	0.517 (0.43)	-0.878 (-0.70)	-0.819 (-0.66)
<i>SOB_30*POST</i>		2.058** (2.25)	
<i>SOB_Pct</i>			-5.337 (-1.50)
<i>SOB_Pct*POST</i>			3.935* (1.69)
<i>lnHorizon</i>	1.085*** (7.90)	1.083*** (7.90)	1.123*** (7.77)
<i>lnPeers</i>	-0.224 (-0.36)	-0.548 (-0.86)	-0.466 (-0.73)
<i>AnlstRange</i>	-0.369 (-1.37)	-0.345 (-1.30)	-0.357 (-1.30)
<i>AnlstExp</i>	-0.120 (-0.43)	-0.181 (-0.72)	-0.148 (-0.59)
<i>BrokerSize</i>	-0.117** (-2.54)	-0.131*** (-4.54)	-0.144*** (-3.41)
<i>GDP_Growth</i>	0.147 (1.03)	0.114 (0.78)	0.124 (0.86)
<i>Broker FEs</i>	Yes	Yes	Yes
<i>Year FEs</i>	Yes	Yes	Yes
<i>Month FEs</i>	Yes	Yes	Yes
<i>Obs.</i>	342	334	342
<i>Adj-R²</i>	0.407	0.412	0.414

Note: The *POST* term is not omitted since that year and month level fixed effects are separately applied, rather than year-month level fixed effects. The regression in column (2) has reduced observations, since observations with changes in control or treatment group assignment around the *POST* time point were removed. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Broker fixed effects, forecast year and month fixed effects are included. *T*-statistics are reported in brackets and standard errors are clustered at broker level. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.

TABLE 6 Alternative Measure of SOBs in H1

Variables	(1)	(2)
	<i>Optimism</i>	<i>Optimism</i>
<i>POST</i>	-0.876 (-0.66)	-0.956 (-0.77)
<i>SOB_20*POST</i>	2.115* (1.94)	
<i>SOB_40*POST</i>		2.040** (2.12)
<i>Controls</i>	Yes	Yes
<i>Broker FEs</i>	Yes	Yes
<i>Year FEs</i>	Yes	Yes
<i>Month FEs</i>	Yes	Yes
<i>Obs.</i>	331	319
<i>Adj-R²</i>	0.414	0.412

Note: The regression in column (2) has reduced observations, since observations with changes in control or treatment group assignment around the *POST* time point were removed. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Broker fixed effects, forecast year and month fixed effects are included. *T*-statistics are reported in brackets and standard errors are clustered at broker level. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.

TABLE 7 Falsification Test for H1

Variables	(1) <i>GDP_Optim</i>	(2) <i>GDP_Optim</i>	(3) <i>NonRE_Optim</i>	(4) <i>NonRE_Optim</i>
<i>POST</i>	0.337 (1.50)	0.194 (0.73)	0.331 (0.60)	0.201 (0.32)
<i>SOB_30*P</i>	-0.217		-0.740	
<i>OST</i>	(-0.97)		(-1.25)	
<i>SOB_Pct</i>		0.384 (0.31)		-0.864 (-0.35)
<i>SOB_Pct*</i>		0.028		-1.028
<i>POST</i>		(0.06)		(-0.93)
<i>Controls</i>	Yes	Yes	Yes	Yes
<i>Broker FEs</i>	Yes	Yes	Yes	Yes
<i>Year FEs</i>	Yes	Yes	Yes	Yes
<i>Month FEs</i>	Yes	Yes	Yes	Yes
<i>Obs.</i>	1409	1572	717	737
<i>Adj-R²</i>	0.378	0.394	0.328	0.328

Note: The regression in column (1) and (3) has reduced observations, since observations with changes in control or treatment group assignment around the *POST* time point were removed. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Broker fixed effects, forecast year and month fixed effects are included. *T*-statistics are reported in brackets and standard errors are clustered at broker level. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.

TABLE 8 Baseline Results of H2

Variables	(1) <i>ChgType</i>	(2) <i>ChgType</i>
<i>SOB_30*POST_Y</i>	0.099*** (3.45)	
<i>SOB_Pct</i>		0.332 (0.03)
<i>SOB_Pct*POST_Y</i>		0.257** (2.34)
<i>LnAvgHorizon</i>	0.085** (2.43)	0.087 (1.66)
<i>LnAvgPeers</i>	1.923*** (4.66)	1.440*** (2.94)
<i>BrokerRange</i>	-4.199*** (-4.64)	-3.381** (-2.35)
<i>AvgAnlstExp</i>	-2.450*** (-4.47)	-2.124*** (-4.04)
<i>BrokerSize</i>	0.002 (0.54)	-0.001 (-0.20)
<i>Avg_GDP_Growth</i>	-0.392*** (-5.09)	-0.346*** (-3.07)
<i>FirmLnAssets</i>	-0.018 (-0.20)	-0.018 (-0.020)
<i>Firm_LEV</i>	-0.070 (-0.22)	-0.070 (-0.22)
<i>Firm_ROA</i>	0.341 (0.82)	0.341 (0.82)
<i>Firm_MB</i>	-0.011 (-0.84)	-0.011 (-0.84)
<i>FirmLargest</i>	-0.234 (-0.67)	-0.234 (-0.67)
<i>FirmMgtInv</i>	-2.449 (-0.51)	-2.449 (-0.51)
<i>FirmInsInv</i>	0.625* (1.85)	0.625* (1.85)
<i>Broker FEs</i>	Yes	Yes
<i>Firm FEs</i>	Yes	Yes
<i>Year FEs</i>	Yes	Yes
<i>Obs.</i>	1572	1572
<i>Adj-R²</i>	0.116	0.116

Note: *POST_Y* is a yearly policy dummy instead of monthly measure of *POST*, due to the broker-year-firm data structure of H2. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Broker fixed effects, firm fixed effects and forecast year fixed effects are included. *T*-statistics are reported in brackets and standard errors are clustered at broker level. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.

TABLE 9 Alternative Measures of SOBs in H2

Variables	(1) <i>ChgType</i>	(2) <i>ChgType</i>
<i>SOB_20*POST_Y</i>	0.138*** (3.46)	
<i>SOB_40*POST_Y</i>		0.100** (3.10)
<i>Controls</i>	Yes	Yes
<i>Broker FEs</i>	Yes	Yes
<i>Firm FEs</i>	Yes	Yes
<i>Year FEs</i>	Yes	Yes
<i>Obs.</i>	1572	1429
<i>Adj-R²</i>	0.115	0.113

Note: The regression in column (2) has reduced observations, since observations with changes in control or treatment group assignment around the POST time point were removed. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Broker fixed effects, firm fixed effects and forecast year fixed effects are included. *T*-statistics are reported in brackets and standard errors are clustered at broker level. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.

TABLE 10 Alternative Measures of Investment in Real Estate Sector in H2

Variables	(1) <i>Pct</i>	(2) <i>Pct</i>
<i>SOB_30*POST_Y</i>	0.053*** (3.06)	
<i>SOB_Pct</i>		3.584 (0.71)
<i>SOB_Pct*POST_Y</i>		0.107* (1.98)
<i>Controls</i>	Yes	Yes
<i>Broker FEs</i>	Yes	Yes
<i>Firm FEs</i>	Yes	Yes
<i>Year FEs</i>	Yes	Yes
<i>Obs.</i>	1572	1572
<i>Adj-R²</i>	0.051	0.050

Note: *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Broker fixed effects, firm fixed effects and forecast year fixed effects are included. *T*-statistics are reported in brackets and standard errors are clustered at broker level. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.

TABLE 11 Additional Test for H1

Variables	(1)	(2)
	<i>Bias</i>	<i>Bias</i>
<i>POST</i>	-0.460 (-0.47)	-0.482 (-0.52)
<i>SOB_30*POST</i>	2.161** (2.35)	
<i>SOB_PCT</i>		- 12.821*** (-3.97)
<i>SOB_PCT *POST</i>		4.180* (1.90)
<i>Controls</i>	Yes	Yes
<i>Broker FEs</i>	Yes	Yes
<i>Year FEs</i>	Yes	Yes
<i>Month FEs</i>	Yes	Yes
<i>Obs.</i>	334	342
<i>Adj-R²</i>	0.527	0.522

Note: The regression in column (1) has reduced observations, since observations with changes in control or treatment group assignment around the *POST* time point were removed. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Broker fixed effects, forecast year and month fixed effects are included. *T*-statistics are reported in brackets and standard errors are clustered at broker level. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.

TABLE 12 Cross-sectional Test for H1

Variables	Larger Broker Size	Smaller Size	Broker	Larger Size	Broker	Smaller Size	Broker
	(1)	(2)		(3)		(4)	
	<i>Optimism</i>	<i>Optimism</i>		<i>Optimism</i>		<i>Optimism</i>	
<i>POST</i>	2.631 (1.42)	-0.593 (-0.35)		5.753** (2.26)		-0.849 (-0.52)	
<i>SOB_30</i>	0.000 (.)	0.000 (.)					
<i>SOB_30*P</i>	0.248	2.885***					
<i>OST</i>	(0.19)	(3.36)					
<i>SOB_PCT</i>				0.730 (0.14)		-28.189** (-2.22)	
<i>SOB_PCT</i>							
<i>*POST</i>				-5.986 (-1.13)		6.531*** (4.49)	
<i>Controls</i>	Yes	Yes		Yes		Yes	
<i>Broker FEs</i>	Yes	Yes		Yes		Yes	
<i>Year FEs</i>	Yes	Yes		Yes		Yes	
<i>Month FEs</i>	Yes	Yes		Yes		Yes	
<i>Obs.</i>	131	203		139		203	
<i>Adj-R²</i>	0.394	0.421		0.414		0.422	

Note: The regression in column (1) has reduced observations, since observations with changes in control or treatment group assignment around the *POST* time point were removed. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Firm fixed effects and management forecast announcement year fixed effects are included. *T*-statistics are reported in brackets, and robust standard errors are estimated. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.

TABLE 13 Cross-sectional Test for H2

Variables	Less Gov.	More Gov.	Less Gov.	More Gov.
	Intervention	Intervention	Intervention	Intervention
	(1)	(2)	(3)	(4)
	<i>ChgType</i>	<i>ChgType</i>	<i>ChgType</i>	<i>ChgType</i>
<i>SOB_30*POST_Y</i>	0.067*	0.147***		
	(1.85)	(3.00)		
<i>SOB_PCT</i>			7.612	-9.669
			(0.70)	(-0.47)
<i>SOB_PCT*POST_Y</i>			0.110	0.469**
			(0.84)	(2.56)
<i>Controls</i>	Yes	Yes	Yes	Yes
<i>Broker FEs</i>	Yes	Yes	Yes	Yes
<i>Year FEs</i>	Yes	Yes	Yes	Yes
<i>Month FEs</i>	Yes	Yes	Yes	Yes
<i>Obs.</i>	948	624	948	624
<i>Adj-R²</i>	0.057	0.208	0.056	0.206

Note: Government intervention is measured using the “Government-Market Relationship” sub-index from the China Marketization Index. The smaller this indicator, the greater the government's influence on the local economy. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Firm fixed effects and management forecast announcement year fixed effects are included. *T*-statistics are reported in brackets, and robust standard errors are estimated. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.

TABLE 14 Additional Test 1 for H2

Variables	(1) <i>ChgType</i>	(2) <i>ChgType</i>
<i>Optim_SOB30*POST_Y</i>	0.093*** (3.38)	
<i>Optim_SOB30_Alt</i> <i>*POST_Y</i>		0.116*** (3.48)
<i>Controls</i>	Yes	Yes
<i>Broker FEs</i>	Yes	Yes
<i>Firm FEs</i>	Yes	Yes
<i>Year FEs</i>	Yes	Yes
<i>Obs.</i>	1572	1572
<i>Adj-R²</i>	0.115	0.115

Note: *Optim_SOB30* equals 1 if *SOB_30* equals 1 and the change in the broker's average optimism from 2021 to 2022 exceeds the median change across all brokers. *Optim_SOB30_Alt* equals 1 if *SOB_30* equals 1 and the broker's average optimism after policy exceeds the median after-policy optimism across all brokers.. The results remain robust when using *Optim_SOB20*, *Optim_SOB20_Alt*, *Optim_SOB40* or *Optim_SOB40_Alt* as alternatives. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Broker fixed effects, firm fixed effects and forecast year fixed effects are included. *T*-statistics are reported in brackets and standard errors are clustered at broker level. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.

TABLE 15 Additional Test 2 for H2

Variables	(1) <i>HouseInc</i>	(2) <i>HouseDec</i>	(3) <i>HouseDec</i>	(4) <i>HouseDec</i>
<i>SOB_Ratio</i>	0.010 (0.12)	-0.009 (-0.65)		
<i>SOB_Ratio*POST</i>	0.157*	0.016		
<i>_Y</i>	(1.68)	(0.86)		
<i>SOB_Stage</i>			0.003 (0.08)	-0.004 (-0.58)
<i>SOB_Stage*POS</i>			0.085*	0.008
<i>T_Y</i>			(1.79)	(0.94)
<i>FirmLnAssets</i>	-0.052** (-2.12)	-0.012*** (-3.13)	-0.053** (-2.13)	-0.012*** (-3.14)
<i>Firm_LEV</i>	-0.268* (-1.83)	-0.004 (-0.19)	-0.266* (-1.82)	-0.004 (-0.18)
<i>Firm_ROA</i>	-0.140 (-0.40)	-0.017 (-0.34)	-0.144 (-0.41)	-0.018 (-0.36)
<i>Firm_MB</i>	0.006 (0.69)	-0.000 (-0.39)	0.006 (0.68)	-0.000 (-0.39)
<i>FirmLargest</i>	-0.348** (-2.31)	-0.063*** (-2.87)	-0.346** (-2.30)	-0.062*** (-2.85)
<i>FirmMgtInv</i>	0.501* (1.69)	-0.027 (-1.10)	0.498* (1.68)	-0.028 (-1.13)
<i>FirmInsInv</i>	0.314 (1.47)	0.003 (0.13)	0.313 (1.46)	0.002 (0.10)
<i>Industry FEs</i>	Yes	Yes	Yes	Yes
<i>Year FEs</i>	Yes	Yes	Yes	Yes
<i>Obs.</i>	2188	1491	2188	1491
<i>Adj-R²</i>	0.016	0.136	0.016	0.136

Note: Columns (1) and (3) have different observations compared to columns (2) and (4) because the data for house and building increases and decreases have different missing observations. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Broker fixed effects, firm fixed effects and forecast year fixed effects are included. *T*-statistics are reported in brackets and standard errors are clustered at broker level. Continuous variables are winsorized at 1% and 99% levels. The variables are defined in Appendix A.