Political Turnover, Ownership, and Corporate Investment

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ABSTRACT

We examine the impact of political influence and ownership on corporate investment by exploiting the unique way provincial leaders are selected and promoted in China. The tournament-style promotion system creates incentives for new provincial governors to exert their influence over capital allocation, particularly during the early years of their term. Using a neighboring-province difference-in-differences estimation approach, we find that there is a divergence in investment rates between state owned enterprises (SOEs) and non-state owned enterprises (non-SOEs) following political turnover. SOEs experience an abnormal increase in investment by 6.0% in the year following the turnover, consistent with the incentives of a new governor to stimulate investment. In contrast, investment rates for non-SOEs decline significantly post-turnover, suggesting that the political influence exerted over SOEs crowds out private investment. The effects of political turnover on investment are mainly driven by normal turnovers, and turnovers with less-educated or local-born successors. Finally, we provide evidence that the political incentives around the turnover of provincial governors represent a misallocation of capital as measures of investment efficiency decline post-turnover.

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1. Introduction

We exploit a unique feature of political transition in China to examine how the personal incentives of politicians influence real investment. Certain types of politicians are promoted within the Communist party based on the economic performance in the region in which they govern. Since politicians in China exert a great deal of power over state-owned enterprises (SOEs), it is possible that the real investment of SOEs will vary with the political turnover cycle across the provinces in China. The incentives to report strong growth over the political tenure of office combined with time-to-build considerations suggest that investment by SOEs should be highest when a new politician is appointed as a provincial governor. We examine whether these dynamics of investment for SOEs are present in China around political turnovers. We also examine the effects of political influence over SOE investment on the investment choices of private listed firms (non-SOEs) in the Chinese economy. We find that political incentives do influence investment behavior and that these effects appear to represent a misallocation of capital over time as the investment of privately owned firms appears to be crowded out by the politically controlled investment of SOEs.

China, as the world's largest emerging economy, is unique both politically and economically in several ways. First, the connection between economic activities and political influence/interference in China is extremely close. Political agendas often lead economic activities. Government leaders at both the central and provincial levels have enormous power in the economy to promote growth through investment projects. Second, political leaders are appointed rather than elected. National top leaders are changed every ten years[1] and provincial leaders are typically replaced every five years. Finally, investment in China is very high relative to other countries in the world. In 2013, the investment-to-GDP ratio in China was 47.1%. China's investment rate compares to 16.8% in the US and 27.4% and 21.2% in South Korea and Japan, respectively. The vast amount of resources devoted to investment along with the

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[1]Since Mao's death, central level leadership transition becomes a regular phenomenon.

influence of political leaders make China an interesting and important setting to study how politics influence investment and whether the quality of investment is affected by political involvement.

There are two ways that the system of provincial governor turnover may affect corporate investment. First, China is unique in the way politicians move from one post to another. In contrast to the use of competitive elections to select leaders, the promotion of politicians in China follows more of a tournament system where politicians are rewarded for stimulating economic growth in the region in which they govern. The appointment and evaluation of provincial leaders is done through a process in which the central government has absolute power and discretion towards personnel choices. Similarly at the firm level, CEOs of central and local SOEs are appointed by the central and local government, respectively. The government[2] in most cases remains, directly or indirectly, the largest and controlling shareholder in SOEs. In this sense, corporate decisions of SOEs are often sensitive to political influences. For example, political leaders can influence SOEs directly through arranging preferential treatment in bank credit, government subsidies, and market entry compared to private enterprises (Faccio, Masulis and McConnell (2006), Claessens, Feijen and Laeven (2008), Li, Meng, Wang and Zhou (2008)). Political leaders can also cast their influence on SOEs through indirect channels such as affecting personnel decisions. Various levels of governments in China thus often seek to affect/direct investment in order to achieve policy goals, especially in SOEs. Second, firms in China face similar issues related to uncertainty about government policy post-turnover as firms in other countries face around elections. Political uncertainty has been shown to have real economic impact on corporate investment in other countries. Julio and Yook (2012) examine the firm-level corporate investment corresponding with the event of national elections across 48 countries, and they find that corporate investment temporarily decreases prior to the

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[2]In 2006, SOEs accounted for more than 30% of the China's GDP and approximately 90% of all publicly listed firms. SOEs play a central role in pivotal industries such as energy, steel, machinery and national defence (Li & Putterman, 2008). The public sector is often dominated by large SOEs, that provide key inputs to facilitate private sector growth and investment, and is regarded as a foundation of national growth.

election outcome as firms become more cautious anticipating the election outcome. While our focus is on post-turnover investment dynamics, we also examine firm-level investment in China just prior to the timing of top leader transition to check for uncertainty effects.

Top provincial leaders include both governors and party secretaries. Since the dual leadership system is unique in China, it is important distinguish their functional roles. Governors are responsible for and put more effort on presiding over resource allocation and promoting provincial economic development, while party secretaries represent the communist party's interests and ensure the implementation of party policies from higher levels. Given the different types of power exerted by these two types of provincial leaders, we expect that turnovers of governors will be more relevant for corporate investment than those of party secretaries. As such, we focus on the turnover of provincial governors rather than that of party secretaries in our empirical analysis.

We hypothesize that the incentives of provincial political turnovers can have a significant impact on local firm-level investment. When the government has great influence on corporate decisions, firm level investment may vary around the timing of political leader changes. Corporate investment policy change may be due to political uncertainty ex ante and political influence ex post. Fan, Wong and Zhang (2007) show that newly privatized firms with political connected CEOs often have poor governance and performance. Since SOEs make decisions not only to maximize shareholder value but also to serve political interests, we furthermore hypothesize that SOEs differ from non-SOE firms and exhibit different investment patterns corresponding with the local top leader turnovers. For SOEs, managers often are appointed by government, which means they want to serve the interest of the politicians more than that of shareholders, e.g., helping political leaders to improve economic performance by expansions or increasing capital expenditures. In contrast, non-SOEs, those firms with private investors as controlling shareholders, are not directly influenced by provincial governors and are hence unlikely to invest based on the wishes of the provincial governor.

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We find evidence consistent with the hypothesis that political turnover and the incentives of the new provincial governors influence real corporate decisions through their influence on state-owned firms. The main finding and the primary contribution of this paper is that there is a divergence in investment rates between SOEs and non-SOEs in the period just following the turnover. The investment rates of SOEs increase significantly early in the new term of a provincial governor, consistent with the view that politicians exert their influence on investment in an effort to boost economic growth in the province and increase the likelihood of future political promotion. At the same time, the investment rates of non-SOEs decline significantly after the turnover. The wedge in investment rates between SOEs and non-SOEs is estimated on a within-industry basis, suggesting that the political boost in investment for SOEs acts to crowd out private investment. We also find that corporate investment becomes significantly sensitive to measures of investment opportunities, suggesting that political influence is a source of capital misallocation around the turnover cycle. Finally, we also find that, similar to other studies studying political turnover in democratic countries (Julio and Yook (2012), Durnev (2012)), that firms tend to be cautious just before political turnover in a given province and decrease investment.

To further tighten the identification of political influence effects on investment and to rule out concerns that the results are driven by regional economic variation, we employ a neighboring-province difference-in-differences estimation procedure whereby we compare corporate investment for firms in a given province that is experiencing a political turnover to corporate investment by firms in a bordering province where no turnover event is taking place. We also exploit heterogeneity in the strength of the incentive to boost investment across politicians. Provincial governors' characteristics such as age, education, birthplace and previous working experience provide variation in the degree to which career concerns affect economic decisions. For example, we exploit the fact that due to retirement rules, governors between the age of 55 to 60 are most concerned about their political careers and thus have the strongest

incentives to manipulate investment through SOEs, relatively to either younger ones or older ones out of the age bracket. Furthermore, the increase in investment among SOEs mainly takes place in provinces where the political turnovers involve normal transitions (the timing can be predicted), less-educated immediate successors and when successors are born locally (more political influence ex post). These findings are consistent with the cross-sectional identification predictions.

Our paper contributes to the literature on the effects of political change on corporate investment in general and in China specifically. At the Macro level, Li and Zhou (2005) present empirical evidence on the link between political turnover of top provincial leaders and provincial economic performance (measured by GDP growth). Maskin, Qian and Xu (2000) and Chen, Li and Zhou (2005) show that the economic performance is an important predictor of political promotion of top provincial leaders in China, while Cao et al., (2013) study CEO political promotions as incentive mechanisms in SOEs since they have concerns about future political careers. Both Maskin, Qian and Xu (2000) and Cao et al., (2013) show that the probability of promotion increases with the average economic performance during the tenure term. Our study on firm-level investment behaviors around political turnovers sheds lights on the channels through which top provincial leaders attempt to prop up provincial economic performance by affecting the investment policies of SOEs.

The paper also provides new supporting evidence for what Shleifer and Vishny (2002) term the "grabbing hand" view of government. Shleifer and Vishny (2002) argue that privatization of state firms is controlled by politicians who act to maximize their private benefits. Our research also contributes to the strand of literature examining potential over-investment of firms in China. For example, Ding et al. (2010) find that firms in China over-invest in almost all sectors. Liu and Siu (2011) find that SOEs compared to private controlled firms are more severe in over-investment problems. Our paper also contributes to the literature on political connections in China. Chen et al. (2011) find that political connections significantly reduce

investment efficiency in SOEs but not in non-SOEs. Geng and N'Diaye (2012) show that investment in China is artificially propped up by low interest rates and an undervalued currency. Our paper highlights that political connections and ownership contribute to over-investment by Chinese firms.

Following the 2008 financial crisis, many investment projects have been announced as part of Chinese government's initiatives to stimulate the economy. Provincial and municipal governments unveiled plans to invest more than $1.6 trillion, according to the National Development and Reform Commission, a central planning agency. According to Barnett and Brooks (2006), SOEs accounted for two-thirds of total Chinese investment in 1990, while their share remained over one-third by 2004. Given the size of investment in China and its link to economic growth, an understanding of the quality of capital allocation is central to the welfare benefits of China's industrial policy. Our paper suggests that significant investment distortions are present in China and these distortions are caused to some extent by the high degree of influence provincial governors hold over state-owned firms.

2. Political Turnover and Incentives in China

In China, the market has observed an alarming trend of increasing government policies favoring the state sector. An article in Financial Times (2008)[3] reports that in many industries such as natural resources, civil aviation, real estate, and finance, SOEs crowded the private firms out. State ownership and government politics continue to influence Chinese SOEs' corporate policies both directly and indirectly. For example, the government maintains its control on listed SOEs by appointing top executives, many of whom possess political connections as current or former government officials/bureaucrats. Thus, state ownership and government

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[3]This phenomenon known as "Guo Jin Min Tui" in Mandarin Chinese describes that the state advances and private sector recedes. This question got serious attention during the 2010 annual meeting of National People's Congress, as illustrated in China Economic Weekly, 2010. Is Guo Jin Min Tui true or false? March 26.

politics are likely to continue to influence Chinese SOEs' corporate policies. Under China's current political system, government bureaucrats have great control over the allocation of resources such as capital (loans through state-owned banks), land supply and government concessions, contracts as well as appointment of executives in SOEs. Research on China's economic and financial issues must take into consideration the relationship between economic and political institutions (Parish and Michelson (1996)).

Alesina and Perotti (1996) and Jones and Olken (2005) show that new political leaders cast different impact on the economy. We therefore focus on provincial leadership turnovers in China. Provincial governors are held mainly responsible for promoting local economic development. Under China's current political systems, GDP is considered as the main examination index for the performance appraisal of local government officials. Those provincial governors who can deliver the best GDP growth figure during their tenure will have a higher chance of promotion later on. Such performance-based promotion scheme creates tournament-like incentives for local officials in China. Therefore, career concerns of newly appointed provincial governors create strong incentives for them to promote economic growth, which in turn can be used to enhance their reputation and credibility for future promotion. For example, local government reports or provincial yearbooks often contain detailed information on the relative rankings of the economic performance, ranging from GDP growth rate to miles of roads constructed. The combination of promotion incentives and time-to-build considerations suggests that increases in investment are likely to be concentrated in the early years of a new leader's term.

China changes its top leaders every ten years and replaces other top-ranking local governors or party secretaries every five years, at about the same time of the national Communist party congress. A politics-fuelled investment boom accompanied with virtually every new congress is anticipated when a new slate of officials takes over at both central and local levels. Due to career concerns, when new governors take local offices, they plan well their term and

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hope to make major achievements through capital intensive infrastructure or industrial projects that can be completed during their tenures. It is not uncommon for new local governors to start to announce ambitious investment plans right after their appointments. For example, the Financial Times (2012) observed that "The investment projects that have been announced in recent weeks have been described as 'stimulus' initiatives to prop up the economy. Among others, Guizhou province wants to spend RMB 3 Trillion on boosting tourism, while the city of Chongqing is aiming for an RMB 1.5 Trillion investment in seven strategic industries such as telecommunications". Chen et al. (2011) show that SOEs invest less efficiently than non-SOEs in China due to government interventions such as state ownership or appointment of top executives.

If fundamental political institutions in China do not change, the politics-fuelled investment cycle will keep on repeating itself. Political turnovers will cause undesirable economic consequences by disrupting the local firms' political connections and corporate investment decisions. When a provincial governor assumes a new office in a different province, he usually doesn't have connections with local private firms. However, he can easily exert significant control over local SOE firms through affecting firms' personnel appointment and corporate decisions. Such indirect intervention enables new governors to affect corporate investment activities.

Provincial governors' personal attributes such as age, education, birthplace and previous working experience might matter on the way how politicians influence local economic entities. Since the economic reform in the late 1970s, an important change in the evaluation criteria for government officials is the declining role of family class origin and the increasing emphasis on the educational credentials and expertise of applicants (Bian (2002)). Political conformity and loyalty, which used to be the most important pre-reform criteria for promotion, now gave way to economic performance/ranking among peers and other competence-related indicators such as good education background and demonstrated expertise in administrative manage-

ment. As a result of this adjustment, top provincial governors are now better educated than in the past. For example, in our provincial governor turnover sample over a 15-year period from 1998 to 2012, 59 out of 113 (approximate 52%) immediate successors have higher education background (either Master or PhD) at the time of appointment.

Due to career concerns, the easiest way for local governors to prop up GDP figures is to implement capital intensive infrastructure projects through introducing ambitious fiscal stimulus plans. Education measures provincial governor's human capital and field of vision, and thus we expect it to have a negative effect on governor's investment impulsion. We argue that well-educated new governors don't tend to increase SOE firms corporate investment after the governor turnovers, while such increase is mainly driven by less-educated immediate successors. The rationale behind the argument is that governors with better education are more rational and less likely to stimulate GDP growth. In other words, better educated governors may not only concern their own political careers but also consider the possible negative and irreversible effects brought by short-term government schemes, which often results in inefficiency, misallocation of resources and corruption.

Boom of SOEs' investment in post-turnover periods is mainly caused by locally born governors. One primary reason is that locally born governors might know better the constituents of local economy of his home province and share the same inherited cultural traits and backgrounds, which help them to speed up the transition process and shorten adaptation period. Such local advantage means that local-born governors are better in mobilizing local economic forces. Alternatively one can argue that locally born governors may be subject to the "homeland bias" so that they have stronger incentive to boost economic growth, to benefit local people and to improve their living standards. Previous working experience of governors especially in the central government can help improve local economic growth due to the connections with central government, which help local governors gain access to resources and alleviate political constraints.

Finally, governors' age matters. Due to the implement of mandatory retirement systems in the early 1980s, most bureaucrats have to retire at the age of 65. In view of this, if a new governor's age is above 60 at the time of appointment, his political career concern might not be as strong as younger ones (Li and Zhou (2005)) as retirement is imminent and the politician will have no further promotions. On the other hand, relatively young bureaucrats may also have low chance of promotion due to their junior status and the lack of political capital in the party. Given these considerations and the average tenure period being 4 to 5 years, there is likely to be an inverse U-shaped relationship between governors' career concerns and their ages, with such concerns peaking around 55 to 60 years old. We thus expect to see that the increase in investment is mainly driven by provincial governors of ages in between 55 and 60, since governors in this age bracket will likely be motivated to take more risk and influence economic performance in the local economy in order to increase their (probably the last) chance of political promotion.

3. Data Description, Variable Definition and Summary Statistics

Our turnover data contains 113 turnovers of top provincial governors that occurred in mainland China's 31 provinces between 1998 and 2012. The data, compiled from a variety of internet sources[4], contain detailed personnel information regarding each governors age, education, birth place, previous working experience and most importantly the timing and nature of the appointment. Macroeconomic data and firm characteristics are obtained from the Chinese Stock Market Accounting Research (CSMAR) and Wind databases for the period 1998 to 2012.

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[4]They include Who's Who in the CCP database of http://xinhuanet.com/, China institutions and leaders' database of http://people.com.cn/ and the Central Peoples' Government of the Peoples' Republic of China website www.gov.cn. In addition, two governor turnovers (Xuenong Meng, governor of Beijing from 2003/01 to 2003/04 and Jinping Xi, acting governor of Zhejiang from 2002/10 to 2003/01) are excluded in our sample as their tenure durations are less than one year.

The sample period is chosen to match the availability of listed firms' financial statements (especially the cash flow statements) in the CSMAR database, as CSMAR starts collecting cash flow data from 1998. We further drop delisted firms, financial firms and firms with less than three observations (i.e. IPO year $\geq$ 2010) in the sample. Finally, we winsorize all firm characteristics at the 1st and 99th percentiles in order to minimize the impact of data errors and outliers.

We obtain the list of private listed firms from CSMAR's China Listed Private Enterprise database and divide the full sample into two subsamples according to the firms' ownership type (i.e., state-owned listed versus private listed). By applying these selection criteria, we end up with a sample of 2,578 firms spanning 15 years for a total of 21,552 unique firm-year observations, of which 1,159 firms with 12,823 observations are state-owned listed.

Appendix A lists the definitions of all variables used in our analysis, including both dependent variables and control variables. The key variable is the firm-level investment rate, defined as capital expenditure divided by beginning-of-year book value of total assets (lagged total assets). The key control variables include Tobin's Q, calculated as the book value of total assets minus book value of equity plus market value of equity scaled by book value of total assets[5]. Cash flow is measured as EBIT plus depreciation and amortization minus interest expense and taxes scaled by beginning-of-year book value of total assets. State-owned enterprise (SOE) dummy is an indicator variable set equal to one if the ownership type of the listed firm is state-owned. We define four turnover event time dummy variables: the pre-turnover year [-1] dummy, the turnover year [0] dummy, the one-year post-turnover [+1] dummy and the two-year post-turnover [+2] dummy, where year zero is the actual turnover year. The tim-

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[5]Chen and Xiong (2002) point out that non-tradable shares in China are generally associated with an illiquidity discount of between 70% to 80% of their market value. Following Bai et al. (2004), we construct three measures for market value (MV) of equity: (i) MV of tradable (common) shares; (ii) MV of tradable shares plus 80% discount of MV of non-tradable shares; (iii) MV of tradable shares plus 70% discount of MV of non-tradable shares. Throughout the paper, we use the third measure for MV of equity. We obtain similar results using the two alternative measures.

ing of the dummy variables is set to capture the firms' investment dynamics during the full political turnover cycle.

Table 1 reports summary statistics of the number of turnovers and the classification of turnover types for each of the 31 provinces in mainland China for the sample period from 1998 to 2012.

[Insert Table 1 here]

In Table 1, we categorize turnovers into normal and abnormal types according to the nature of the turnover. We define normal turnovers as the cases when top provincial leaders are parallel-moved or promoted. On the other hand, we define abnormal turnovers as the cases when a top leader is dead, demoted, resigned, retired or indicted. Our categorization of normal versus abnormal turnovers follows the identification and classification of Chen et al. (2005) and Li and Zhou (2005). There are 113 political turnovers in total, distributed quite evenly across the 31 provinces. Among the turnovers, 83 are classified as normal type and the rest are classified as abnormal. The distribution of turnovers offers a great deal of cross-sectional variation to test their effects on firm investment. The sample of SOEs consists of 12,667 unique firm-year observations, while the non-SOE sample contains 7,923 firm-year observations. In general, Beijing, Guangdong, Jiangsu, Shandong, Shanghai and Zhejiang have more listed firms than other provinces but a comparable number of political turnovers. Table 2 reports the distribution of firm-year observations and the turnovers of provincial governors by each calendar year from 1998 to 2012.

[Insert Table 2 here]

Table 2 shows that turnovers of provincial governors occur every 4.11 years on average and the average length of tenure for governors is 4.14 years. Peak of turnovers happens in

1998, 2003, and 2007. Firm observations increase over time reflecting increased IPO volume over the sample period. Table 2 also indicates that governor turnovers are centered on the past Third Plenary Session of the Central Committee of the Communist Party, a key event that often marks new reforming policies for economic and social development. Table 3 summarizes our full sample.

[Insert Table 3 here]

Panel A of Table 3 summarizes firm characteristics used in our analysis. In the full sample, the mean firm investment rate, defined as capital expenditure divided by lagged total assets, is 0.0655 with a median of 0.0387. Tobin's Q has mean of 2.14 and median of 1.70. Cash flow deflated by lagged total asset has mean value of 0.0657 and median value of 0.0608. Firms' sales grow at mean rate of 0.2305 and median rate of 0.1320. These summary statistics are consistent with earlier literature on Chinese firms such as Chen et al. (2011). SOEs have slightly higher investment rates compared to the whole sample. Non-SOEs have slightly lower investment rates compared to SOEs but have a significantly larger average Tobin's Q and experience higher rates of sales growth.

Panel B of Table 3 reports the mean investment rates for the full sample, SOEs and non-SOEs separately during the turnover event time [-2, +2] period, with year 0 being the year the turnover occurred. We first consider the full sample. Unconditionally, firm investment rates are slightly lower in pre-turnover years than in other years. On the other hand, investment rates increase over the turnover event time period and keep rising up to one year post-turnover. The investment rate one year post-turnover has a mean value higher than any other turnover years. For example, the average investment rate is 0.0679 one year post-turnover, representing a 4.6% increase relative to the mean investment rate of 0.0649 in other sample years. On average, firms' investment rates in the full sample show an increasing trend over the turnover event time [-2, +1] period as depicted in Panel B of Table 3. For SOEs, the mean investment

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rate one year pre-turnover is not different much from other years, but SOE investment rates are significantly higher one year post-turnover. The difference amounts to 0.0070, representing approximately a 10% increase from the mean investment rate of 0.0666 in other years. The table also shows that non-SOEs exhibit different patterns in investment from SOEs. Although on average, non-SOEs have lower investment rate than SOEs, the mean investment rate of non-SOEs does not experience significant decrease or increase over the [-1, +1] turnover event time period. In addition, Panel B of Table 3 indicates that investment rates of non-SOEs drop significantly two year post-turnover, compared with other sample years.

[Insert Figure 1 here]

Figure 1 compares mean investment rates over the turnover event time [-2, +2] period for the full sample, SOEs and non-SOEs separately. A clear pattern emerges from Figure 1: investment rates for the full sample shows an increasing trend and the trend pattern is much more noticeable for SOEs. For SOEs, investment peaks one year post-turnover; while for non-SOEs, investment generally peaks one year pre-turnover and then deteriorates quickly. The wedge between investment rates of SOEs and non-SOEs increase sharply over the [-1, +2] turnover period.

4. Empirical Results

4.1. Regression Specification

In this paper, we empirically examine whether the political incentives of politicians around the turnover of provincial governors has an impact on corporate investment decisions of firms in China. To test for changes in the investment dynamics of firms across the turnover cycle,

we employ an augmented investment-Q specification and estimate the following baseline panel regression model:

$$I_{ijt} = \alpha_i + \gamma_t + \beta_1 \text{Pre-Turnover}_{j,t-1} + \beta_2 \text{Turnover}_{j,t} + \beta_3 \text{Post-Turnover}_{j,t+1} \quad (1)$$

$$+ \beta_4 \text{Post-Turnover}_{j,t+2} + \beta_5 Q_{i,t-1} + \beta_6 CF_{i,t} + \beta_7 \%\Delta GDP_{j,t-1} + \beta_8 \%\Delta Sales_{i,t} + \varepsilon_{ijt}$$

where i stands for the firm, j indexes the province, and t denotes the year. The dependent variable, the firm-level investment rate, is defined as capital expenditures scaled by lagged total assets. The primary explanatory variables of interest are time-province dummies measuring the periods before and after the turnover event. First is the turnover year dummy, which is the calendar year when the actual turnover occurs. The pre-turnover period is defined as the one year period immediately before the turnover year. The one (two) year post-turnover year dummy takes on a value of one if the firm-year-province pair falls in the one (two) year immediately after the turnover year period. Other explanatory variables include Tobin's Q, cash flow and provincial-level real GDP growth rates, which are used to control for firm investment opportunities and provincial economic conditions. In addition, we include firm sales growth as an addition control for expected future demand (Bloom, Bond and Van Reenen (2007)). To control for time-variant unobservable variation, we include both firm and year fixed effects in the baseline investment regression. This specification captures the within-firm variation in corporate investment around turnover event years. Standard errors are clustered at the firm level in all specifications.

There are potential concerns with the one-way clustering of regression standard errors used in our analysis. However, as pointed out by Thompson (2011) and Petersen (2009), two-way clustering is only valid provided: (i) Both N and T are "large"; and (ii) The aggregate shocks must dissipate over time. In such cases, clustering by two dimensions will likely produce

unbiased standard errors. Our sample fits neither of these two requirements. First, in our sample N exceeds 2,500 firms but the average T is around 11.6 years with a maximum of 15 years. Second, the turnovers are centered around the Third Plenary Session of the Central Committee of the Communist Party as tabulated in Table 2. In view of this, we first report our baseline results with standard errors clustered at firm level only. For robustness, we repeat our analysis with standard errors clustered at both economic region and year levels and find similar results[6]. Following strategies promulgated by the Central People's Government, we categorize the 31 provinces/municipalities into eight economic regions according to the similarities in their economic conditions and industrial structures. The information on the eight economic regions is reported in Appendix B.

4.2. Investment around Turnover Years

In Table 4, we report the empirical results for our baseline specification separately for the the full sample, the sample of SOEs only, and the non-SOE sample. We estimate panel regressions and include firm and year fixed effects in all specifications. Standard errors are clustered at firm level.

[Insert Table 4 here]

Table 4 reports the estimation results for all three samples. The first two columns report the estimates for the full sample, the third and fourth columns report results for SOEs, and the final two columns report the estimates of the investment regressions for the non-SOE sample. We estimate two specifications for each sample that differ only in whether a two year post-turnover dummy is included.

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[6]To save space, the robustness with alternative standard error estimates are not reported here. Results are available upon request.

For the full sample (first two columns of Table 4), we find a negative relationship between the pre-turnover dummy and corporate investment rates, consistent with the prior literature documenting pre-election declines in investment rates (Julio and Yook (2012) and Jens (2013)). Investment rates are not significantly different from other periods in the turnover year nor in the post-turnover period. The coefficients on the control variables are consistent with the literature. Corporate investment is positively related to Q, cash flow, sales growth, and regional economic growth.

As the univariate tests in Table 3 and as Figure 1 shows, there are important differences in investment behaviors between SOEs and non-SOEs over the provincial turnover cycle. SOEs show a noticeable increasing pattern following political turnovers while non-SOEs exhibit a clear decreasing trend around political turnovers. Given these difference, we divide the full sample into two groups by their ownership type, i.e., SOEs versus non-SOEs, and estimate the baseline regression on these two subsamples separately.

Specifications (3) and (4) of Table 4 report the regression results for the sample of SOEs. Corporate investment rates for SOEs are negative but not statistically significantly different in the pre-turnover year and the turnover year. However, we see a large increase in investment rates in the post-turnover year. The negative coefficients of pre-turnover dummy and the positive significant coefficients on the one-year post-turnover dummy together suggest that SOEs exhibit a tendency to first slightly decrease investment immediately before change in governors but scale up investment right after a new provincial governor takes office. The estimates in specification (3) show that investment rates first decrease by 0.0022 in pre-turnover years and then increase right away by 0.0040 on average in the one-year post-turnover period, after controlling for growth opportunities and macroeconomic conditions. In terms of economic magnitude, the coefficients in specification (3) translates into a 3.2% decrease and a 6.0% increase in investment rates in the one-year pre- and post-turnover years respectively, relative to mean investment rates in other years.

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Specifications (5) and (6) of Table 4 report the regression results for the sample of non-SOE firms. We find that non-SOEs generally invest less in the pre-turnover period. We also find, in contrast to the behavior of SOEs, investment rates for non-SOEs decline in the post-turnover period. In terms of economic magnitude, these coefficient estimates in Specification (5) and (6) translate into an 4.8% to 8.2% drop in investment rates during the one-year post-turnover period, compared with mean investment rates in other sample years. As before, the other coefficient estimates are consistent with the literature in terms of signs and magnitudes. For robustness, we also estimate panel regressions with standard errors double-clustered at both economic region and year levels for non-SOEs and find similar results.

Overall, the regression results highlight an interesting pattern in corporate investment activity around the turnover of provincial governors in China. First, we find a negative relationship between investment and the pre-turnover period for non-SOEs. This is consistent with the findings of Julio and Yook (2012) in the sense that non-SOEs face political uncertainty prior to political leadership changes. We also find a robust increase in investment rates for SOEs following the appointment of a new provincial governor. The investment-to-assets ratio for SOEs increases by approximately 6.0% to 6.9%. The post-turnover increase in investment is a novel finding in the literature. The evidence is consistent with the view that the incentives of provincial governors lead them to exert influence on the investment policy of SOEs very early in their new term. In China, SOEs often follow political leadership and through SOEs, newly appointed bureaucrats stimulate investment activities to showcase their economic agenda for regional development.

The contrasting evidence of the effect of political turnovers on investment between SOEs and non-SOEs is consistent with the unique political institutions in China. Non-SOEs are more immune from political influence as they are more likely to maximize their private shareholders value. Therefore, political turnovers of provincial governors do not necessarily directly interfere in firm decisions or investment activities. Provincial-level SOEs, on the other hand, are

sensitive to political interference and political agendas as provincial governors exert a great degree of influence on firm decisions. SOE investment therefore is subject to political uncertainty ex ante and political influence ex post. The results suggest the possibility that the increasing investment rates of SOEs post-turnover crowd out the investment of non-SOEs. The next section examines this hypothesis in detail.

4.3. Post-turnover Crowding Out Effects

The prior literature focusing on political turnover and investment has largely ignored the widespread concern that investment policies of SOEs may crowd out the investment of private firms in the post-turnover period. As discussed in Section 2, a politically fuelled investment boom accompanied with both central and local level governor turnover is highly expected and visible. Ambitious government-led investments and expenditure projects are normally announced right after new governors' appointments as stimulus initiatives to prop up the local economy. Given time-to-build considerations, new provincial governors tend to stimulate investment through SOEs at the beginning of their term. Most of the new investment projects are initiated through SOEs to reinforce their dominant role in the market. As a consequence, non-SOEs rarely participate in post-turnover politically motivated investment projects. Many large SOEs are given government subsidies and possess great advantages in resources, personnel, tax advantages and access to relatively low cost financing compared to non-SOEs. Hence non-SOEs have a disadvantage compared to SOEs in participating in these investment projects. In addition, the surge of investment by SOEs may have a crowding-out effect on private investment.

To empirically test for a post-turnover crowding out effect, we include a SOE dummy as well as interaction terms between the SOE dummy and post-turnover indicators in our baseline investment regressions on the full sample. We include industry fixed effect to effectively

compare the investment rates of SOEs and non-SOEs within the same industry across the turnover cycle. We use the industry classifications issued by the China Securities Index (CSI) company[7]. The estimation results are reported in Table 5.

[Insert Table 5 here]

The first five specifications of Table 5 report estimates for each turnover period separately. We first note that on average, SOEs tend to invest less than non-SOEs, as demonstrated by the negative coefficients on the SOE dummy variable. Specification (1) compares the pre-turnover investment activity between SOEs and non-SOEs. The interaction term between the pre-turnover dummy and the SOE dummy is insignificant, suggesting that the pre-turnover behavior of the two types of firms is not significantly different. The same is true of the turnover year itself, as reported in Specification (2). The real difference in investment behavior become apparent in the post-turnover period. Specification (3) through (5) report positive and significant interaction terms between the SOE dummy and the post-turnover indicator variables. Specifications (6) and (7) include the full set of turnover indicator variables in the regression. Specification (6) defines the post-turnover period as two separate years, while Specification (7) combines the two years together. The results are similar to those reported in the earlier regressions. SOE investment increases significantly relative to that of the private firms in various post-turnover periods. For example, in the total post-turnover period, SOEs increase investment significantly relative to non-SOEs.

To summarize, the absolute decline of non-SOE post-turnover investment reported in Table 4 and the relative post-turnover decrease in investment for non-SOEs reported in Table 5 provide evidence that SOE investment crowds out private investment following political turnovers. We now turn to investigate whether the post-turnover patterns in investment report-

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[7]In unreported analysis, we also try industry classifications compiled by the China Securities Regulatory Commission (CSRC) and obtain similar results.

ed above are consistent with the common view that political influence in China acts to distort capital allocation.

4.4. Investment Efficiency around Political Turnover

In the previous subsection, we have documented the fact that the investment of SOEs in the post-turnover period has a crowding-out effect on the investment of non-SOEs. A natural question that arises is whether and to what extent crowding out represents a misallocation of resources. The previous results suggest the possibility that political incentives lead to over-investment by SOEs and under-investment by private firms. Given that investment makes up close to 50% of GDP in China, the degree to which investment is efficient is an important consideration. In this subsection, we measure changes in investment efficiency in the post-turnover period.

We measure investment efficiency as the sensitivity of investment to Tobin's Q. The basic idea is that an efficient investment policy is one in which investment rises when growth opportunities are high and declines when investment opportunities diminish. This metric has been used extensively in the literature. For example, Gertner, Powers and Scharfstein (2002) use this measure to analyze changes in investment efficiency around corporate spinoffs, Ozbas and Scharfstein (2010) investigate the investment efficiency of diversified firms, and Desai and Goolsbee (2005) examine the relationship between taxes and investment efficiency. Chen et al. (2011) use the sensitivity of investment to Tobin's Q to assess difference in average investment efficiency between SOEs and non-SOEs in China.

To measure changes in efficiency, we add to our baseline investment regression an interaction between the post-turnover dummy variable and Tobin's Q. We conduct separate tests for the whole sample, the subsample of SOEs, and the non-SOEs in order to investigate invest-

ment inefficiency after political turnovers. Table 6 reports the results from the post-turnover investment inefficiency tests.

[Insert Table 6 here]

The coefficients on the interaction terms between the two-year post-turnover dummy and Q are negative and significant in Specifications (1) and (2) of Table 6, while the interaction terms between the one-year post-turnover dummy and Q are not significant. The negative interaction term suggests that investment efficiency declines in the post turnover period in that investment expenditures are less correlated with growth opportunities, consistent with a potential capital misallocation.

The last four specifications in Table 6 compare post-turnover investment efficiency for SOEs and non-SOEs separately. In Specifications (3) and (4), the interaction terms for the SOE sample are negative. The magnitude of the interaction terms in Specification (3) suggests a reduction of nearly 50%, dropping by -0.0022 compared to the non-turnover sensitivity to Q of 0.0046. The last two columns report the results for the non-SOE sample. We also see for the private firms that investment efficiency declines significantly in the post-turnover period. We also include for all specifications a test of whether the post-investment investment efficiency is significantly different from zero. This is simply a test of whether the sum of the coefficients on Tobin's Q and the interaction term are zero. The table shows that investment efficiency, while significantly different from zero in all samples in other periods, is only marginally significant in the post-turnover period and insignificant for the private firms. These results imply that investment expenditures are not responding to signals about investment opportunities when incentives to invest for politicians are high, resulting in a loss of efficiency.

4.5. Additional Tests

In this section, we exploit heterogeneity in the degree to which political incentives are expected to influence the investment decisions of SOEs and non-SOEs around political turnover events. In some cases, the incentives of politicians to boost investment at the beginning of their term are very high, while in other cases the incentives are relatively muted. Incentives vary across the type of office the politician holds, the type of turnover, the education and the age of the politician, and whether or not the politician was born in the region of interest.

We first look at the difference in investment behavior between the appointment of provincial governors and that of party secretaries. Given the different economic and political roles of the two types of provincial leaders as discussed earlier, we expect that turnovers of party secretaries do not have an impact on firm investment post-turnover. As a placebo test, we reestimate the baseline investment regression using the turnovers of party secretaries.

The regression results are reported in Table 7. We find that across all samples that the post-turnover investment behavior of Chinese firms does not change significantly after the turnover of a party secretary. We do find a slight decline in investment in the turnover year for SOEs, but we do not see the divergence in investment activity between SOEs and non-SOEs that is present following the turnover of a provincial governor. The lack of a post-turnover effect is consistent with the fact that in Chinese institutions the party secretary is typically in charge of the Chinese Communist Party (CCP) personnel decisions but is not directly involved with economic affairs.

[Insert Table 7 here]

We have so far established the fact that SOEs decrease their investment prior to governor's turnover but scale up after the turnover, while non-SOEs reduce investment after the turnover. We now investigate the cross-sectional heterogeneity in turnover types (normal turnover vs.

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abnormal turnover) and characteristics of the immediate successors. Normal turnovers include promotions or parallel turnovers while abnormal turnovers include retirements and terminations due to death or indictment. 80 out of the 113 (around 71%) turnovers in our sample are classified as normal turnovers (promoted or laterally moved), and the remaining 29% are classified as abnormal. We manually collect education, birth place and age information of immediate successors for governors. We define an education dummy that takes on a value of one if the immediate successor holds a masters or PhD degree, and zero otherwise. 59 out of the 113 (approximate 52%) successors have a high education level (Masters or PhD) at the time of appointment. The remaining 54 of 113 have only bachelors degrees or less. We define a birth place dummy set equal to one if the immediate successor is born in the same province as he will assume office, and zero if his birth province is from a different region. 28 out of the 113 (approximate 25%) successors are born locally and assume offices in their birth provinces. Finally, we define a governor age dummy that takes on a value of one if the age of the new governor is in between 55 and 60 at the time of appointment. On average, provincial governors are 55.6 years old when they assume office and 64 out of the 113 (around 56%) governors are in between 55 and 60 years old at the time of appointment.

[Insert Table 8 here]

Table 8 presents the investment regression estimates for the sample of SOEs. The interaction terms between the post-turnover dummy and turnover type, between post-turnover dummy and education, between post-turnover dummy and birth place, and between post-turnover dummy and governor age are included in the analysis. We find that the interaction terms have great explanatory power. First, when interaction term between post-turnover dummy and normal turnover type dummy is included, the post-turnover dummy is not significant in the regression. This finding suggests that most of increase in investment after turnover is caused by normal turnovers. One explanation is that, compared to abnormal turnovers, immediate

successors in normal turnovers have stronger incentives to promote economic development to increase their chances for future promotion. Second, we include the education dummy and interact it with post-turnover indicator. The interaction term is negative and significant while the post-turnover dummy itself is positive and significant, with similar magnitudes. This result suggests that well-educated new governors do not abnormally stimulate corporate investment, and thus the average increase is mainly caused by the less-educated immediate successors following the governor turnovers. Third, we add an interaction term between the post-turnover dummy and the same birth place dummy (whether the immediate successor of governor comes from the same province for the new position). The interaction term is significant and positive while the post-turnover dummy does not have a significant coefficient. This result indicates that most of the investment increase following political turnover is caused by politicians who return to govern their home provinces. In the last two columns, we further add to our baseline investment regression the interaction term between the post-turnover dummy and the governor age dummy. We find that the interaction term is positive and statistically significant while the post-turnover dummy is not significant. This finding suggests that the post-turnover investment boom for SOEs is driven primarily by governors within the 55- to 60-year-old age bracket at the time of appointment. The intuition is that, as discussed in Section 2, governors within this age bracket are most concerned about their political careers and thus have the strongest incentives to stimulate investment through SOEs, relative to younger or older politicians due to mandatory retirement rules.

Overall, the results in this section suggest that the degree to which political incentives for stimulating investment are present and can explain differences in the post-turnover investment patterns we see for SOEs in China. Specifically, post-turnover effects on investment are mainly caused by normal turnovers of governors, and by turnovers with less educated immediate successors, and by turnovers in which the new governor was born in the same province, and by turnovers where the new governor is between 55 and 60 years old.

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4.6. Neighboring Province Difference-in-Differences Estimator

We now examine the post-turnover effect on firms' corporate investment by employing a "neighboring province" difference-in-difference (DD) estimation methodology. The previous results implicitly use all 31 provinces in China unaffected by political turnover in a given year as the "control" group. Since firms in neighboring provinces are more likely to be subject to similar unobserved economic shocks, we can tighten the identification by comparing changes in investment for firms in a province with a turnover event to changes in investment for firms in the neighboring provinces without a turnover event. Using the neighboring provinces as controls addresses the concern that our earlier results may be picking up regional variation in economic activity that are not absorbed by year fixed effects and supports the conclusion that the turnover effects documented above are caused by the incentives surrounding political turnover periods.

Following the identification of Dube, Lester and Reich (2010), we implement the neighboring province difference-in-differences estimator as follows: We define the "treatment" indicator to be set equal to one in the year just following the political turnover. For every province, we consider all firms in bordering provinces that are not currently in a post-turnover period as being control firms. Provinces that match the same turnover period as a treatment province is excluded from being a control province. The estimator is intended to measure differences in investment around the turnover period between firms in the treatment province and "untreated" firms in neighboring provinces in the same year.

We summarize the geographical distribution of provinces and their neighbors in Table 9. On average, a province has 4.48 neighboring provinces. Inner Mongolia and Shaanxi have the largest number of neighboring provinces at 8 each. While neighboring provinces are likely to have more correlated economic performance than more distant provinces, there are some cases where neighboring provinces can be quite different. For example, the provinces of Anhui and

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Zhejiang are considered to be quite different with respect to economic conditions and industry representation. To mitigate this concern, we categorize the 31 provinces into eight economic regions according to the similarities in their economic conditions and industrial structures and repeat the difference-in-difference estimator within these economic regions. The definitions of the eight economic regions is reported in Appendix B. We therefore tighten the definition of neighboring provinces by further requiring that they are located within the same economic region (*boldfaced* ones in Table 9). Figure 2 illustrates the frequency distribution of the number of turnovers by province.

[Insert Table 9 here]

To illustrate how we construct the treatment and control provinces, consider the example of Shanghai with post-turnover years in 2002 and 2004 as the *initial* treatment province. From Table 9, Shanghai has two geographically neighboring provinces, Jiangsu and Zhejiang, which are used as the *initial* neighboring control provinces. To obtain the *unaffected* control group, we first drop firm-year observations in 1999, 2003, 2009 and 2011 from Jiangsu province and firm-year observations in 2003 and 2012 from Zhejiang province respectively, as these sample years represent the post-turnover years [+1] of respective provinces. To avoid *asymmetric* comparison between the treatment province and its neighboring control provinces, we further drop firm-year observations in 2003 from Shanghai as this year coincides with the post-turnover years (i.e., 2003) of *both* Jiangsu province and Zhejiang province. In this example, *Treatment indicator* takes on a value of one if firms are located in Shanghai (i.e., the treatment province) and zero if they are in Jiangsu and Zhejiang (i.e., the neighboring control provinces). The *Post-turnover dummy* is set to equal to one if firm-year observations fall in 2002 or 2004 (i.e., the post-turnover years of Shanghai) and zero otherwise.

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With the treatment and control firms properly assigned, we estimate the following "neigh-boring province" difference-in-differences (DD) model

$$
\begin{aligned}
I_{ijt} = & \ \beta_0 + \beta_1 \text{Treatment dummy}_j + \beta_2 \text{Post-Turnover}_{j,t+1} \qquad\qquad (2)\\
& + \beta_3 \text{Treatment dummy}_j \times \text{Post-Turnover}_{j,t+1}\\
& + \beta_4 Q_{i,t-1} + \beta_5 CF_{i,t} + \beta_6 \%\Delta GDP_{j,t-1} + \beta_7 \%\Delta Sales_{i,t} + \mu,
\end{aligned}
$$

where i indexes firms, j indexes provinces, and t indexes time. *Treatment dummy* is an indicator variable that takes on a value of one if the firm-year observations belong to the treatment province and zero if they belong to the neighboring control provinces. *Post-turnover dummy* is an indicator variable that is set to one if firm-year observations fall in the post-turnover years of the treatment province; Firm characteristics and provincial GDP growth rate are included. μ is the error term. We control for province, industry and year fixed effects. Standard errors are clustered at the firm level. The variable of interest is the coefficient estimate of the interaction term, which measures the added effect of political turnovers on firms' investment rates in the post-turnover years. Panel A and Panel B of Table 10 report the "neighboring province" DD estimation results based on the original neighboring province definition (in normal font) and the refined definition (in boldface font) as given in Table 9 respectively.

[Insert Table 10 here]

The results further confirm that our previous findings are not likely caused by unobservable common factors that affect both the treatment and the control group in a similar manner. Columns (3) and (4) of Table 10 show that coefficient estimates of the interaction terms are positive and statistically significant for the sample of SOEs. This suggests that relative to other sample years, the post-turnover years experience an significant investment increase for SOEs, consistent with the baseline results. In terms of economic magnitude, the interaction term *Treatment dummy* $\times$ *Post-turnover dummy* in column (4) of Panel A has a coefficient

estimate of 0.0032, representing a 4.6% increase in investment rates for SOEs in the post-turnover years relative to the mean investment rates of SOEs in other sample years. As before, we don't observe the post-turnover investment boom for the full sample and the sample of non-SOEs.

5. Conclusion

This paper studies how state ownership and political incentives influence corporate investment in China. Using manually collected information on the transition of top provincial leaders in China for both governors and party secretaries, we find that turnovers of governors has a significant but divergent impact on SOEs and non-SOEs. Post-turnover, we find that there is a large wedge between the investment rates of SOEs and private firms. Investment rates for SOEs are abnormally high while investment rates of of non-SOEs are lower than normal. The results are consistent with the view that the incentives of new provincial governors influence the investment rates of SOEs in an effort to boost provincial economic growth and increase the chance of personal promotion. Furthermore, we find that the investment behavior of SOEs post-turnover has a crowding-out effect on the investment rates of private firms. These divergent patterns of investment reflect a misallocation of capital as measures of investment efficiency decline significantly following the turnover of a provincial governor.

Our research sheds lights on the interaction between political economy and corporate finance in an emerging economy. China, as the largest emerging economy with a unique political system, provides an interesting laboratory for studying how corporations react to both political uncertainty associated with leadership turnovers and the incentives politicians face to boost investment. Our empirical findings show that in China corporate decisions of SOEs often follow the political lead, while non-SOEs face great political uncertainty and diminished capacity for investment. Non-SOEs are not equipped with safeguards against political inter-

ference from the government, while SOEs are more likely to serve the interest of political leaders since their personnel decisions are controlled by these leaders and not by the shareholders. Our paper shows how political systems interact with ownership structures in China. It suggests that SOEs, though partially privatized through share issuance, are still subject to the heavy influence of politicians. The government still plays an important role in firm investment decisions, especially those that are state-owned.

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Appendix A: Variable Descriptions

Variable	Definition	Source
Investment	Capital expenditure divided by beginning-of-year book value of total assets (lagged total assets).	CSMAR
Tobin's Q	Book value of total assets minus book value of equity plus market value of equity scaled by book value of total assets.	CSMAR
Cash Flow	EBIT plus depreciation and amortization minus interest expense and taxes scaled by beginning-of-year book value of total assets.	CSMAR
Sales Growth	Firm level annual sales growth rate.	CSMAR
GDP Growth	Annual provincial real GDP growth rate.	Wind
SOE Dummy	Indicator variable set equal to one if the ownership type of the listed firm is state-owned.	CSMAR
Pre-turnover Year (-1)	Indicator variable takes on a value of one if the firm-year-province pair falls in the period of one year immediately before the turnover year.	Hand collected
Turnover Year (0)	Indicator variable takes on a value of one if the firm-year-province pair falls in the period of the turnover year.	Hand collected
Post-turnover Year (+1)	Indicator variable takes on a value of one if the firm-year-province pair falls in the period of one year immediately after the turnover year.	Hand collected
Post-turnover Year (+2)	Indicator variable takes on a value of one if the firm-year-province pair falls in the period of two year immediately after the turnover year.	Hand collected
Turnover Type Dummy	Indicator variable set equal to one if the provincial governor is promoted or moves laterally after his tenure of service.	Hand collected
Education Dummy	Indicator variable set equal to one if the provincial governor holds a Master or PhD degree.	Hand collected
Birth Place Dummy	Indicator variable set equal to one if the immediate successor will assume office in his home province.	Hand collected
Governor Age Dummy	Indicator variable set equal to one if the governor age is in between 55 and 60 at the time of appointment.	Hand collected

Appendix B: Information on Eight Economic Regions

Economic Region	Number	Provinces/Municipalities/Autonomous regions
Northeast Economic Region	3	Heilongjiang, Jilin and Liaoning
Northwest Economic Region	5	Gansu, Qinhai, Ningxia, Tibet and Xinjiang
Southwest Economic Region	5	Guangxi, Yunnan, Guizhou, Sichuan, Chongqing
Central Economic Region	4	Hunan, Hubei, Jiangxi and Anhui
Southern Coastal Economic Region	3	Guangdong, Fujian and Hainan
Eastern Coastal Economic Region	3	Shanghai, Jiangsu and Zhejiang
Northern Coastal Economic Region	4	Shandong, Hebei, Beijing and Tianjin
Middle Reach of Yellow River Economic Region	4	Shaanxi, Henan, Shanxi and Inner Mongolia

Table 1
Summary of Firm-Level Observations and Turnovers by Province

The first three columns report the distribution of firm observations for SOEs and non-SOEs jointly and separately across provinces. The last three columns report the distribution of provincial governors' turnovers. We split turnovers into normal and abnormal types by nature of the turnover. Normal turnovers include promotions or parallel turnovers while abnormal turnovers include retirements and terminations due to death or indictment.

Province	Observations (Total)	Observations (SOEs)	Observations (Non-SOEs)	Turnovers (Total)	Turnovers (Normal)	Turnovers (Abnormal)
Anhui	647	447	200	5	5	0
Beijing	1,378	1,028	350	4	4	0
Chongqing	381	282	99	3	1	2
Fujian	644	387	257	4	3	1
Gansu	238	150	88	4	4	0
Guangdong	2,710	1,599	1,111	2	0	2
Guangxi	306	169	137	3	2	1
Guizhou	211	160	51	4	1	3
Hainan	328	142	186	4	3	1
Hebei	421	266	155	6	6	0
Heilongjiang	362	262	100	4	4	0
Henan	449	301	148	3	3	0
Hubei	884	499	385	4	2	2
Hunan	535	382	153	5	5	0
Inner Mongolia	267	118	149	4	2	2
Jiangsu	1,337	649	688	4	4	0
Jiangxi	319	264	55	3	1	2
Jilin	439	235	204	5	4	1
Liaoning	706	450	256	4	3	1
Ningxia	148	64	84	1	0	1
Qinghai	118	65	53	4	4	0
Shaanxi	362	240	122	5	4	1
Shandong	1,135	687	448	3	1	2
Shanghai	2,565	1,971	594	3	3	0
Shanxi	351	256	95	6	3	3
Sichuan	813	403	410	2	1	1
Tianjin	374	301	73	3	3	0
Tibet	114	26	88	3	2	1
Xinjiang	374	244	130	2	2	0
Yunnan	288	196	92	3	1	2
Zhejiang	1,395	424	971	3	2	1
Total	20,599	12,667	7,932	113	83	30

Table 2

Summary of Firm-Level Observations and Turnovers by Year

The first three columns report the distribution of firm observations for SOEs and non-SOEs jointly and separately across years. The last three columns report the distribution of provincial governors' turnovers. We split turnovers into normal and abnormal types by nature of the turnover. Normal turnovers include promotions or parallel turnovers while abnormal turnovers include retirements and terminations due to death or indictment.

Year	Observations (Total)	Observations (SOEs)	Observations (Non-SOEs)	Turnovers (Total)	Turnovers (Normal)	Turnovers (Abnormal)
1998	751	489	262	13	8	5
1999	854	559	295	7	7	0
2000	950	621	329	4	3	1
2001	1,094	704	390	8	3	5
2002	1,180	765	415	9	6	3
2003	1,248	810	438	13	12	1
2004	1,316	852	464	6	4	2
2005	1,413	899	514	1	1	0
2006	1,424	901	523	8	5	3
2007	1,511	943	568	13	9	4
2008	1,634	992	642	5	4	1
2009	1,692	1,006	686	3	2	1
2010	1,844	1,042	802	9	8	1
2011	1,844	1,042	802	8	5	3
2012	1,844	1,042	802	6	6	0
Total	20,599	12,667	7,932	113	83	30

Table 3
Summary Statistics

Panel A shows summary statistics for the firm characteristics used in our analysis jointly and separately for SOEs and non-SOEs between 1998 and 2012. Panel B depicts the mean investment rates around turnover event years. Panel B also reports the significance of the difference in mean investment rates for a given year in the [-2, +2] turnover period and the rest of sample years. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively. Year 0 indicates the actual calendar year when turnover event occurs. See Appendix A for variable descriptions as well as the variable sources.

Panel A: Firm Characteristics				
Full Sample				
	N	Mean	Median	Std. Dev.
Investment Rate	20,599	0.0655	0.0387	0.0824
Q	20,385	2.1358	1.7010	1.4708
Cash Flow	19,466	0.0657	0.0608	0.0800
Sales Growth	20,324	0.2305	0.1320	0.6532
SOEs				
	N	Mean	Median	Std. Dev.
Investment Rate	12,667	0.0681	0.0417	0.0815
Q	12,612	1.8742	1.5224	1.2030
Cash Flow	12,073	0.0696	0.0626	0.0746
Sales Growth	12,501	0.2152	0.1349	0.5599
Non-SOEs				
	N	Mean	Median	Std. Dev.
Investment Rate	7,932	0.0615	0.0338	0.0838
Q	7,773	2.5604	2.0164	1.7418
Cash Flow	7,393	0.0593	0.0575	0.0877
Sales Growth	7,823	0.2551	0.1260	0.7789
Panel B: Mean Investment Rates around Turnover Years				
Full Sample				
Year	-2	-1	0	+1	+2
N	3,896	4,291	4,706	4,336	3,690
Investment Rate	0.0615	0.0654	0.0673	0.0679	0.0630
Mean Diff	-0.0050***	-0.0001	0.0023	0.0030**	-0.0031**
SOEs				
Year	-2	-1	0	+1	+2
N	2,414	2,630	2,882	2,674	2,368
Investment Rate	0.0662	0.0675	0.0708	0.0736	0.0698
Mean Diff	-0.0023	-0.0007	0.0036**	0.0070***	0.0021
Non-SOEs				
Year	-2	-1	0	+1	+2
N	1,482	1,661	1,824	1,662	1,322
Investment Rate	0.0539	0.0622	0.0617	0.0587	0.0510
Mean Diff	-0.0094***	0.0009	0.0002	-0.0035	-0.0127***

Table 4
Baseline Investment Regressions

The unit of observation is at firm-year level. The dependent variable is the firm-level investment rate defined as CAPX/Lagged Assets. Independent variables include the lagged Tobin's Q, cash flow, province-level real GDP growth rate, sales growth and the turnover period [-1, 0, +1, +2] dummies, with year 0 being the year the actual turnover occurred. See Appendix A for the definition of variables. The first two columns report results for the full sample. The last four columns present results for SOEs and non-SOEs separately. Variables of interests are the four turnover period dummies. We use baseline investment regression and control for firm and year fixed effects. Standard errors are clustered at firm level. T-statistics are reported in square brackets below coefficient estimates. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Full Sample		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Pre-turnover year (-1)	-0.0027	-0.0029	-0.0022	-0.0019	-0.0035	-0.0044
	[-2.26]**	[-2.39]**	[-1.51]	[-1.30]	[-1.71]*	[-2.14]**
Turnover year (0)	-0.0001	-0.0003	0.0014	0.0017	-0.0023	-0.0034
	[-0.07]	[-0.23]	[0.83]	[0.99]	[-1.04]	[-1.50]
Post-turnover year (+1)	0.0014	0.0009	0.0040	0.0046	-0.0030	-0.0051
	[1.05]	[0.65]	[2.51]**	[2.51]**	[-1.38]	[-2.11]**
Post-turnover year (+2)		-0.0014		0.0019		-0.0077
		[-1.05]		[1.11]		[-3.35]***
Q	0.0044	0.0044	0.0042	0.0042	0.0046	0.0045
	[7.10]***	[7.07]***	[4.38]***	[4.41]***	[5.67]***	[5.56]***
Cash Flow	0.2631	0.2629	0.2563	0.2564	0.2697	0.2684
	[18.88]***	[18.88]***	[13.62]***	[13.62]***	[12.96]***	[12.96]***
GDP Growth	0.0273	0.0280	0.0264	0.0251	0.0256	0.0254
	[2.17]**	[2.22]**	[1.75]*	[1.67]*	[1.11]	[1.10]
Sales Growth	0.0067	0.0067	0.0083	0.0083	0.0052	0.0052
	[5.32]***	[5.32]***	[4.77]***	[4.77]***	[2.94]***	[2.93]***
Constant	0.0363	0.0367	0.0383	0.0378	0.0337	0.0362
	[16.29]***	[16.02]***	[13.79]***	[13.21]***	[8.81]***	[9.23]***
Observations	19,163	19,163	11,982	11,982	7,181	7,181
Between R^2	20.10%	20.11%	25.23%	25.28%	15.34%	15.69%
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm
	Year	Year	Year	Year	Year	Year

Table 5
Post-turnover Crowding Out Effects

The unit of observation is at firm-year level. The dependent variable is the firm-level investment rate defined as CAPX/Lagged Assets. Independent variables include the lagged Tobin's Q, cash flow, province-level real GDP growth rate, sales growth and the turnover period [-1, 0, +1, +2] dummies, with year 0 being the year the actual turnover occurred. See Appendix A for the definition of variables. To test for the post-turnover crowding out effect, we further include a SOE dummy as well as interaction terms between the SOE dummy and post-turnover indicators in our baseline investment regression on the full sample. Variables of interests are the interaction terms. We control for industry and year fixed effects. Standard errors are clustered at firm level. T-statistics are reported in square brackets below coefficient estimates. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pre-turnover year (-1)	-0.0028					-0.0048	-0.0049
	[-1.49]					[-2.29]**	[-2.34]**
Pre-turnover (-1) × SOE dummy	-0.0012					0.0007	0.0008
	[-0.54]					[0.30]	[0.31]
Turnover year (0)		-0.0014				-0.0041	-0.0044
		[-0.77]				[-1.87]*	[-2.03]**
Turnover year (0) × SOE dummy		0.0014				0.0035	0.0034
		[0.59]				[1.26]	[1.24]
Post-turnover year (+1)			-0.0028			-0.0063	
			[-1.47]			[-2.71]***	
Post-turnover (+1) × SOE dummy			0.0053			0.0081	
			[2.23]**			[2.82]***	
Post-turnover year (+2)				-0.0083		-0.0104	
				[-4.17]***		[-4.65]***	
Post-turnover (+2) × SOE dummy				0.0071		0.0096	
				[2.92]***		[3.49]***	
Post-turnover year (+1,+2)					-0.0072		-0.0083
					[-3.81]***		[-4.08]***
Post-turnover (+1,+2) × SOE dummy					0.0080		0.0088
					[3.53]***		[3.53]***
SOE dummy	-0.0043	-0.0049	-0.0057	-0.0057	-0.0075	-0.0088	-0.0088
	[-2.04]**	[-2.27]**	[-2.65]***	[-2.66]***	[-3.31]***	[-3.29]***	[-3.29]***
Firm/Economy Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	19,163	19,163	19,163	19,163	19,163	19,163	19,163
Between R^2	33.01%	33.00%	33.04%	33.23%	33.21%	33.35%	33.26%
Fixed Effects	Industry	Industry	Industry	Industry	Industry	Industry	Industry
	Year	Year	Year	Year	Year	Year	Year

Table 6
Investment Efficiency Tests

The unit of observation is at firm-year level. The dependent variable is the firm-level investment rate defined as CAPX/Lagged Assets. Independent variables include the lagged Tobin's Q, cash flow, province-level real GDP growth rate, sales growth and the post-turnover period [+1, +2] dummies, with year 0 being the year the actual turnover occurred. See Appendix A for the definition of variables. To measure changes in efficiency, we add to our baseline investment regression an interaction between the post-turnover dummy variable and Tobin's Q. Variables of interests are the interaction terms. The first two columns report results for the full sample. The last four columns present results for SOEs and non-SOEs separately. We control for firm and year fixed effects. Standard errors are clustered at firm level. T-statistics are reported in square brackets below coefficient estimates. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Dependent Variable: Firm-level Investment					
	All Firms		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Post-turnover year (+1)		0.0019		0.0039		-0.0045
		[0.81]		[1.29]		[-1.19]
Post-turnover (+1) $\times Q$		-0.0003		0.0001		0.0004
		[-0.27]		[0.09]		[0.25]
Post-turnover year (+2)	0.0047	0.0052	0.0045	0.0053	0.0024	0.0012
	[2.11]**	[2.19]**	[1.64]	[1.80]*	[0.65]	[0.31]
Post-turnover (+2) $\times Q$	-0.0032	-0.0032	-0.0022	-0.0020	-0.0035	-0.0034
	[-3.06]***	[-3.04]***	[-1.57]	[-1.37]	[-2.26]**	[-2.18]**
Q	0.0048	0.0049	0.0046	0.0045	0.0049	0.0048
	[7.37]***	[6.94]***	[4.58]***	[4.05]***	[5.75]***	[5.28]***
Cash Flow	0.2625	0.2627	0.2553	0.256	0.2703	0.2693
	[18.89]***	[18.89]***	[13.61]***	[13.64]***	[12.99]***	[12.96]***
GDP Growth	0.0299	0.0302	0.0268	0.0265	0.0317	0.0285
	[2.38]**	[2.40]**	[1.77]*	[1.76]*	[1.40]	[1.25]
Sales Growth	0.0067	0.0067	0.0083	0.0083	0.0051	0.0052
	[5.22]***	[5.33]***	[4.78]***	[4.79]***	[2.89]***	[2.91]***
Constant	0.035	0.0345	0.038	0.0371	0.031	0.0327
	[15.89]***	[14.87]***	[13.50]***	[12.46]***	[8.44]***	[8.36]***
Test: $\beta_Q + \beta_{Int} = 0$	0.0017	0.0017	0.0025	0.0025	0.0014	0.0014
t-statistic	[1.65]*	[1.66]*	[1.83]*	[1.87]*	[0.98]	[0.97]
Observations	19,163	19,163	11,982	11,982	7,181	7,181
Between R^2	0.2012	0.2019	0.2485	0.2523	0.1588	0.1580
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm
	Year	Year	Year	Year	Year	Year

Table 7
Baseline Investment Regressions: Party Secretary Turnover

This table presents estimation results of the baseline specification for *party secretary* turnovers. The unit of observation is at firm-year level. The dependent variable is the firm-level investment rate defined as CAPX/Lagged Assets. Independent variables include the lagged Tobin's Q, cash flow, province-level real GDP growth rate, sales growth and the *party secretary* turnover period [-1, 0, +1, +2] dummies, with year 0 being the year the actual turnover occurred. See Appendix A for the definition of variables. The first two columns report results for the full sample. The last four columns present results for SOEs and non-SOEs separately. Variables of interests are the four *party secretary* turnover period dummies. We use baseline investment regression and control for firm and year fixed effects. Standard errors are clustered at firm level. T-statistics are reported in square brackets below coefficient estimates. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Full Sample		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Pre-turnover year (-1)	-0.0022	-0.0026	-0.0019	-0.0021	-0.0027	-0.0035
	[-1.79]*	[-2.10]**	[-1.23]	[-1.34]	[-1.34]	[-1.68]*
Turnover year (0)	-0.0035	-0.0043	-0.0048	-0.0051	-0.0015	-0.0029
	[-2.79]***	[-3.00]***	[-3.04]***	[-2.94]***	[-0.70]	[-1.18]
Post-turnover year (+1)	0.0003	-0.0005	0.0008	0.0004	-0.0006	-0.0020
	[0.22]	[-0.32]	[0.50]	[0.22]	[-0.25]	[-0.77]
Post-turnover year (+2)		-0.0025		-0.0012		-0.0045
		[-1.74]*		[-0.69]		[-1.91]*
Q	0.0043	0.0043	0.0042	0.0041	0.0045	0.0045
	[6.94]***	[6.88]***	[4.38]***	[4.36]***	[5.51]***	[5.43]***
Cash Flow	0.2625	0.2622	0.2559	0.2558	0.2699	0.2694
	[18.88]***	[18.85]***	[13.64]***	[13.61]***	[12.97]***	[12.98]***
GDP Growth	0.0257	0.0254	0.0230	0.0232	0.0299	0.0272
	[2.04]**	[2.01]**	[1.53]	[1.54]	[1.31]	[1.18]
Sales Growth	0.0067	0.0067	0.0083	0.0083	0.0052	0.0052
	[5.34]***	[5.34]***	[4.78]***	[4.78]***	[2.91]***	[2.91]***
Constant	0.0376	0.0386	0.0408	0.0412	0.0325	0.0347
	[16.83]***	[16.08]***	[14.61]***	[13.85]***	[8.49]***	[8.35]***
Observations	19,163	19,163	11,982	11,982	7,181	7,181
Between R^2	20.09%	20.05%	24.95%	24.90%	15.40%	15.45%
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm
	Year	Year	Year	Year	Year	Year

Table 8
Baseline Investment Regressions: Heterogeneity in Type and Politician

The unit of observation is at firm-year level. The dependent variable is the firm-level investment rate defined as CAPX/Lagged Assets. Independent variables include the lagged Tobin's Q, cash flow, province-level real GDP growth rate, sales growth and the turnover period [-1, 0, +1] dummies, with year 0 being the year the actual turnover occurred. To investigate the cross-sectional heterogeneity in turnover types and governor characteristics, we add to our baseline investment regression an interaction term between post-turnover dummy and turnover type, as well as interaction terms between the post-turnover dummy and various governor characteristics such as education level, birth place and age. Variables of interests are the interaction terms. Turnover type is an indicator variable that takes on a value of one if the provincial governor is promoted or moves laterally after his tenure of service. Education is set to one if the provincial governor holds a Master or PhD degree. Birth Place is an indicator variable that takes on a value of one if the new governor will assume office in his home province. Governor Age is set to one if the governor age is in between 55 and 60 at the time of appointment. See Appendix A for the definition of variables. We use the sample of SOEs and control for firm and year fixed effects. Standard errors are clustered at firm level. T-statistics are reported in square brackets below coefficient estimates. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Turnover Type		Education		Birth Place		Governor Age	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pre-turnover year(-1)		-0.0023		-0.0025		-0.0019		-0.0024
		[-1.54]		[-1.69]*		[-1.32]		[-1.61]
Turnover year (0)		0.0017		0.0013		0.0016		0.0013
		[0.99]		[0.79]		[0.93]		[0.79]
Post-turnover year (+1)	-0.0005	-0.0005	0.0082	0.0085	0.0018	0.0021	-0.0004	-0.0003
	[-0.18]	[-0.20]	[3.73]***	[3.68]***	[1.11]	[1.20]	[-0.17]	[-0.13]
Post-turnover year (+1) × Turnover Type	0.0061	0.0066						
	[1.99]**	[2.15]**						
Post-turnover year (+1) × Education			-0.0082	-0.0084				
			[-2.87]***	[-2.96]***				
Post-turnover year (+1) × Birth Place					0.0096	0.0094		
					[2.82]***	[2.77]***		
Post-turnover year (+1) × Governor Age							0.0063	0.0064
							[2.26]**	[2.31]**
Q	0.0042	0.0041	0.0041	0.0040	0.0042	0.0042	0.0042	0.0042
	[4.43]***	[4.38]***	[4.30]***	[4.26]***	[4.45]***	[4.40]***	[4.42]***	[4.38]***
Cash Flow	0.2562	0.2564	0.256	0.2562	0.2555	0.2557	0.2565	0.2568
	[13.67]***	[13.65]***	[13.65]***	[13.62]***	[13.66]***	[13.63]***	[13.69]***	[13.66]***
GDP Growth	0.0237	0.0234	0.0277	0.0274	0.0263	0.0264	0.0285	0.0282
	[1.57]	[1.54]	[1.86]*	[1.83]*	[1.76]*	[1.75]*	[1.90]*	[1.87]*
Sales Growth	0.0083	0.0083	0.0082	0.0083	0.0083	0.0083	0.0082	0.0082
	[4.78]***	[4.78]***	[4.76]***	[4.77]***	[4.78]***	[4.78]***	[4.73]***	[4.73]***
Constant	0.0385	0.0386	0.0382	0.0385	0.0382	0.0382	0.0379	0.0381
	[14.17]***	[13.87]***	[14.13]***	[13.84]***	[14.13]***	[13.77]***	[14.00]***	[13.72]***
Observations	11,982	11,982	11,982	11,982	11,982	11,982	11,982	11,982
Between R^2	25.02%	25.09%	25.10%	25.16%	25.22%	25.30%	25.02%	25.09%
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
	Year	Year	Year	Year	Year	Year	Year	Year

Table 9
Neighboring Provinces

This table tabulates the geographically neighboring provinces for each of the 31 provinces used in our analysis. "# of NP" stands for the number of neighboring provinces and "NP1 - NP8" are the neighboring provinces. The geographically neighboring provinces within the same economic regions as defined in Appendix B are boldfaced.

Province Name	Abbreviation	# of NP	NP1	NP2	NP3	NP4	NP5	NP6	NP7	NP8
Anhui	AH	7 (**4**)	**HEN**	**HB**	**HN**	JS	**JX**	SD	ZJ	
Beijing	BJ	2 (**2**)	**HEB**	**TJ**						
Chongqing	CQ	5 (**3**)	**GZ**	HB	HN	**SN**	SC			
Fujian	FJ	3 (**2**)	**GD**	JX	**ZJ**					
Gansu	GS	6 (**6**)	**NM**	**NX**	**QH**	**SN**	**SC**	**XJ**		
Guangdong	GD	5 (**2**)	**FJ**	GX	**HI**	HN	JX			
Guangxi	GX	4 (**2**)	GD	**GZ**	HN	**YN**				
Guizhou	GZ	5 (**4**)	**CQ**	**GX**	HN	**SC**	**YN**			
Hainan	HI	1 (**1**)	**GD**							
Hebei	HEB	7 (**3**)	**BJ**	HEN	NM	LN	**SD**	SX	**TJ**	
Heilongjiang	HL	2 (**1**)	NM	**JL**						
Henan	HEN	6 (**3**)	**AH**	HEB	**HB**	SN	SD	**SX**		
Hubei	HB	6 (**4**)	**AH**	CQ	**HEN**	**HN**	**JX**	SN		
Hunan	HN	6 (**2**)	CQ	GD	GX	GZ	**HB**	**JX**		
Inner Mongolia	NM	8 (**3**)	**GS**	HEB	HL	JL	LN	**NX**	**SN**	SX
Jiangsu	JS	4 (**3**)	AH	**SD**	**SH**	**ZJ**				
Jiangxi	JX	6 (**3**)	**AH**	FJ	GD	**HB**	**HN**	ZJ		
Jilin	JL	3 (**2**)	**HL**	NM	**LN**					
Liaoning	LN	3 (**1**)	HEB	NM	**JL**					
Ningxia	NX	3 (**3**)	**GS**	**NM**	**SN**					
Qinghai	QH	4 (**4**)	**GS**	**SC**	**XZ**	**XJ**				
Shaanxi	SN	8 (**5**)	**CQ**	**GS**	HEN	HB	**NM**	**NX**	SX	**SC**
Shandong	SD	4 (**2**)	AH	**HEB**	HEN	**JS**				
Shanghai	SH	2 (**2**)	**JS**	**ZJ**						
Shanxi	SX	4 (**1**)	HEB	**HEN**	NM	SN				
Sichuan	SC	7 (**7**)	**CQ**	**GS**	**GZ**	**QH**	**SN**	**XZ**	**YN**	
Tianjin	TJ	2 (**2**)	**BJ**	**HEB**						
Tibet	XZ	4 (**4**)	**QH**	**SC**	**XJ**	**YN**				
Xinjiang	XJ	3 (**3**)	**GS**	**QH**	**XZ**					
Yunnan	YN	4 (**4**)	**GX**	**GZ**	**SC**	**XZ**				
Zhejiang	ZJ	5 (**3**)	AH	**FJ**	**JS**	JX	**SH**			

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Table 10
Neighboring Province Difference-in-Differences Estimates

This table presents the results of regressions using the neighboring province difference-in-difference methodology. Results reported in Panel A are based on the geographically neighboring provinces defined in Table 9. Panel B further reports estimates using geographically neighboring provinces within the same economic regions (boldfaced regions in Table 9). The dependent variable is firm-level investment defined as CAPX/Lagged Assets. *Treatment dummy* is an indicator variable that takes on a value of one if the firm belongs to the treatment province and zero if it belongs to the control province. *Post-turnover year* is also an indicator variable that is set to one if the firm-year observation falls in the post-turnover year [+1] period, with year 0 being the year the turnover occurred. The variable of interest is the interaction term *Treatment dummy* × *Post-turnover dummy*. The first two columns report results for the full sample. The last four columns present results for SOEs and non-SOEs separately. To save space, we suppress firm and economy control variables. We control for province, industry and year fixed effects. Standard errors are clustered at the firm level and t-statistics are reported in square brackets below coefficient estimates. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Geographically neighboring provinces						
	Full sample		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment dummy ×	0.0021	0.0017	0.0035	0.0032	-0.0011	-0.0009
Post-turnover year (+1)	[1.61]	[1.27]	[2.07]**	[1.86]*	[-0.51]	[-0.44]
Observations	88159	81786	52783	49786	35376	32000
Adjusted R^2	12.10%	22.85%	17.01%	25.90%	11.03%	22.27%
Firm/Economy Controls	No	Yes	No	Yes	No	Yes
Province/Industry/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Cluster by firm	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Geographically neighboring provinces within same economic regions						
	Full sample		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment dummy ×	0.0019	0.0018	0.0036	0.0034	-0.0017	-0.0009
Post-turnover year (+1)	[1.33]	[1.28]	[1.94]*	[1.89]*	[-0.73]	[-0.38]
Observations	62,496	57,904	37,562	35,398	24,934	22,506
Adjusted R^2	11.59%	22.46%	16.50%	25.55%	10.06%	21.44%
Firm/Economy Controls	No	Yes	No	Yes	No	Yes
Province/Industry/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Cluster by firm	Yes	Yes	Yes	Yes	Yes	Yes

Figure 1. Investment Rates around Turnover Years

The figure depicts average investment rates around turnover event years for all listed firms (red line), SOEs (blue line) and non-SOEs (green line) respectively. Year 0 indicates the calendar year in which governor turnover event occurs.
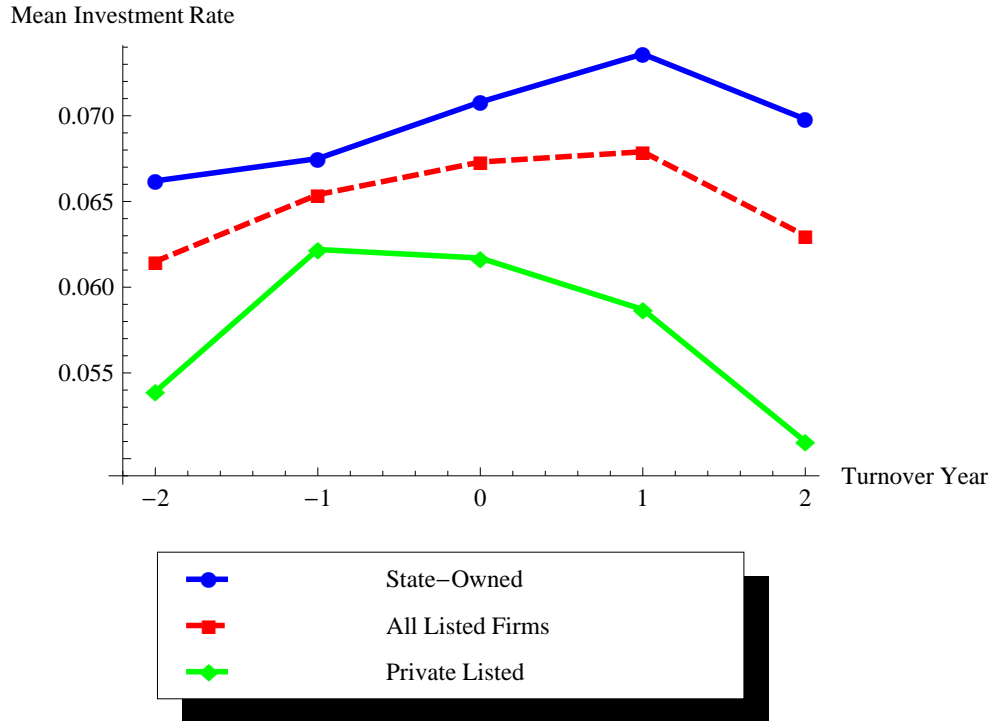
Figure 2. Frequency Distribution of Provincial Governor Turnovers by Province