Political Favouritism and Investment Efficiency

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1. Introduction

Many studies examine the value of corporate political connections. Relying on a sample of 35 countries over the period of 1997 through 2002, Faccio, Masulis, and McConnell (2006) find that politically connected firms are significantly more likely to be bailed out by their governments than nonconnected firms. Based on loan data for over 90,000 firms in Pakistan in the period of 1996 to 2002, Khwaja and Mian (2005) find that politically connected firms (having a politician on the board) receive 45% more loans from government banks. Examining Brazilian firms that buy political connection through contributing to political campaigns for the 1998 and 2002 elections, Claessens, Feijen, and Laeven (2008) find that firms making higher campaign contributions have higher stock returns around the announcements of the election results and have preferential access to bank financing in the 4 years following the elections. Measuring political connection similarly through campaign contributions in a sample of close US congressional elections, Akey (2015) finds that the postelection abnormal returns are about 3% higher for firms donating to winning candidates. Goldman, Rocholl, and So (2009) find, for the sample of S&P 500 firms, a positive abnormal return following the announcement of the nomination of a politically connected person to the board of directors. Focusing on the announcement of the nomination of Timothy Geithner as US Treasury Secretary and later news that his confirmation may be derailed, Acemoglu, Johnson, Kermani, Kwak, and Mitton (2016) find that financial firms with a prior connection to Timothy Geithner have an abnormal stock return of about 6% (12%) over 1 (10) trading day(s) after the nomination announcement, and subsequently have negative abnormal returns when news about the possible derailment of his confirmation broke. Using an administrative reform that changes the size of local municipalities in Denmark (proxy for change in political power), Amore and Bennedsen (2013) find that the increase in political power significantly increases the profitability of firms connected to local politicians. Fisman (2001) examines the stock price reaction to 6 episodes

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of rumours about Indonesian president Suharto's health for 79 Indonesian firms with various degree of connection to the president. He finds that, during each episode, returns of more politically dependent firms are significantly lower than those of less dependent firms, which suggests that a large portion of the firm value for well-connected firms may be from political connection.

Using all publicly listed non-financial firms in China over the period of 2004 through 2014, we examine the impact of politicians' regional favouritism on corporate investment efficiency. We find that firms headquartered in favoured cities (favoured firms) have significantly less efficient investment than unfavoured firms. The larger deviation from the optimal investment for favoured firms results from their more severe overinvestment. We explore the channels between politicians' regional favouritism and corporate overinvestment. We find that favoured firms have significantly better access to external debt financing and receive significantly more government subsidies. These findings are consistent with politicians helping their favoured firms to obtain finance and even directly handing out subsidies to the favoured firms. Blessed with easily obtained or even "free" cash flows, favoured firms tend to overinvest.

Most studies document various benefits associated with political connection. The politicians' regional favouritism examined in our paper can be considered as a particular form of political connection: a connection established by being located in a city favoured by politicians. Our paper thus contributes to the literature on the value of political connection by documenting a negative consequence of having political connection (i.e., less efficient investment) resulting from an apparent benefit of having political connection (better access to finance).

There is a developing literature on regional favouritism. Using nighttime light intensity as a broad measure of regional favouritism in terms of the aggregate distributive effect of many different policies for a sample of 38,427 subnational regions from 126 countries over the period

of 1992 to 2009, Holder and Raschky (2014) find that subnational administrative regions have more intense nighttime light intensity when they are the birth region of the country's current political leader. Faccio and Parsley (2009) examine 122 sudden deaths of politicians in 35 countries. They find that publicly traded firms based in the city in which the politician was born or the politician lived have a significantly negative abnormal return of about -1.68% over the 10 days following the sudden death. In addition, their sales growth and leverage decline significantly in the year following the death.

However, we are unaware of any study in the regional favouritism literature that examines the impact of regional favouritism on corporate investment efficiency. Our study tries to fill the gap by focusing on China. China provides an ideal setting to examine the issue. First, it has a highly politicized environment. The government has effective control over all the important aspects of the economy and all the economic agents including the publicly listed firms. Therefore, there is great room for politicians' regional favouritism to play. China consists of more than 30 provinces. In each province, the communist party provincial committee secretary and the governor are the two highest-ranking politicians with the most political power. Relying on hand-collected data, we identify the following cities as politically favoured: the cities that are the birthplace of the incumbent party secretary or governor of the province to which the cities belong, and the cities for which the two politicians once served as the municipal party secretary, deputy municipal party secretary, mayor, or deputy mayor, and are located in the province under their rule. We then study how the politicians' favouritism impacts the firms located in the favoured cities, in particular, their investment efficiency. Second, China has been in transition from a centrally planned economy in which the government dictates every aspects of the economy to a market economy in which market forces are allowed to play the most important role. This is essentially a process of reducing government interference. Different from the very rapid transition in Eastern European countries, the process in China is a much

smoother one at a controlled pace. In addition, the transition process not only is time-varying, but also shows substantial variation in its progress across China's 30 strong provinces. Such time-series and cross-sectional variation in the overall extent to which the provincial politicians intervene their regional economy allows us to test whether and how such extent affects the impact of regional favouritism on corporate investment. Third, a number of very large, strategically important state-owned enterprises (SOEs) are administered by the Chinese central government. The provincial politicians should therefore not be able to interfere in the business of these central SOEs. This institutional feature allows us to have two subsamples of firms: central SOEs not subject to provincial politicians' interference, and local firms subject to such interference. A comparison of two differences: the difference in investment efficiency between central SOEs located in favoured cities and central SOEs located in unfavoured cities; and the difference in investment efficiency between local firms in favoured cities and local firms in unfavoured cities allows us to pinpoint whether the impact of politicians' regional favouritism on the favoured firms is through the politicians' preferential treatment of their favoured cities (e.g., through providing more and better public goods that provide positive externalities to all the firms located in a favoured city) or through the politicians providing preferential treatment directly to their favoured firms.

The remainder of the paper is organized as follows. Section 2 describes our sample and data. Section 3 details the empirical tests and findings. Section 4 concludes the paper.

2. Sample and data

Our sample includes all the Chinese firms that have been publicly listed on the Shanghai or the Shenzhen Stock Exchange during the sample period of 2004 through 2014. We exclude from the sample financial firms because of the very different nature of their operating, investing and financing activities. Our final sample comprises 17,573 firm-year observations.

To determine politicians' regional favouritism, we hand-collected the curricula vitae of the provincial communist party secretaries and the governors that detail all their work experience and birthplace. To measure firm political connection, we hand-collected the curricula vitae of the chairman of the board and the CEO for the sample firms. All the stock and market returns, data on GDP, GDP growth, and fiscal revenue for the sample cities, and all the firm accounting data except for government subsidies for the period of 2004 through 2006 are from the CSMAR database. The government subsidies for 2004 to 2006 are collected from the Resset database.[1] Industry information is obtained from the CCER Sinofin database. The marketization index for the provinces is from Fan, Wang, and Zhu (2011). Provincial judicial expenditure per capita is from Annals of Chinese Law.

Table 1 presents the distribution by year of our sample firms and the cities where their headquarters are located. First, the number of sample firms increases steadily over the sample period, of which the years of 2010 and 2011 witness the largest increases. Reflecting this trend, the number of sample cities also shows a steady increase, with the year 2010 seeing the largest increase. Second, other than the spike in the period of 2008-2011, the number of favoured firms among our sample remains fairly stable around the annual average of about 315 firms over the sample period. On average, about 20% of our sample firms are favoured firms and they are headquartered in approximately 10% of our sample cities. The fact that favoured firms account for a sizeable fraction of all the publicly firms indicates that it is important to thoroughly investigate the impact of regional favouritism.

Table 2 shows summary statistics on sample firm fundamentals. An average sample firm has around 2.4 billion yuan worth of total assets, around 49% of which is financed by debt. One yuan of total assets generates approximately 4.5 cents of operating cash flow and 3.4 cents of

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[1] The reason why government subsidies for 2004-2006 and for 2007-2014 are respectively from Resset and CSMAR is that the accounting treatment of government subsidy changed on January 1, 2007.

operating income. About 27% of our sample firms are politically connected. As a proxy for agency costs resulting from managerial discretion, administrative expenses account for about 11.1% of total assets. A unique proxy for tunnelling in Chinese firms, the amount of other receivables is around 3.4% of total assets. Around 36% of the directors are independent, and about 17.8% of the CEOs also chair the board of directors. Our sample firms are headquartered in cities with an average GDP of about 132 billion yuan and a very high GDP growth rate of around 15%.

3. Empirical tests and results

3.1. Univariate tests

As a first probe into the relation between political favouritism and corporate investment efficiency, we conduct a univariate test of the differences in investment efficiency between favoured and unfavoured firms. Investment efficiency is difficult to measure, because the optimal investment is unobservable. We therefore try to alleviate the measurement error by using three measures, IE_R, IE_B, and IE_C based on Richardson (2006), Biddle, Hilary, and Verdi (2009), and Chen, Hope, Li, and Wang (2011), respectively. Their common approach is to first establish a model for the optimal corporate investment using firm fundamentals, and the residuals from the regressions, which are the difference between actual and fitted values of investments, represent deviations from the optimal investment, that is, investment inefficiency. The difference between the three measures is that the three studies rely on different models of the optimal investments.

The last three columns of Table 2 present the results. Since the residuals can be either positive or negative and represent respectively over- or under-investments, we compare the average absolute value of the three investment efficiency measures. First, the average values of the three measures for each of the two groups of firms (favoured and unfavoured) are close

to each other. In addition, the values are in line with those documented in existing studies. For example, Chen et al. (2011) report an average of about 0.064, similar to that of our measure IE_C. Second, the average absolute values of all the three investment efficiency measures for the favoured firms are significantly greater than those for the unfavoured firms. This indicates that favoured firms invest significantly less efficiently than unfavoured firms. Third, we also compare main firm characteristics between these two groups of firms. Favoured firms are significantly smaller, less profitable, and more highly leveraged. In terms of governance, favoured firms seem to have poorer governance quality: they have higher agency costs (admin), more tunneling, and less independent board, while lower likelihood for CEOs to also chair the board. In terms of their headquarter cities, favoured firms are located in economically larger cities with higher economic growth. Fourth, it is worth noting that favoured and unfavoured firms are not significantly different in either the amount of operating cash flows or the frequency of being politically connected. Because the operating cash flows are the sustainable sources of investment funds, they may be an important factor of investment efficiency. The lack of difference in the operating cash flows suggests that the less efficient investment of favoured firms is not attributable to their having more or less operating cash flows than unfavoured firms. Moreover, the lack of significance in the frequency of being politically connected suggests that our measure of politicians' regional favouritism is not just another proxy for political connection but captures different dimensions that have important implications.

3.2. Politicians' regional favouritism and firm investment efficiency: multivariate regression results

Our univariate results indicate that firms located in politically favoured cities have significantly less efficient investment than those located in unfavoured cities. The two groups of firms do not significantly differ in terms of the amount of operating cash flows or the

frequency of being politically connected, suggesting, at least on a univariate basis, that it is politicians' regional favouritism, rather than firms' political connection or the amount of internally generated cash flows, that drives the investment (in)efficiency.

However, the univariate tests also show that favoured and unfavoured firms are significantly different in terms of many other firm characteristics such as size, leverage, profitability, and governance quality. To tease out the relation between political favouritism and investment efficiency, we need to conduct multivariate analyses controlling for the differences in these relevant factors. To this end, we run the following pooled regressions using annual data for all the sample firms over the sample period of 2004 to 2014:

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\begin{aligned}
IE_{i,t} = \alpha_0 &+ \beta_1 favour_{i,t-1} + \beta_2 OCF_{i,t-1} + \beta_3 size_{i,t-1} + \beta_4 lev_{i,t-1} + +\beta_5 roa_{i,t-1} \\
&+ \beta_6 connect_{i,t-1} + \beta_7 ad\min_{i,t-1} + \beta_8 tunnel_{i,t-1} + \beta_9 independent_{i,t-1} + \beta_{10} duality_{i,t-1} \\
&+ \beta_{11} gdpgrowth_{i,t-1} + \beta_{12} \ln gdp_{i,t-1} + year_{i,t} + industry_{i,t} + \varepsilon_{i,t-1}
\end{aligned}
\tag{1}
$$

The dependent variable is each of the three investment efficiency measures based on Richardson (2006), Biddle et al. (2009), and Chen et al. (2011). Favour is a dummy variable that equals 1 if the firm is headquartered in a city that is either the birthplace of the incumbent provincial communist party secretary or the governor of the province to which the city belongs, or is where the provincial party secretary or the governor once served as municipal party secretary, municipal deputy party secretary, mayor, or deputy mayor; and equals 0 otherwise. We then include 6 sets of control variables: sources of funds for investments, firm fundamentals, extent of political connection, firm governance quality, city-level economic development, and year and industry fixed effects. OCF is the cash flows from operating activities scaled by total assets, which is our proxy for the available sources of funds for investments because these internally generated cash flows are the most sustainable and readily available sources of funds at the disposal of firm management. Firm fundamentals include size (the natural logarithm of total assets), leverage (lev: total debt over total assets), and profitability (roa: operating net income over total assets). We follow Fan, Wong, and Zhang (2007) to measure firm political

connection by a dummy variable, connect, that equals 1 if the chairman of the board or the CEO of a firm has been a government employee, or a member of the National People's Congress or the People's Political Consultative Conference, and equals 0 otherwise. We include political connection as a control variable to examine whether the politicians' regional favouritism is already captured by a firm's political connection or the regional favouritism represents different aspects of the interplay between politicians and firms. We next include 4 variables that proxy for the corporate governance quality. Admin is the amount of administrative expenses scaled by total assets. Following the argument in Ang, Cole, and Lin (2000), we use admin to proxy for the management's excessive perquisite consumption and other direct agency costs that result from the conflict of interests between managers and shareholders. Tunnel equals the amount of other receivables over total assets. Jiang, Lee, and Yue (2010) document that, for Chinese firms, the accounting item other receivables measures a brazen form of corporate abuse in which controlling shareholders expropriate minority shareholders. We therefore include tunnel to control for the agency costs resulting from the conflicts of interests between majority and minority shareholders. The board of directors is the most important internal governance mechanism. We include independent, the fraction of independent directors, and duality, a dummy variable that equals 1 if the CEO also chairs the board and 0 otherwise, to control for the effectiveness of the board. We then include the GDP growth rate (Gdpgrowth) and the level of GDP (lngdp: the natural logarithm of GDP) of the city where the firm is headquartered. They measure the degree of the economic development in a city, and may capture the impact of politicians' regional favouritism on a city in terms of the provision of public goods. Finally, we include year and industry fixed effects in all the regressions to control for the variation in investment efficiency over the sample period caused by omitted variables and to control for all the time-invariant factors specific to the firm's industry.

For each of the 3 investment efficiency measures, we run 3 regressions each using the absolute, the positive, or the negative value[2] as the dependent variable. The absolute value captures the overall deviation from the optimal level of investment, while the positive and negative values indicate overinvestment and underinvestment, respectively. Running 3 regressions allows us to examine the relation between firms' overall deviation from optimal investment and politicians' regional favouritism while allowing for a possible asymmetric relation between overinvestment, underinvestment, and regional favouritism and other firm- and city-level variables.

Table 3 presents the results from the 9 regressions. First, firms located in politically favoured cities have significantly less efficient investments than those located in the other cities (Regressions 1, 4, and 7). In addition, the overall deviation from the optimal level of investment results only from overinvestment (Regressions 2, 5, and 8) but not underinvestment (Regressions 3, 6, and 9). Put in another way, firms located in favoured cities invest less efficiently because they overinvest more. Second, using a threshold of at least two out of the three regressions using the three investment efficiency measures showing significant and consistent results, we find that the majority of our explanatory variables are significantly related to the investment efficiency (Regressions 1, 4, and 7), and that many of them demonstrate complex and asymmetric relations with overinvestment (Regressions 2, 5, and 8) versus underinvestment (Regressions 3, 6, and 9). Third, firms with more operating cash flows invest less efficiently. When firms overinvest, those with more operating cash flows tend to overinvest more, and when firms underinvest those with more operating cash flows also show more severe underinvestment. Fourth, the 3 firm fundamentals are all significantly related to investment efficiency. Larger firms have more efficient investment. When firms overinvest,

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[2] To facilitate exposition, we use the absolute value of the negative investment efficiency measures in the regressions.

larger firms overinvest less, and when firms underinvest, larger firms also exhibit less underinvestment. Higher leverage (profitability) is associated with significantly less (more) efficient investment. Moreover, leverage and profitability show asymmetric relation with over-versus under-investment. Neither are significantly related to overinvestment while both are significantly associated with underinvestment. In particular, higher leverage exacerbates underinvestment, which is consistent the well-documented debt overhang problem, while higher profitability alleviates underinvestment. Fifth, political connection is not significantly related to firm investment efficiency, which suggests that politicians' regional favouritism captures different aspects of the interaction between politics and firms from those measured by political connection. Sixth, two out of our four measures of corporate governance quality significantly affect investment efficiency. Firms showing heightened conflict of interest between managers and shareholders (proxied by admin) invest less efficiently. However, more independent boards actually reduce investment efficiency. This surprising finding may be explained by the fact that: for firms that overinvest, a more independent board is associated with more severe overinvestment, which suggests that the independent directors are unable to effectively control management's tendency to overinvest. On the other hand, for firms that underinvest, the independent directors are unable to persuade management to increase investment. Finally, firms located in cities with faster economic growth tend to invest less efficiently than those in cities with slower growth.

3.3. The progress of marketization and the relation between politicians' regional favouritism and firm investment efficiency

Results in Table 3 indicate that the favouritism by a province's top 2 officials toward a city under their governance and the firms therein significantly negatively impacts the investment efficiency of those firms. The negative impact results from the favoured firm having more severe overinvestment. In this subsection, we explore the factors that may affect the strength

of the relation between politicians' regional favouritism and corporate investment efficiency. We focus on the level of marketization, a broad index measuring the quality of a wide range of institutions.

Politicians' regional favouritism is a particular form of the interaction between politicians and cities/firms. Therefore, the overall extent to which politicians intervene various aspects of the market/economy should affect the impact of their regional favouritism on corporate investments. The Chinese market offers an ideal setting to test the above argument. Since the late 1970s/early 1980s, China has been in transition from a planned economy, in which the government determines every important aspect of the economy, to a market economy, in which the market forces play the most important role. This is essentially a process of reducing government interference. Different from the very rapid transition in Eastern European countries, the process in China is a much smoother one at a controlled pace. In addition, the transition process not only is time-varying, but also shows substantial variation in its progress across China's 30 strong provinces. Such time-series and cross-sectional variation in the overall extent to which the provincial politicians intervene their regional economy allows us to test whether and how such extent affects the impact of regional favouritism on corporate investment.

To measure the degree of marketization for each province (i.e., the extent to which provincial politicians intervene provincial economy), we reply on the marketization index developed by China's National Economic Research Institute (NERI).[3] Using published statistics and results from its survey of representative firms in different provinces, NERI assesses the degree of marketization on five dimensions: 1) the relationship between the government and the market (for example, the amount of time that firm management spends dealing with government officials, the role of government in resources allocation, etc.), 2) the relative importance of

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[3] Fore detailed information, please see Fan, Wang, and Zhu (2011), and Wang, Yu, and Fan (2016).

non-SOEs, 3) the extent to which the government regulates the prices of products and trade barriers/local protectionisms perceived by surveyed firms, 4) the development of the factor market (e.g., the relative importance of non-state financial institutions and foreign direct investment), and 5) the development of the market intermediaries and the legal framework for contract enforcement and property rights protection. Summarizing all these aspects into a weighted average, a marketization index that ranges from 0 to 10 is computed for every province, with higher values indicating stages closer to a market economy and with less government interference.

To test whether and how the degree of marketization in a province affects the relation between regional favouritism of the top 2 politicians in the province and investment efficiency of the firms located in favoured cities, we run the following pooled regressions for all the sample firms over the years of 2004 through 2014:

$$
\begin{aligned}
IE_{i,t} = {} & \alpha_0 + \beta_1 favour_{i,t-1} + \beta_2 marketization_{i,t-1} + \beta_3 favor_{i,t-1} * marketization_{i,t-1} \\
& + \beta_4 OCF_{i,t-1} + \beta_5 size_{i,t-1} + \beta_6 lev_{i,t-1} + + \beta_7 roa_{i,t-1} + \beta_8 connect_{i,t-1} + \beta_9 ad\min_{i,t-1} \\
& + \beta_{10} tunnel_{i,t-1} + \beta_{11} independent_{i,t-1} + \beta_{12} duality_{i,t-1} \\
& + \beta_{13} gdpgrowth_{i,t-1} + \beta_{14} \ln gdp_{i,t-1} + year_{i,t} + industry_{i,t} + \varepsilon_{i,t-1}
\end{aligned}
\tag{2}
$$

, where marketization$_{i,t-1}$ is a dummy variable that equals one if firm i is located in a province whose marketization index in year t-1 is above the median of the indices for all Chinese provinces in that year, and equals zero otherwise.

We run 9 regressions each using the absolute, the positive, or the negative value of each of the 3 investment efficiency measures and present the results in Table 4. Again, we assess the overall investment efficiency in Regressions 1, 4, and 7, overinvestment in Regressions 2, 5, and 8, and underinvestment in Regressions 3, 6, and 9. First, our main finding in Table 3 remains unchanged: firms located in favoured cities have significantly less efficient investment, and the deviation from optimal investment stems only from their more severe overinvestment. Second, the coefficient estimates for marketization is significantly negative in Regressions 1,

4, and 7, which indicates that less government interference (i.e., a higher degree of marketization) is associated with more efficient corporate investment. This beneficial role manifests itself by alleviating corporate underinvestment (Regressions 3, 6, and 9). Third, the significantly negative coefficient estimates for the interaction terms between favour and marketization in Regressions 1, 4, and 7 show that the negative impact of political favouritism on firms located in favoured cities is significantly less if the firms are located in provinces with a higher degree of marketization (less room for government to interfere). Moreover, the significantly negative coefficients for the interaction terms in Regressions 2, 5, and 8 indicate that the beneficial role of the higher degree of marketization kicks in by reducing the favoured firms' overinvestment. Finally, the results for the other variables remain qualitatively the same as those in Table 3.

3.4. Channels from politicians' regional favouritism to corporate investment efficiency

In this subsection, we investigate the mechanisms through which politicians' regional favouritism translates into less efficient corporate investment, in particular, overinvestment. Overinvestment occurs when a firm continues to invest after it has already invested in all its available positive-NPV projects. Consequently, ceteris paribus, the likelihood of overinvesting decreases with the number of positive-NPV projects available and increases with the amount of money at the disposal. There may be two scenarios for the top 2 provincial officials to induce corporate overinvestment. The first scenario is that the 2 officials reduce the number of positive-NPV projects available to their favourite firms. The second scenario is that they increase the amount of external financing available to their favoured firms. We posit that the second scenario is more likely. As the 2 highest-ranking officials in a province, they can use their enormous power and influence to help their favourite firms to obtain external financing more easily (for example, through providing government guarantee for loans or, more directly, instructing state-owned banks to lend money) and/or on better terms. They may even supply

their favourite firms "free" money through government subsidies. The more readily available, cheaper or even free external financing results in a higher likelihood of overinvesting.

To test the arguments above, we examine whether politicians' regional favouritism affects firms' access to external financing. We first investigate firms' access to debt financing by running the following pooled regressions for all the sample firms over the sample period of 2004-2014:

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\begin{aligned}
Loan_{i,t} = &\ \alpha_0 + \beta_1 favour_{i,t-1} + \beta_2 OCF_{i,t-1} + \beta_3 size_{i,t-1} + \beta_4 lev_{i,t-1} + + \beta_5 roa_{i,t-1} \\
&+ \beta_6 connect_{i,t-1} + \beta_7 Z - score_{i,t-1} + \beta_8 \tan gibility_{i,t-1} + \beta_9 Q_{i,t-1} \\
&+ \beta_{10} gdpgrowth_{i,t-1} + \beta_{11} \ln gdp_{i,t-1} + year_{i,t} + industry_{i,t} + \varepsilon_{i,t-1}
\end{aligned}
\tag{3}
$$

We run four regressions each examining a different measure of the amount of debt financing (all scaled by total assets): annual change in short-term debt (Sloan), annual change in long-term debt (Lloan), annual change in total debt (Loan), and annual net cash flow from borrowing (Netbankcf). We include as controls three new variables on which banks assess applicants for loans. Z-score, the index based on Altman (1968), measures firm bankruptcy risk. Higher Z-scores indicate lower risk. Tangibility is the ratio of fixed assets to total assets. Firms with higher asset tangibility are easier for banks to obtain collateral. Q is the ratio of the sum of the market value of equity and the book value of debt to total assets, and proxies for firm growth potential.

Panel A of Table 5 presents the regression results. First, favour is significantly positively associated with all the four measures of external debt financing, which indicates that favoured firms have access to significant more debt financing. In addition, the impact of the political favouritism is economically significant. The sample average annual change in short-term, long-term, and total debt, and net cash flow from borrowing is 1.42%, 1.13%, 2.59%, and 2.44% of total assets. The coefficient estimates for favour in the 4 regressions translate into an additional increase of about 21%, 35%, 31%, and 25%, respectively, from the 4 average debt financing

measures. Second, if we impose a threshold of having a consistent and significant coefficient estimate in at least 3 out of the 4 regressions, among the other explanatory variables, the following are significant. Larger firms with higher accounting profitability and firms located in provinces with faster economic growth have access to more debt financing, while, surprisingly, firms with more operating cash flows have access to less debt financing.[4] Finally, it is noteworthy that political connection is not significant in any of the 4 regressions. This finding again suggests that politicians' regional favouritism measures different aspects of the interaction between politics and firms than what political connection captures.

The results in Panel A of Table 5 is consistent with top provincial politicians helping their favourite firms obtain more external financing. However, such help is difficult to "observe". We therefore use a measure of directly observable politicians' help: government subsidies, over which the 2 highest-ranking provincial politicians have the final say. To test whether favoured firms receive more government subsidies, we run the following pooled regressions:

$$
\begin{aligned}
Subsidy_{i,t} = \alpha_0 &+ \beta_1 favour_{i,t-1} + \beta_2 size_{i,t-1} + \beta_3 lev_{i,t-1} + +\beta_4 connect_{i,t-1} \\
&+ \beta_5 growth_{i,t-1} + \beta_6 burden_{i,t-1} + \beta_7 loss_{i,t-1} + \beta_8 shareholder5_{i,t-1} + \beta_9 HHI_{i,t-1} \\
&+ \beta_{10} gdpgrowth_{i,t-1} + \beta_{11} \ln gdp_{i,t-1} + \beta_{12} fiscal_{i,t-1} + year_{i,t} + industry_{i,t} + \varepsilon_{i,t-1}
\end{aligned}
\tag{4}
$$

The dependent variable is the amount of government subsidy scaled by total assets. We also run a second regression in which the dependent variable is an adjusted subsidy (the ratio of subsidy to total assets minus the industry median ratio in that year). We include as additional controls several new variables that Chinese government tends to take into account when deciding subsidies. Burden is a measure of firms' burden of overstaffing. Traditionally, many SOEs have to employ more workers than really needed to help the government to maintain social stability. Following Guo and Du (2011), we first regress the number of employees per

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[4] The negative relation between operating cash flows and debt financing may be explained by the pecking-order hypothesis.

million yuan of total assets on firm size, tangibility, and revenue growth, and use the residuals from the regression as the measure of employment burden. Loss is a dummy variable that equals 1 if the net income is negative in that year and zero otherwise. Shareholder5 is the Herfindahl index of the 5 largest shareholders' percentage ownership, which measures ownership concentration among the largest shareholders. HHI is the Herfindahl index of a firm's segment sales based on the fraction of the firm's sales in each industry that the firm operates in, which measures firms' degree of industry diversification. Fiscal is the ratio of fiscal revenue to GDP for the city in which a firm is headquartered.

Panel B of Table 5 shows the regression results. First, favoured firms receive significantly more subsidies from the government, lending strong support to the argument that politicians hand out more free money to their favoured firms. Second, Smaller firms and firms with lower leverage receive more subsidy. The significantly positive (negative) coefficient estimate for burden (loss) suggests that politicians reward firms that help reduce unemployment while try to avoid subsidizing loss-making firms. Firms with more diverse ownership among the largest shareholders receive more subsidy, which could be because the more even percentage ownership structure encourages more of the large shareholders to lobby for subsidy because they have more at stake. Finally, a firm located in a city whose fiscal revenue accounts for a higher percentage of its GDP receives more subsidy.

3.5 Market reaction to the commencement and the cessation of politicians' regional favouritism

In this subsection, we examine through an event study how the market reacts to the commencement and the cessation of politicians' regional favouritism. During our sample period, the top two politicians, the party secretary and the governor, for a province may change. Such changes may establish a new favouritism relation between the new secretary or governor and firms located in a city under their rule, or sever an existing favouritism relation between

the outgoing secretary or governor and their favoured firms. We identify such "take office" and "leave office" events that result in the commencement of a new or the termination of an existing favouritism relation for our sample firms. We ensure that the events that do not lead to a change in such relation are not included: for example, the incoming (outgoing) secretary/governor favours a firm, but his/her predecessor (successor) also favours that firm; the presiding governor that favours a firm is promoted to be the party secretary of the same province.

To identify the "take office" and "leave office" events that result in changes in favouritism, we search various news media using the names of the party secretaries and governors in our sample combined with keywords such as "is appointed", "takes office", and "leaves office". We reply on the news website of Xinhua News Agency, the official news agency of the Chinese central government, and crosscheck the announcement dates for such events with other media. We ensure that the dates from Xinhua News Agency are the same as the dates from at least two other news media. We are able to identify 23 "take office" events that initiate political favouritism for 341 sample firms and 31 "leave office" events that server such relation for 566 sample firms.

For each of the two types of events, we examine the cumulative abnormal returns for the event firms over three windows centered on the announcement dates. Results are presented in Table 6. For the "take office" events, the average cumulative abnormal returns over all the three windows of 1, 3, and 5 days surrounding the announcement dates are significantly negative, which indicates that the market expects the establishment of the favouritism relation between the incoming secretary/governor and the sample firms to bring an overall negative impact on the firms. For the "leave office" events, the average cumulative abnormal returns over all the event windows are significantly positive, suggesting that the market believes that severing the favouritism tie is beneficial for the favoured firms. The results from the event

study are consistent with our finding in Tables 2 and 3 that politicians' regional favouritism is associated with significantly less efficient investment for favoured firms.

3.6 Robustness checks

3.6.1 Factors intrinsic to a favoured city versus politicians' favouritism toward the city

We have shown that firms headquartered in a city that is favoured by the top 2 presiding provincial politicians have significantly less efficient investments. Many factors/features define a city. Whether it is favoured by the top 2 politician or not is just one characteristic of the city. Therefore, it is possible that the negative impact of political favouritism toward a city on the investment efficiency of firms located in that city is caused by factors/features other than the city's political favouritism tie.

While it is impossible to examine each of these other city features individually, we posit that, if any factor/feature intrinsic to the city other than its political favouritism status causes firms located in the city to invest less efficiently, the negative impact on the investment efficiency must still remain before and after it is favoured by the politicians, at least for the years immediately before or after. To test the impact of all the city features other than its political favouritism status, we run the following pooled regressions for all the sample firms over the sample period:

$$IE_{i,t} = \alpha_0 + \beta_1 favour_{i,t-1} + \beta_2 Before_{i,t-1} + \beta_3 After_{i,t-1} + \beta_4 OCF_{i,t-1} + \beta_5 size_{i,t-1} + \beta_6 lev_{i,t-1} \quad (5)$$
$$+ \beta_7 roa_{i,t-1} + \beta_8 connect_{i,t-1} + \beta_9 ad\min_{i,t-1} + \beta_{10} tunnel_{i,t-1} + \beta_{11} independent_{i,t-1}$$
$$+ \beta_{12} duality_{i,t-1} + \beta_{13} gdpgrowth_{i,t-1} + \beta_{14} \ln gdp_{i,t-1} + year_{i,t} + industry_{i,t} + \varepsilon_{i,t-1}$$

, where $before_{i,t}$ ($after_{i,t}$) is a dummy variable that equals one if year t is the year immediately prior to (following) a year when firm i's city is favoured by a top 2 presiding provincial politician, and equals zero otherwise.

If any city characteristic other than its political favouritism status causes its firms to invest less efficiently, the coefficient estimates for both the before and the after dummies should be significantly positive. Table 7 presents the regression results. First, the coefficient estimate for the before dummy is only significant in 2 out of the 9 regressions, and that for the after dummy is only significant in 1 out of the 9 regressions. Second, the coefficient estimate for the favour dummy are significantly positive for all the regressions using the absolute deviation from optimal investment and using the degree of overinvestment as the dependent variables. That is, results on the favour dummy remain unchanged. Third, the results on the other explanatory variables also stay qualitatively the same. Put together, the results in Table 7 indicate that it is the political favouritism status of a city, not any other factors/features of the city, that drives the inefficient investments of the firms located in the city.

3.6.2 An alternative way to assess investment efficiency

Our three measures of investment efficiency are based on widely used models from Richardson (2006), Biddle et al. (2009), and Chen et al. (2011). In this subsection, we rely on an alternative, model-free way to compare the investment efficiency between favoured and unfavoured firms.

Many studies have found that corporate investment is significantly positively related to a firm's Q ratio, and have used the strength of this relation as a measure of investment efficiency. We therefore run the following pooled regressions using annual data for all the sample firms over the sample period:

$$
\begin{aligned}
Investment_{i,t} = {} & \alpha_0 + \beta_1 favour_{i,t-1} + \beta_2 Q_{i,t-1} + \beta_3 favour_{i,t-1} \times Q_{i,t-1} + \beta_4 OCF_{i,t-1} \\
& + \beta_5 size_{i,t-1} + \beta_6 lev_{i,t-1} + \beta_7 connect_{i,t-1} + \beta_8 age_{i,t-1} + \beta_9 gdpgrowth_{i,t-1} \\
& + \beta_{10} \ln gdp_{i,t-1} + year_{i,t} + industry_{i,t} + \varepsilon_{i,t-1}
\end{aligned}
\tag{6}
$$

The dependent variable is the annual amount of investment scaled by total assets. The interaction between the dummy variable favour and the Q ratio captures the difference in the

sensitivity of investment to Q between favoured and unfavoured firms. In addition to year and industry fixed effects, we control for relevant firm characteristics including operating cash flows, size, leverage, political connection, and age (the number of years during which a firm has been publicly listed), and regional GDP growth rate, and the size of the city economy (the natural logarithm of the city's GDP).

We run the regression twice: first without the interaction term and then including it. The results are reported in Table 8. First, the favour dummy is significantly positively related to firm investment. Given a sample average investment of 0.0412 (that is, 4.12% of total assets), the coefficient estimates of 0.008 to 0.017 translate into an additional 19% to 41% investment for favoured firms. This indicates that favoured firms invest significantly more than unfavoured firms, which is consistent with finding in Table 3 that favoured firms invest less efficiently and their lower efficiency stems mainly from more severe overinvestment. Second, Q is significantly positively associated with investment, consistent with previous studies. Third, the coefficient estimate for the interaction term is significantly negative, which shows that the investment for favoured firms is significantly less sensitive to their Q ratios than that for unfavoured firms. Moreover, the difference in sensitivity is substantial. In Regression 2, the coefficient estimates for Q and the interaction term are 0.013 and -0.006, respectively. This indicates that the investment for favoured firms is about half as sensitive to the Q ratio as that for unfavoured firms. The above findings corroborate our previous results using the three investment efficiency measures based on Richardson (2006), Biddle et al. (2009), and Chen et al. (2011). Finally, regarding other explanatory variables, firms with more operating cash flows, of larger size, and with lower leverage invest more. Older firms invest less, consistent with maturer firms having fewer growth opportunities. In addition, firms located in a province with a faster-growing economy or in a city with a smaller economy tend to invest more.

3.6.3 Central SOEs versus the other firms: which firms are favoured?

Based on their ultimate controlling shareholders, our sample firms can be divided into two groups: centrally administered SOEs and the other firms (that is, local firms including local-SOEs and non-SOEs). Central SOEs are the largest, strategically most important SOEs. They are administered by the State Council (the central government), the State-Owned Assets Supervision and Administration Commission of the State Council (SASAC), or other central government ministries (for example, Ministry of Finance). The top executives of the central SOEs are appointed by the central government, and many of them have political rankings close to the rankings of the provincial party secretaries and governors in the political hierarchy. Therefore, the top 2 presiding provincial politicians should not be able to exert significant direct interference in the operations of the central SOEs headquartered in a city under their rule, while they are able to do so for local firms.

In this subsection, we take advantage of the difference in the reach of the top 2 provincial politicians' influence between the central SOEs and the local firms to further support our previous identification of the channel between political favouritism and overinvestment by ruling out some possible alternative channels.

An alternative channel is that the politicians do not directly provide preferential treatment to the firms located in their favoured cities (i.e., the favoured firms), but instead do so to their favoured cities. For example, they can build more railways and airports, and provide better-quality education to the workforce in their favoured cities. Such preferential treatment creates a positive externality to the firms located in the favoured cities, resulting in the favoured firms having more cash flows (from the saving in transport costs, the efficiency gain from more skilled employees, etc.). The extra cash flows gained from the positive externality cause the favoured firms to overinvest.

If the above is the channel between political favouritism and corporate overinvestment, we should expect both the central SOEs and the local firms located in favoured cities to have more severe overinvestment than the central SOEs and local firms located in unfavoured cities. That is, all firms in favoured cities are affected by the political favouritism. On the other hand, if the central SOEs in favoured cities do not overinvest more than the central SOEs in unfavoured cities, and the local firms in favoured cities still overinvest more than the local firms in unfavoured cities, the above channel is not the mechanism linking political favouritism and overinvestment. In addition, such finding would suggest that it is the top 2 provincial politicians' direct dealings with their favoured firms that link the politicians' regional favouritism and corporate overinvestment together.

To test the above arguments, we split our sample into central SOEs and local firms, and run the regressions specified in Equation (1) separately for these two groups. Panels A and B of Table 9 present the regression results for central SOEs and local firms, respectively. The coefficient estimates for the favour dummy, our focus, are significant in only 2 out of the 9 regressions for central SOEs in Panel A, while, for the local firms in Panel B, they are significantly positive in all the regressions using the absolute value of deviations from the optimal investment and the overinvestment as dependent variables (the same results as those in Table 3). The results indicate that the investment efficiency for central SOEs in favoured cities is not significantly different from that for central SOEs in unfavoured cities, while local firms located in favoured cities have significantly less efficient investment and more severe overinvestment than local firms located in unfavoured cities. These findings suggest that the impact of politicians' regional favouritism on firm investment is not through an indirect channel (for example, the politicians take actions that benefit their favoured cities) but though a direct channel (for example, politicians help their favoured firms to obtain more external financing and provide more government subsidies to their favoured firms). We acknowledge

that there may be more such channels than those identified in our Section 3.4, and future research may uncover such channels.

4. Concluding remarks

Using hand-collected data on the birthplaces and working experiences of the two highest-ranking provincial politicians in China's 30-strong provinces, we identify the cities under their rule that are either their birthplaces or which they once governed as one of the highest-ranking municipal politicians (municipal party secretary, deputy municipal party secretary, mayor, or deputy mayor) as their favoured cities. We examine the impact of the politicians' regional favouritism on the investment efficiency of firms located in their favoured cities. We find that such favouritism is associated with significantly less efficient corporate investment. The deviation from the optimal investment mainly stems from more severe overinvestment. Taking advantage of the time-varying degree of marketization across the diverse cross-section of 30-strong provinces, we explore how the impact of politicians' regional favouritism on corporate investment efficiency varies with the region's progress in marketization. We find that a higher degree of marketization reduces the strength of the relation between political favouritism and corporate investment efficiency. We further identify a possible channel through which favouritism leads to overinvestment: the politicians help their favoured firms to obtain external debt financing more easily and hand out more subsidies to their favoured firms. The readily available or even "free" finance for favoured firms results in a higher likelihood for them to overinvest more. We use an event study to examine the market reaction to the commencement and the cessation of political favouritism. We find that the market reacts negatively when a new political favouritism relation starts while it reacts positively when an existing political favouritism relation ends. We also conduct a battery of robustness tests and their results are consistent with our main findings.

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Appendix 1. Variable definitions

Variable	Definition
IE_R	Investment efficiency measure 1: the residual of the investment model in Richardson (2006)
IE_B	Investment efficiency measure 2: the residual of the investment model in Biddle, Hilary, and Verdi (2009)
IE_C	Investment efficiency measure 3: the residual of the investment model in Chen, Hope, Li, and Wang (2011)
Favour	A dummy variable that equals 1 if the city where a firm's headquarter is located is the birthplace of the incumbent provincial party secretary or the governor of the province to which the city belongs, or if the city where a firm's headquarter is located is where the provincial party secretary or the governor once served as municipal party secretary, municipal deputy party secretary, mayor, or deputy mayor; and equals 0 otherwise.
Size	The natural logarithm of the total assets of a firm
Age	The number of years during which a firm has been publicly listed
Investment	Investment in property, plant, and equipment
Leverage	The ratio of total liabilities to total assets
Zscore	The Z-score based on Altman (1968)
Tangibility	The ratio of fixed assets to total assets
Growth	The annual growth rate of total revenues
Q	The ratio of the sum of the market value of equity and the book value of debt to total assets
OCF	The ratio of net cash flow from operating activities to total assets
FCF	The ratio of free cash flow to total assets
ROA	The ratio of operating income to total assets
Loss	A dummy variable that equals 1 if a firm's net income is negative and zero otherwise
HHI	The Herfindahl index of a firm's segment sales based on the fraction of the firm's sales in each industry that the firm operates in
Burden	Employment burden measured as the residual of the employment model based on Guo and Du (2011)
Connect	A dummy variable that equals 1 if the chairperson of the board or the CEO of a firm has been a government employee, or a member of the National People's Congress or the People's Political Consultative Conference, and equals 0 otherwise.
Tunnel	The ratio of other receivables to total assets
Admin	The ratio of administrative expenses to total assets
Independent	The fraction of independent directors on the board
Duality	A dummy variable that equals 1 if the chairman of the board is also the CEO and equals 0 otherwise
SOE	A dummy variable that equals 1 if the firm is an SOE and equals 0 otherwise
Shareholder5	The Herfindahl index of ownership concentration among the 5 largest shareholders
Sloan	The ratio of the annual change in short-term debt to total assets
Lloan	The ratio of the annual change in long-term debt to total assets
Loan	The ratio of the annual change in total debt to total assets

Netbankcf	The ratio of the net cash inflow from the banks to total assets
Subsidy_a	The ratio of government subsidy to total assets
AdjSubsidy_a	The ratio of government subsidy to total assets adjusted by industry-year median ratio
Gdpgrowth	The GDP growth rate of the province where a firm's headquarter is located
Lngdp	The natural logarithm of the real GDP of the city where a firm's headquarter is located
Fiscal	The ratio of the fiscal revenue to the GDP for the city where a firm's headquarter is located
Marketization	A dummy variable that equals 1 if the marketization score of the province where a firm's headquarter is located is above the median score, and equals 0 otherwise

Table 1. Sample distribution

Year	Favoured Firms	Total Firms	Favoured%	Favoured Cities	Total Cities	Favoured%
2003	273	1139	23.97%	24	213	11.27%
2004	284	1199	23.69%	25	220	11.36%
2005	289	1295	22.32%	24	227	10.57%
2006	289	1272	22.72%	24	225	10.67%
2007	280	1337	20.94%	23	229	10.04%
2008	347	1458	23.80%	24	236	10.17%
2009	376	1519	24.75%	25	237	10.55%
2010	405	1674	24.19%	27	239	11.30%
2011	354	2040	17.35%	21	253	8.30%
2012	295	2260	13.05%	19	253	7.51%
2013	278	2380	11.68%	17	254	6.69%
Total	3470	17573	19.75%	253	2586	9.78%

This table shows the number of favoured firms in the sample, the total number of sample firms, the number of favoured cities, and the total number of sample cities by year over the period of 2003 to 2013.

Table 2. Sample statistics and univariate tests

Variable	Observations	Mean	Median	Stdev	5th percentile	95th percentile	Mean of favoured firms	Mean of unfavoured firms	P-value (favoured= unfavoured)
|IE_R|	17134	0.064	0.045	0.065	0.004	0.191	0.067***	0.063	0.003
|IE_B|	17200	0.071	0.048	0.079	0.004	0.216	0.074***	0.069	0.002
|IE_C|	17200	0.070	0.047	0.077	0.004	0.211	0.074***	0.069	0.002
Size	17238	21.610	21.470	1.217	19.900	23.900	21.530***	21.626	0.000
Leverage	17238	0.493	0.493	0.243	0.117	0.831	0.519***	0.487	0.000
ROA	17238	0.034	0.035	0.076	-0.091	0.143	0.031**	0.034	0.019
OCF	17238	0.045	0.045	0.081	-0.089	0.179	0.046	0.045	0.537
Connect	16841	0.271	0.000	0.444	0.000	1.000	0.265	0.272	0.377
Admin	17213	0.111	0.075	0.157	0.019	0.291	0.116*	0.110	0.081
Tunnel	17238	0.034	0.012	0.065	0.001	0.141	0.040***	0.032	0.000
Independent	17099	0.361	0.333	0.055	0.333	0.444	0.357***	0.362	0.000
Duality	17240	0.178	0.000	0.383	0.000	1.000	0.148***	0.186	0.000
Gdpgrowth	17240	0.154	0.156	0.052	0.073	0.235	0.163***	0.152	0.000
Lngdp	16965	7.186	7.252	1.095	5.360	8.846	7.237***	7.173	0.000

This table presents the statistics for our sample firms over the sample period. |IE_R|, |IE_B|, and |IE_C| are the absolute value of the investment efficiency measures based on Richardson (2006), Biddle, Hilary, and Verdi (2009), and Chen, Hope, Li, and Wang (2011), respectively. Larger value of these measures indicates larger deviation from optimal investment, i.e., less efficient investment. All the other variables are as defined in Appendix 1. P-value is for the t-test of the null hypothesis that the mean value of the variable for favoured firms equals that for unfavoured firms. One, two, and three asterisks indicate (in the column for favoured firms) significance at the 10%, 5%, and 1% levels, respectively.

Table 3. Political favouritism and investment efficiency

Explanatory Variable	|IE_R| (1)	IE_R>0 (2)	IE_R<0 (3)	|IE_B| (4)	IE_B>0 (5)	IE_B<0 (6)	|IE_C| (7)	IE_C>0 (8)	IE_C<0 (9)
Intercept	0.118	0.157	0.125	0.210	0.265	0.139	0.193	0.263	0.164
	(8.53)***	(6.25)***	(9.60)***	(13.03)***	(7.73)***	(11.94)***	(12.00)***	(7.24)***	(11.86)***
Favour	0.003	0.007	0.000	0.004	0.008	-0.001	0.003	0.008	0.000
	(2.39)**	(2.69)***	(0.05)	(1.99)**	(2.19)**	(-0.54)	(1.98)**	(2.08)**	(0.25)
OCF	0.035	0.032	0.038	0.054	0.082	0.032	0.051	0.075	0.032
	(5.16)***	(2.45)**	(5.86)***	(5.91)***	(4.11)***	(4.81)***	(5.56)***	(3.53)***	(4.63)***
Size	-0.003	-0.004	-0.003	-0.007	-0.009	-0.005	-0.006	-0.010	-0.004
	(-5.95)***	(-3.54)***	(-5.31)***	(-9.77)***	(-5.70)***	(-9.08)***	(-8.88)***	(-6.11)***	(-7.22)***
Leverage	-0.001	-0.003	-0.001	0.016	0.005	0.015	0.012	0.020	0.011
	(-0.31)	(-0.55)	(-0.38)	(3.76)***	(0.50)	(4.74)***	(2.75)***	(1.82)*	(3.29)***
ROA	-0.015	0.033	-0.051	-0.071	0.044	-0.137	-0.055	0.011	-0.114
	(-1.59)	(1.70)*	(-5.35)***	(-5.06)***	(1.40)	(-13.24)***	(-4.03)***	(0.33)	(-11.41)***
Connect	0.001	0.001	0.000	0.002	0.002	-0.002	0.000	0.003	-0.002
	(1.04)	(0.54)	(0.38)	(1.17)	(0.99)	(-1.44)	(0.41)	(1.28)	(-2.16)**
Admin	0.015	0.011	0.019	0.017	0.041	0.005	0.011	0.020	0.004
	(3.29)***	(1.20)	(4.14)***	(2.46)**	(2.91)***	(0.97)	(1.72)*	(1.35)	(0.75)
Tunnel	-0.009	-0.000	-0.012	-0.018	-0.079	0.008	-0.019	-0.062	0.011
	(-0.79)	(-0.01)	(-1.14)	(-1.21)	(-2.62)***	(0.73)	(-1.31)	(-1.58)	(0.89)
Independent	0.024	0.032	0.018	0.027	0.031	0.022	0.026	0.039	0.016
	(2.74)***	(1.86)*	(2.12)**	(2.66)***	(1.55)	(2.29)**	(2.58)**	(1.76)*	(1.73)*
Duality	0.000	0.001	-0.001	0.000	0.004	-0.003	0.001	0.001	-0.002
	(0.23)	(0.48)	(-0.77)	(0.10)	(1.33)	(-2.62)***	(0.44)	(0.26)	(-1.38)
Gdpgrowth	0.017	0.017	0.011	0.046	0.066	0.026	0.049	0.072	0.026
	(0.93)	(0.51)	(0.63)	(1.97)**	(1.61)	(1.28)	(2.19)**	(1.63)	(1.36)
Lngdp	-0.001	-0.002	0.000	-0.001	-0.002	-0.000	-0.001	-0.001	-0.000
	(-1.35)	(-1.93)*	(0.66)	(-1.90)*	(-1.65)	(-0.85)	(-1.37)	(-0.80)	(-0.58)
No. of Observations	16,306	6,697	9,609	16,373	6,771	10,261	16,373	6,162	10,211
Adjusted R-squared	0.064	0.049	0.117	0.081	0.062	0.193	0.074	0.053	0.166

Table 4. Marketization, political favouritism, and investment efficiency

Explanatory Variable	|IE_R| (1)	IE_R>0 (2)	IE_R<0 (3)	|IE_B| (4)	IE_B>0 (5)	IE_B<0 (6)	|IE_C| (7)	IE_C>0 (8)	IE_C<0 (9)
Intercept	0.109	0.135	0.088	0.189	0.298	0.138	0.173	0.257	0.128
	(7.88)***	(5.02)***	(6.90)***	(11.34)***	(7.57)***	(11.86)***	(10.45)***	(6.85)***	(9.77)***
Favour	0.008	0.023	-0.002	0.014	0.034	0.002	0.014	0.025	0.005
	(2.82)***	(3.60)***	(-0.78)	(3.26)***	(3.32)***	(0.63)	(3.27)***	(2.79)***	(1.61)
Marketization	-0.003	-0.003	-0.003	-0.003	-0.004	-0.004	-0.003	-0.004	-0.004
	(-1.66)*	(-0.96)	(-1.88)*	(-1.71)*	(-0.80)	(-2.52)**	(-1.78)*	(-0.92)	(-2.36)**
Favour*Marketization	-0.007	-0.020	0.003	-0.013	-0.031	-0.003	-0.013	-0.023	-0.006
	(-2.13)**	(-2.99)***	(0.98)	(-2.87)***	(-2.88)***	(-0.93)	(-2.95)***	(-2.37)**	(-1.70)*
OCF	0.035	0.030	0.038	0.055	0.082	0.033	0.051	0.076	0.030
	(4.90)***	(2.26)**	(5.59)***	(5.86)***	(3.66)***	(4.71)***	(5.35)***	(3.51)***	(4.31)***
Size	-0.003	-0.004	-0.003	-0.007	-0.012	-0.005	-0.006	-0.010	-0.004
	(-5.76)***	(-3.47)***	(-4.98)***	(-9.54)***	(-6.44)***	(-9.02)***	(-8.74)***	(-6.00)***	(-7.34)***
Leverage	-0.001	-0.003	-0.002	0.017	0.028	0.016	0.012	0.021	0.011
	(-0.35)	(-0.53)	(-0.53)	(3.82)***	(2.18)**	(4.76)***	(2.82)***	(1.88)*	(3.33)***
ROA	-0.014	0.038	-0.052	-0.069	0.002	-0.136	-0.052	0.014	-0.112
	(-1.40)	(1.93)*	(-5.30)***	(-4.74)***	(0.06)	(-12.71)***	(-3.72)***	(0.42)	(-10.88)***
Connect	0.002	0.002	0.000	0.002	0.005	-0.001	0.001	0.003	-0.002
	(1.40)	(0.96)	(0.43)	(1.38)	(1.71)*	(-1.15)	(0.62)	(1.32)	(-1.84)*
Admin	0.015	0.012	0.018	0.017	0.045	0.005	0.011	0.021	0.003
	(3.17)***	(1.21)	(3.94)***	(2.40)**	(2.24)**	(0.85)	(1.66)*	(1.38)	(0.61)
Tunnel	-0.011	-0.005	-0.011	-0.022	-0.067	0.007	-0.023	-0.071	0.010
	(-1.02)	(-0.22)	(-1.04)	(-1.49)	(-1.53)	(0.63)	(-1.59)	(-1.81)*	(0.80)
Independent	0.026	0.037	0.017	0.029	0.034	0.022	0.026	0.045	0.014
	(2.83)***	(2.07)**	(2.01)**	(2.71)***	(1.44)	(2.20)**	(2.54)**	(1.95)*	(1.53)
Duality	0.001	0.002	-0.000	0.001	0.003	-0.003	0.001	0.002	-0.001
	(0.64)	(0.65)	(-0.30)	(0.51)	(0.86)	(-2.24)**	(0.98)	(0.60)	(-0.84)
Gdpgrowth	0.015	0.007	0.013	0.042	0.053	0.027	0.043	0.046	0.031
	(0.76)	(0.22)	(0.70)	(1.71)*	(1.17)	(1.27)	(1.82)*	(1.03)	(1.59)
Lngdp	-0.000	-0.001	0.001	-0.001	-0.001	0.000	-0.000	0.000	0.000
	(-0.53)	(-0.99)	(0.89)	(-0.77)	(-0.55)	(0.01)	(-0.22)	(0.19)	(0.15)
No. of Observations	15,690	6,480	9,210	15,756	5,958	9,798	15,756	5,984	9,772
Adjusted R-squared	0.064	0.051	0.117	0.081	0.068	0.193	0.074	0.056	0.166

Table 5. Political favouritism and access to finance

Panel A. Access to debt financing

Explanatory Variable	Sloan	Lloan	Loan	Netbankcf
Intercept	0.019	-0.026	-0.000	-0.030
	(1.14)	(-1.67)*	(-0.01)	(-1.34)
Favour	0.003	0.004	0.008	0.006
	(1.96)*	(2.66)***	(2.87)***	(2.65)***
OCF	-0.065	-0.040	-0.101	-0.129
	(-5.93)***	(-4.44)***	(-6.36)***	(-9.94)***
Size	0.001	0.002	0.002	0.002
	(0.85)	(2.47)**	(1.86)*	(2.06)**
Leverage	-0.017	0.005	-0.011	0.008
	(-3.79)***	(1.57)	(-1.67)*	(1.56)
ROA	0.154	0.060	0.215	0.210
	(10.38)***	(5.99)***	(10.36)***	(12.15)***
Connect	0.001	0.002	0.002	0.002
	(0.62)	(1.47)	(1.13)	(1.24)
Zscore	0.008	-0.002	0.007	0.001
	(4.45)***	(-2.05)**	(2.82)***	(0.33)
Tangibility	0.001	-0.007	-0.006	-0.016
	(0.27)	(-1.67)*	(-0.90)	(-2.88)***
Q	0.000	0.003	0.003	0.000
	(0.26)	(4.11)***	(2.21)**	(0.18)
Gdpgrowth	0.077	0.015	0.085	0.118
	(3.34)***	(0.81)	(2.59)***	(4.07)***
Lngdp	-0.001	-0.001	-0.002	-0.001
	(-1.43)	(-1.68)*	(-2.14)**	(-1.36)
No. of Observations	15,949	15,855	15,855	15,769
Adjusted R-squared	0.037	0.034	0.034	0.045

Panel B. Government subsidies

Explanatory Variable	Subsidy_a	AdjSubsidy_a
Intercept	0.007	0.005
	(5.47)***	(3.94)***
Favour	0.000	0.000
	(2.16)**	(2.43)**
Size	-0.000	-0.000
	(-2.25)**	(-1.93)*
Leverage	-0.002	-0.001
	(-6.76)***	(-5.91)***
Connect	0.000	-0.000
	(0.21)	(-0.23)
Growth	-0.000	-0.000
	(-0.95)	(-0.85)
Burden	219.114	213.765
	(3.63)***	(3.65)***
Loss	-0.000	-0.000
	(-1.84)*	(-1.77)*
Shareholder5	-0.001	-0.001
	(-2.16)**	(-1.67)*
HHI	-0.002	0.002
	(-0.69)	(0.93)
Gdpgrowth	0.001	0.001
	(0.44)	(0.59)
Lngdp	-0.000	-0.000
	(-1.08)	(-1.40)
Fiscal	0.005	0.005
	(2.51)**	(2.86)***
No. of Observations	16,549	16,549
Adjusted R-squared	0.126	0.020

Table 6. Market reaction to the commencement and the cessation of political favouritism

Take office events	Mean	P-value	Leave office events	Mean	P-value
CAR(-1,+1)	-0.0028**	0.04	CAR(-1,+1)	0.0021**	0.02
CAR(-3,+3)	-0.0021*	0.09	CAR(-3,+3)	0.0044***	0.00
CAR(-5,+5)	-0.0076***	0.00	CAR(-5,+5)	0.0053***	0.00

Table 7. Robustness test 1: The years immediately prior to or following the political favouritism

Explanatory Variable	|IE_R| (1)	IE_R>0 (2)	IE_R<0 (3)	|IE_B| (4)	IE_B>0 (5)	IE_B<0 (6)	|IE_C| (7)	IE_C>0 (8)	IE_C<0 (9)
Intercept	0.118	0.155	0.125	0.210	0.265	0.139	0.192	0.264	0.164
	(8.49)***	(6.19)***	(9.58)***	(13.02)***	(7.72)***	(11.96)***	(11.99)***	(7.23)***	(11.85)***
Favour	0.003	0.008	0.000	0.004	0.008	-0.001	0.004	0.008	0.000
	(2.64)***	(2.80)***	(0.31)	(2.05)**	(2.18)**	(-0.52)	(2.05)**	(2.11)**	(0.35)
Before	0.012	0.019	0.004	0.005	0.006	-0.003	0.005	-0.001	0.006
	(2.55)**	(1.90)*	(0.93)	(0.81)	(0.44)	(-0.61)	(0.87)	(-0.09)	(0.99)
After	0.004	-0.001	0.006	0.001	-0.004	0.002	0.001	0.003	0.001
	(1.14)	(-0.21)	(2.25)**	(0.18)	(-0.58)	(0.69)	(0.36)	(0.37)	(0.43)
OCF	0.035	0.031	0.037	0.054	0.082	0.032	0.050	0.075	0.032
	(5.12)***	(2.42)**	(5.85)***	(5.90)***	(4.10)***	(4.82)***	(5.55)***	(3.53)***	(4.61)***
Size	-0.003	-0.004	-0.003	-0.007	-0.009	-0.005	-0.006	-0.010	-0.004
	(-5.93)***	(-3.50)***	(-5.31)***	(-9.76)***	(-5.69)***	(-9.08)***	(-8.88)***	(-6.10)***	(-7.22)***
Leverage	-0.001	-0.003	-0.001	0.016	0.005	0.015	0.012	0.020	0.011
	(-0.32)	(-0.56)	(-0.41)	(3.76)***	(0.51)	(4.73)***	(2.75)***	(1.81)*	(3.29)***
ROA	-0.015	0.033	-0.051	-0.071	0.044	-0.137	-0.055	0.011	-0.114
	(-1.60)	(1.69)*	(-5.35)***	(-5.06)***	(1.40)	(-13.23)***	(-4.03)***	(0.33)	(-11.41)***
Connect	0.001	0.001	0.000	0.001	0.002	-0.002	0.000	0.003	-0.002
	(1.04)	(0.51)	(0.40)	(1.17)	(0.99)	(-1.45)	(0.41)	(1.27)	(-2.15)**
Admin	0.015	0.011	0.019	0.017	0.041	0.005	0.011	0.020	0.004
	(3.29)***	(1.19)	(4.17)***	(2.46)**	(2.91)***	(0.97)	(1.72)*	(1.35)	(0.75)
Tunnel	-0.009	-0.001	-0.013	-0.018	-0.079	0.008	-0.020	-0.062	0.011
	(-0.85)	(-0.07)	(-1.19)	(-1.23)	(-2.65)***	(0.74)	(-1.33)	(-1.58)	(0.88)
Independent	0.024	0.032	0.018	0.027	0.031	0.022	0.026	0.039	0.016
	(2.76)***	(1.88)*	(2.14)**	(2.67)***	(1.55)	(2.28)**	(2.59)***	(1.77)*	(1.73)*
Duality	0.000	0.001	-0.001	0.000	0.004	-0.003	0.001	0.001	-0.002
	(0.22)	(0.46)	(-0.76)	(0.09)	(1.31)	(-2.61)***	(0.43)	(0.28)	(-1.40)
Gdpgrowth	0.016	0.018	0.010	0.046	0.067	0.026	0.048	0.071	0.026
	(0.86)	(0.53)	(0.55)	(1.95)*	(1.63)	(1.27)	(2.16)**	(1.61)	(1.31)
Lngdp	-0.001	-0.002	0.000	-0.001	-0.002	-0.000	-0.001	-0.001	-0.000
	(-1.28)	(-1.89)*	(0.70)	(-1.88)*	(-1.64)	(-0.86)	(-1.35)	(-0.80)	(-0.55)
No. of Observations	16,306	6,697	9,609	16,373	6,771	10,261	16,373	6,162	10,211
Adjusted R-squared	0.065	0.050	0.118	0.081	0.062	0.193	0.074	0.053	0.166

Table 8. Robustness test 2: Alternative way to assess investment efficiency

Explanatory Variable	Investment (1)	Investment (2)
Intercept	-0.133	-0.101
	(-4.70)***	(-3.49)***
Favour	0.008	0.017
	(2.56)**	(3.24)***
Q		0.013
		(6.15)***
Favour*Q		-0.006
		(-2.12)**
OCF	0.089	0.096
	(5.51)***	(5.84)***
Size	0.011	0.009
	(8.65)***	(7.37)***
Leverage	-0.047	-0.045
	(-6.86)***	(-6.72)***
Connect	0.004	0.004
	(1.56)	(1.79)*
Age	-0.003	-0.003
	(-12.02)***	(-13.59)***
Gdpgrowth	0.069	0.070
	(1.84)*	(1.88)*
Lngdp	-0.005	-0.005
	(-4.22)***	(-4.04)***
No. of Observations	16,303	16,507
Adjusted R-squared	0.092	0.089

Table 9. Robustness test 3: Central SOEs versus local firms

Panel A: Central SOEs

Explanatory Variable	|IE_R|	IE_R>0	IE_R<0	|IE_B|	IE_B>0	IE_B<0	|IE_C|	IE_C>0	IE_C<0
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept	0.087	0.072	0.079	0.138	0.035	0.137	0.138	0.182	0.145
	(2.22)**	(0.81)	(2.79)***	(2.65)***	(0.30)	(4.43)***	(2.69)***	(1.51)	(3.92)***
Favour	-0.002	0.002	-0.004	-0.005	-0.008	-0.003	-0.009	-0.011	-0.007
	(-0.59)	(0.20)	(-1.48)	(-1.05)	(-0.81)	(-0.73)	(-1.86)*	(-0.96)	(-2.33)**
OCF	0.060	0.082	0.044	0.067	0.133	0.028	0.073	0.123	0.037
	(2.83)***	(1.60)	(2.56)**	(2.18)**	(1.67)*	(1.61)	(2.50)**	(1.87)*	(2.11)**
Size	-0.001	0.001	-0.001	-0.002	0.005	-0.002	-0.002	-0.003	-0.003
	(-0.57)	(0.31)	(-0.89)	(-1.02)	(0.97)	(-1.90)*	(-0.98)	(-0.57)	(-1.89)*
Leverage	-0.011	-0.028	-0.008	-0.007	-0.064	0.007	-0.006	-0.042	0.011
	(-1.55)	(-1.58)	(-0.91)	(-0.79)	(-2.46)**	(0.72)	(-0.63)	(-1.44)	(1.11)
ROA	-0.038	-0.011	-0.059	-0.118	-0.130	-0.149	-0.093	-0.080	-0.106
	(-1.38)	(-0.17)	(-2.20)**	(-2.97)***	(-1.26)	(-5.17)***	(-2.42)**	(-0.75)	(-3.62)***
Connect	0.006	0.007	0.004	0.004	0.011	-0.002	0.002	0.005	-0.003
	(1.30)	(0.82)	(0.96)	(0.62)	(1.01)	(-0.53)	(0.39)	(0.37)	(-0.77)
Admin	0.014	0.036	0.007	0.022	0.044	0.006	0.029	0.125	0.003
	(1.29)	(1.10)	(0.73)	(1.08)	(0.64)	(0.42)	(1.46)	(1.55)	(0.22)
Tunnel	0.006	-0.018	0.018	0.002	-0.066	0.017	0.003	0.007	-0.001
	(0.16)	(-0.28)	(0.46)	(0.03)	(-0.65)	(0.54)	(0.05)	(0.06)	(-0.03)
Independent	-0.010	-0.008	-0.020	-0.060	-0.143	-0.029	-0.045	-0.082	-0.024
	(-0.40)	(-0.17)	(-0.84)	(-1.87)*	(-2.14)**	(-1.27)	(-1.37)	(-1.00)	(-0.95)
Duality	-0.001	0.007	-0.007	0.008	0.027	-0.002	0.004	0.023	-0.006
	(-0.22)	(0.49)	(-1.38)	(0.99)	(1.34)	(-0.39)	(0.44)	(1.11)	(-0.99)
Gdpgrowth	-0.030	-0.064	0.005	0.012	0.064	0.014	0.006	-0.002	0.027
	(-0.65)	(-0.69)	(0.11)	(0.24)	(0.60)	(0.31)	(0.12)	(-0.02)	(0.58)
Lngdp	0.001	0.000	0.001	0.001	0.005	-0.001	0.001	0.002	-0.001
	(0.66)	(0.04)	(0.89)	(0.66)	(1.11)	(-0.73)	(0.38)	(0.41)	(-0.61)
No. of Observations	2,011	747	1,264	2,017	753	1,363	2,017	648	1,369
Adjusted R-squared	0.097	0.089	0.150	0.102	0.119	0.195	0.101	0.104	0.185

Panel B: Local firms

Explanatory Variable	|IE_R| (1)	IE_R>0 (2)	IE_R<0 (3)	|IE_B| (4)	IE_B>0 (5)	IE_B<0 (6)	|IE_C| (7)	IE_C>0 (8)	IE_C<0 (9)
Intercept	0.151	0.176	0.101	0.241	0.311	0.182	0.219	0.311	0.162
	(9.80)***	(6.07)***	(6.89)***	(12.00)***	(8.00)***	(12.50)***	(11.23)***	(7.75)***	(10.56)***
Favour	0.003	0.008	0.000	0.004	0.010	-0.001	0.005	0.010	0.001
	(2.51)**	(2.68)***	(0.31)	(2.34)**	(2.50)**	(-0.45)	(2.60)***	(2.60)***	(0.95)
OCF	0.033	0.027	0.037	0.053	0.077	0.033	0.048	0.069	0.031
	(4.57)***	(2.05)**	(5.11)***	(5.80)***	(4.05)***	(4.46)***	(5.33)***	(3.24)***	(4.11)***
Size	-0.004	-0.005	-0.003	-0.008	-0.011	-0.005	-0.007	-0.012	-0.004
	(-6.07)***	(-3.76)***	(-5.18)***	(-9.38)***	(-6.40)***	(-8.42)***	(-8.52)***	(-6.19)***	(-6.48)***
Leverage	0.000	-0.001	-0.000	0.019	0.009	0.017	0.014	0.026	0.011
	(0.08)	(-0.20)	(-0.01)	(3.99)***	(0.96)	(4.85)***	(3.00)***	(2.20)**	(3.28)***
ROA	-0.013	0.035	-0.050	-0.067	0.054	-0.135	-0.051	0.020	-0.115
	(-1.27)	(1.69)*	(-4.59)***	(-4.53)***	(1.69)*	(-11.70)***	(-3.63)***	(0.59)	(-10.61)***
Connect	0.001	0.000	-0.000	0.001	0.001	-0.002	0.000	0.003	-0.002
	(0.55)	(0.18)	(-0.04)	(0.90)	(0.53)	(-1.37)	(0.15)	(1.00)	(-2.01)**
Admin	0.014	0.008	0.019	0.016	0.038	0.004	0.009	0.014	0.003
	(2.93)***	(0.85)	(3.86)***	(2.17)**	(2.67)***	(0.75)	(1.35)	(0.93)	(0.58)
Tunnel	-0.010	-0.001	-0.015	-0.021	-0.088	0.008	-0.022	-0.071	0.013
	(-0.93)	(-0.06)	(-1.40)	(-1.32)	(-2.70)***	(0.65)	(-1.38)	(-1.70)*	(0.99)
Independent	0.026	0.033	0.021	0.034	0.037	0.027	0.031	0.044	0.021
	(2.69)***	(1.73)*	(2.24)**	(3.01)***	(1.74)*	(2.46)**	(2.85)***	(1.96)*	(1.96)*
Duality	0.000	0.001	-0.001	-0.000	0.003	-0.003	0.000	0.000	-0.002
	(0.08)	(0.30)	(-0.61)	(-0.26)	(0.91)	(-2.55)**	(0.23)	(0.07)	(-1.18)
Gdpgrowth	0.026	0.033	0.012	0.053	0.083	0.028	0.056	0.077	0.027
	(1.27)	(0.91)	(0.62)	(2.08)**	(1.92)*	(1.25)	(2.34)**	(1.70)*	(1.29)
Lngdp	-0.001	-0.002	0.000	-0.002	-0.003	-0.000	-0.001	-0.002	-0.000
	(-1.67)*	(-2.14)**	(0.42)	(-2.31)**	(-2.31)**	(-0.74)	(-1.73)*	(-1.20)	(-0.57)
No. of Observations	14,295	5,950	8,345	14,356	6,018	8,898	14,356	5,514	8,842
Adjusted R-squared	0.063	0.050	0.116	0.082	0.067	0.196	0.074	0.057	0.167