Limits to Autocracy: An Analysis of China's Renationalization

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Abstract

We document large-scale reversal of privatization in China—local governments taking back shares in a quarter of previously privatized firms. Politicians who are *not* affiliated with any of the dominant political factions are more likely to waver under pressure and adopt renationalization. The failure to adhere to the privatization scheme reduces productivity and raises labor redundancy and firm leverage. The policy reversal casts doubt on the notion that autocracies have advantages in policy implementation: politicians without factional affiliation are disadvantaged in the promotion process and are more sensitive to unemployment pressure.

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1. Introduction

Are autocracies superior in implementing economic policies than democracies? After all, since autocrats get their power through coercion, not election, it seems they may be good at pushing economically sound policies that might be politically costly under democracy. For example, Gary Becker states that:

"Visionary leaders can accomplish more in autocratic than democratic governments because they need not heed legislative, judicial, or media constraints in promoting their agenda…Visionaries in democracies can accomplish much sometimes… However, their accomplishments are usually constrained by due process that includes legislative, judicial, and interest group constraints." (Becker 2010).

The experience of Taiwan, Singapore, South Korea, and more recently, China, seems to support the view that, when ruled by visionary leaders, autocracies can be efficient in promoting economic growth. As a comparison, democracies face far more obstacles in policy formation.[1] The idea of a benevolent autocrat henceforth appears to be appealing, at least when he decides to adopt economic policies that have proved to be effective.

In this paper we refute the notion that the authoritarian nature of an autocracy puts it in advantage in adhering to good economic policies. We study China, perhaps the most economically successful autocracy. We document large-scale "renationalization": local governments re-possessing ownership stakes in a quarter of previously privatized firms. Thus although privatization improves firm firm efficiency in general (see Megginson and Netter, 2001 for a comprehensive review), local politicians in China fail to adhere to it. We find that such policy reversals are largely driven by unemployment concerns, and that officials with *NO* affiliation with the major political factions of the ruling Chinese Communist Party (CCP) are more likely to reverse the course of privatization. The Princelings, those officials born into political families, appear to be the strongest faction and are least likely to waiver under pressure.

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[1] See Dinc and Gupta (2011), Dastidar, Fisman, and Khanna (2008).

Following renationalization, firms experienced reductions in profitability and productivity, along with increases in labor redundancy and leverage. There are strong political incentives behind the trade-off between efficiency and stability: we find that factional ties boost the promotion likelihood of politicians, and that those officials lacking strong patronage will find their promotion prospectus more sensitive to local unemployment than to economic growth. They naturally care more about avoiding social unrest than about making economic achievements.

Politicians in autocracies such as China are not constrained by an electorate, yet their survival depends on their selectorate (Bueno de Mesquita et al, 2003). Although privatization enhances efficiency in the long run, it may generate unemployment and social instability in the short run. Politicians in charge of the privatization process risk the probability of upsetting the top autocrat before reaping the benefits. This then leads to policy distortions and policy reversals, and in turn generates economic inefficiencies. While autocracies usually have disastrous economic outcomes under incapable leaders, our results suggest that even a visionary autocrat may find his vision fail to materialize.

We add to the literature on the relationship between political systems and economic growth. Most advanced economies are democracies, and many countries experienced democratization after their economy took off. Earlier modernization theory argues that economic growth leads to democracy (Lipset 1959). Recently, Acemoglu et al (2008) find that the correlation between income and democracy disappears after controlling for country fixed effect, and there is no causal relationship between income and democracy. Acemoglu et al (2017) further find that democratizations in the past 50 years increase GDP per capita by about 20% in the long run， and that democracy promotes economic growth by encouraging investment, increasing schooling, inducing economic reforms, improving the provision of public goods, and reducing social unrest. An interesting issue related to these findings is that if a benevolent autocrat could mimic these policies and achieve even more due to his authority. As Ferguson (2011) suggests, perhaps autocrats can simply download the “killer apps” that have proved to be important for the success of

the West. This paper opens up the black box of how politicians implement economic policies in an autocracy and our results show that the power struggle in a non-democratic setting may actually hinder policy implementation, and that the top-down system in an autocracy is not as efficient as it seems to be even if the top autocrat has the right vision.

Related to the above, we contribute to a largely ignored area, that of reversals of privatization in the literature of SOE reforms. This literature largely focuses on privatization (Megginson and Netter 2001; Djankov and Murrell 2002; Estrin et al., 2009). State sector still accounts for 39% of employment in Russia and 44% in China, suggesting that privatization is far from complete and that there might be large-scale renationalization. The recent political turmoil in Europe and the United States further illustrates that other policies long considered important consensus among most economists, e.g. free trade, may also face the possibility of being reversed.

2. Institutional Background and Hypotheses Development

Since late 1970s, the CCP has instituted a tournament-type promotion system, which includes linking an official's promotion to his/her performance in supporting economic growth *and* maintaining social stability ('harmony') in a region (e.g., Bo, 2007; Li and Zhou, 2005). These policies are combined with mandatory retirement ages for officials working at different levels, which have led to the changing of guards from the top down every decade (e.g., Li, 1998). Mr. Jiang took over the highest post in 1989 from Mr. Deng, and was the leader of the Party for the next decade. He then handed over his position to Mr. Hu during the period of 2002-2004, who assumed his post until the end of 2012. Given the secrecy of the transition of power within the Party, ordinary citizens can only get a glimpse of the power struggles among the different blocs, as witnessed by the rise and fall of Mr. Bo, Xilai.[2]

We follow research in political science and identify three main factions within

[2] See, e.g., "China Drama Now a Murder Mystery", *Wall Street Journal*, April 11, 2012; "In China, a Fall from Grace May Aid a Rise to Power", *New York Times*, April 26, 2012; "People's Republic of Scandal", *Time*, May 14, 2012.

the Party by examining politicians' resumes. The first is the Youth League Group, led by former President and Party Secretary General Hu Jintao. His advancement to the top began with the Secretary General of the Youth League (of the Communist Party) in 1984. Officials in this group held top positions in the Youth League during earlier stages of their careers, and worked in the Central Committee of the Youth League or held the rank of provincial youth league vice secretary or higher. The second bloc—the Shanghai Group—is led by Mr. Jiang Zemin, who became the party secretary of Shanghai in 1985 before taking the post of the Secretary General of the Party in 1989. Officials in this group all have work experience in the Shanghai Municipal Government during 1985-1989. The third group is called the Princelings, or the descendants of prominent and influential older generations of Party officials, including both Mr. Xi, the current President and Secretary General, and Mr. Bo.

Both anecdotal evidence and political science research (e.g., Shih, Adolph and Liu, 2012) show that personal connections and support by senior officials can help advance an official's career. The relationship among the three factions can be characterized as 'competition and cooperation,' while officials not affiliated with any of the factions are expected to have weaker support from senior officials, and thus more concerned about protecting their status quo and not taking risks in setting economic policies.

These political institutions affect the politician's ability to handle sensitive issues e.g. privatization. While China had completed the largest scale of privatization of SOEs during much of the 1980s and 1990s, the privatization process is not always smooth. Pursuing for-profit goals leads to large layoffs in many areas, as privatized firms try to cut cost and increase labor productivity. When the local economy is underperforming, unemployment may lead to social unrest (e.g., Zhu, 2005). Government officials thus face tremendous pressure and may have to abandon or reverse the privatization process. The following case exemplifies such problems.

In 2005, the provincial government of Jilin (in the northeastern part of China) sold a 36% stake in Tonghua Iron & Steel, a SOE, to privately owned Jianlong Corporation Group as part of restructuring effort. Jianlong also structured a deal with

the local government designed to increase its stake in Tonghua to a majority one. Rumors began flying that Jianlong planned to build a new steel plant in another city and replace current Tonghua workers with new recruits from there; the person of interest—Mr. Chen, a 41-year-old executive of Tonghua and a representative from Jianlong—was expected to execute plans of slashing jobs and shrinking pensions. Thousands of workers who worried about losing their jobs staged a protest that shut down production at the factory. A group of them found Mr. Chen and beat him severely, fracturing his skull. Workers also blocked streets near the factory and hurled bricks, preventing police and paramedics from reaching Mr. Chen. Later that night, local government officials announced that the plan for Mr. Chen's company to take control of the steelmaker had been scrapped (*Wall Street Journal*, 07/31/2009).

These facts about China's political system and privatization help us frame our empirical tests. We are interested in how the structure of the political system affects politicians' policy choices. Politicians calculate their own benefits and costs and may seek sub-optimal policies. In particular, the privatization of SOEs, despite its general positive effect in improving efficiency, faces considerable constraints and incurs social, political and economic costs, such as possible social instability caused by unemployment. Thus, the privatization process is affected by political concerns of local politicians. Without factional support, politicians might be more risk-averse and are more sensitive to the pressure resulted from layoffs and possible social unrest.

Factional politics is a norm in many countries, including modern democracies (Persico *et al*., 2007), and they are more common in the absence of full democracy (Markevich and Zhuravskaya, 2011). We focus on party officials that hold the highest position at the *provincial* level, i.e., provincial party secretary. China has 31 provinces, offering a wide range of cross-sectional differences in economic development and various dimensions of institutions. Under the supervision of the central government, these provinces are regarded as fairly independent economic units and provincial leaders are not involved with managing *other* provinces' economies and policy setting. Within a province, the party secretary, along with the governor, oversees the entire

economy and monitors officials at lower levels (e.g., cities and counties).[3]

The corporate event we look at is re-nationalization, defined to be local governments (within a province) regaining ownership stakes in *privatized* firms. We expect party officials without strong support and protection from senior leaders to be more concerned about the short-run costs (e.g., unemployment) than the long-run benefits (e.g., higher productivity) of privatization. Hence, we hypothesize that the provincial party secretaries with *no* affiliation with any of the three factions are more likely to support re-nationalization in their provinces so as to lower or stop rising unemployment rates.

Our next set of hypotheses relate to the effects of re-nationalization on firm performance. Based on the vast body of empirical evidence on privatization in China and elsewhere, we hypothesize that re-nationalization has adverse effects on firm's performance as measured by profitability and labor productivity. Since re-nationalization is not a random event, our main empirical strategy is to use an IV model and a two-stage least square procedure (2SLS) to study the effects of re-nationalization on performance. An official's affiliation with a particular political faction is either determined by his/her work experience with the supreme leader of the party (Mr. Jiang and Mr. Hu) *long* before the official becomes the party secretary of a province, or by his/her kinship to revolutionary heroes. Thus, officials' affiliation with the three factions, which measures the strength of their standings in the Party and is linked to the likelihood of re-nationalization of firms in a region, should not affect the performance of individual firms. Therefore, we use these indicators (among others) as instruments for re-nationalization.

Theories of political economy stipulate that politicians can benefit from economic policies even if they reduce efficiency. Politically driven economic policies are not a new phenomenon in China: politicians, out of career concerns, can take ill-conceived policies even if they may lead to dire consequences. Kung and Chen

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[3] In terms of overall standing among all party and government officials in China, provincial party secretaries and governors have the same administrative rank as those holding ministry-level positions (e.g., Minister of Finance, Minister of Justice) in the *central* government.

(2011) show that provincial politicians' rank can explain a significant part of the high death rates during China's Great Famine, 1959-1961. They find excessively high tax and procurement rates (and thus high death rates) in provinces governed by lower-ranked officials, who had a stronger incentive to please the Party's Central Committee via contributions in the form of tax income and possessed goods. In our context, one benefit of re-nationalization is lower unemployment rates, an important indicator of "social harmony," even if re-nationalization leads to worse performance of the firms. Hence, in our final set of tests we explore the impact of unemployment on the politicians' promotion perspectives.

Overall, these tests will shed light on whether Chinese politicians could adhere to a policy agenda, and the economic and political effects of their choices. The answers to these questions will enhance our understanding of the working of an autocracy.

3. Data and Results

Our main data source is the Annual Survey of Industrial Firms (ASIF) released by the National Bureau of Statistics of China for the period 1998-2007, which contains all SOEs and non-SOEs with annual sales over RMB 5 million. Among all the existing databases on Chinese corporate sectors, this is by far the most comprehensive one for all types of firms with financial and accounting data. A firm's ownership type is updated each year in the database. In particular, for each state ownership stake, the database specifies the owner's name (i.e., which government branch or agency) and administrative rank. We restrict our sample to firms that were 100% owned by local government as of the end of 1998 *and* went through a privatization process afterwards. The firms that remain private after the initial privatization process serve as the natural 'control group' for privatized firms that were later 're-nationalized.' We exclude firms that are owned by the *central* government: provincial level officials have no control over these companies and our focus is on the influence of local government officials on corporate sectors. We also drop firms without sufficient information on key variables. Our final sample contains 4,727 firms over the period 1998-2007.

A state-owned firm (as of 1998) is privatized if its state ownership stake drops below 100% after 1998. After the initial privatization, there are three possible outcomes for the firm in terms of ownership structure: 1) its state ownership stake remains the same; 2) further privatization, i.e., state ownership continues to fall; and 3) the state ownership stake increases (re-nationalization). Specifically, a firm is re-nationalized if the state ownership stake increases following the initial privatization.[4] As such, 1,212 firms (25.6%) of our sample SOEs experienced a reversal of privatization, and the average duration between privatization and re-nationalization is about 2 years.

Figure 1 plots the frequencies of privatization and re-nationalization during the sample period. We can see large-scale privatization took place in 1999 and early 2000s, and re-nationalization occurs as early as 2000 and continues throughout the 2000s. The magnitude of increases in government stakes is usually large: among the re-nationalized firms, the average size of the state ownership increases from 43.2% (post privatization) to 70.9% (after re-nationalization). In fact, local governments regain the controlling position—ownership stake greater than 50%—in 441 firms; and in 235 firms, local government stakes increase from 0 to 100%. Figure 2 plots the ratio of the number of re-nationalized firms over incidences of newly privatized firms over the sample period.

3.1 Univariate Comparisons of Renationalized and Control Group Firms

Table 1 compares re-nationalized firms and privatized SOEs that are not re-nationalized. Data is obtained for the period after the initial privatization but before local governments regain control of these firms. The average size of the state ownership stakes of re-nationalized firms is 43.14% *before* the government takeover, far greater than that of SOEs remaining privatized (17.33%). Re-nationalized firms are larger, have higher leverage ratios, lower labor productivity and profitability;

[4] We conduct robustness tests using more restrictive definitions of re-nationalization below (see Table 6). Our dataset does not provide information on the transaction prices through which local government acquired the ownership stakes.

these firms also employ more workers and account for a higher share of workforce in local labor markets. Overall, these crude comparisons show that firms that are re-nationalized by local governments appear to be less efficient and in worse financial conditions than the rest of the privatized SOEs but play a more important role in the local labor markets.

Table 1 also compares the privatization process of the two groups of firms in Panel B. A common problem among all SOEs is low labor productivity in part due to excessive work force. Hence, one of the major changes through privatization is the reduction in labor force and enhanced productivity. We construct the variable '*L*ayoff' as $Layoff_t = LnL_t - LnL_{before\_privatization}$, where L_t and $L_{before\_privatization}$ are the number of employees in year t and one year before privatization, respectively. '*L*ayoff' thus measures the *percentage* change in the number of workers since the initial privatization. For re-nationalized firms, 10.8% of the work force is 'released' from full-employment status after privatization; this figure is only half of the fraction of workers laid off following privatization for the other firms (21.6%). Similarly, we construct the variable 'ΔSale' to measure changes in sales. For re-nationalized firms, sales increase by only 18.8% after privatization, as compared to an improvement of 30.2% for the other firms. We also find similar results for changes in labor productivity with re-nationalized firms displaying a smaller improvement. These comparisons further indicate that the privatization process for firms that are later re-nationalized is *not* as complete as that of the other firms, and they do not experience the same level of improvement in operation following privatization.

3.2 Provincial-level Political Structure and Its Relationship with Renationalization

During the period of 1998-2007, there are a total of 75 provincial party secretaries (across 30 provinces in China;[5] a few officials hold the same post in different provinces at different points of time), and 91 pairs of province-party secretaries. The average tenure of a provincial party secretary is 5.58 years (median is

[5] We drop Tibet due to the small number of firms located in the region.

5 years), with the shortest (longest) tenure 1 year (16 years). As discussed above, we sort the officials into four groups: a) Youth League (18.4%), b) Shanghai Group (17.7%), c) Princelings (5.8%), and d) not belonging to any faction (58.1%). Overall, about 42% of the highest ranked provincial party leaders belong to one of the three dominant factions.

As stated above, the affiliation with both the Shanghai Group and Youth League Group is established when a top provincial leader worked in Shanghai during 1985-1989 or had working experience in the Youth League's Central Committee in Beijing or a provincial Youth League. We calculate the interval between the establishment of such factional relationship of an official and the year when the politician became the provincial party secretary. The mean and median of this interval is 15.3 and 15 years for the Shanghai group, and 20.1 and 20 years for the Youth League group.

We hypothesize that officials without any factional affiliation (and thus strong political support) are more sensitive to issues that may jeopardize social stability, e.g. unemployment. Therefore, they will have a stronger incentive to generate clear signs of 'social harmony,' possibly at the expense of structural economic reforms. Figure 3 plots the number of provincial leaders among the four groups (three factions and the 'no faction' group). There is a downward trend in the proportion of provincial leaders' without factional affiliation over our sample period. Not surprisingly, after Mr. Hu took over the highest position of the Party in 2002, there had been a rise in the number of provincial leaders belonging to the Youth League, while at the same time the strength of the Shanghai Group declined following the retirement of Mr. Jiang (the predecessor of Mr. Hu).

Panel C of Table 1 relates the frequency of re-nationalization (of firms in a province) to the identity and association of the highest ranked official—the party secretary in the province. In provinces where the party secretary has no ties to any political faction, 9.29% of the privatized firms are re-nationalized. However, when the official is affiliated with one of the three factions, only 5.58% of the privatized firms are taken over by the local government (the difference between the two means is

significant at 1%). These results provide preliminary evidence on the influence of factional politics and the status of the provincial party secretary on the likelihood of local firms being re-nationalized.

3.3 Determinants of Renationalization

We first examine the determinants of firms' re-nationalization by estimating the following Probit model:

$$Pr\,(RN_{i,t}=1) = \Phi\{\varphi_0 + \beta Faction_{p,t} + \varphi_1 X_{i,t-1} + \varphi_2 Z_{p,t} + \gamma_t + \rho_p + \varsigma_j + \mu_{ip,t}\} \qquad (1)$$

where $RN_{i,t}$ takes the value of 1 if firm i is re-nationalized in year t, and 0 otherwise. We drop all the observations for a firm *after* re-nationalization; we also drop observations before the initial privatization, as the firm does not face the choice of re-nationalization at that point. For example, suppose a firm is privatized in 1999 and re-nationalized in 2003, then this firm has 4 observations entering the regression model in Eq. (1), with $RN_{i,t}$ = 1 for 2003 and 0 for all four years during 2000-2002; the observation in 1998 (first year of our sample period) is dropped. As a result of this sampling procedure, we have a total of 15,266 firm-year observations, and the number of unique firms is 4,727. We cluster standard errors by province so as to allow for possible correlations among error terms from firms located in the same province.

Our key explanatory variable is the political status of the party secretary of the province. We measure this by a dummy variable which indicates if he/she is affiliated with one of the three main political factions within the CCP.

Vector X in Eq. (1) is a set of *lagged* firm controls, including firm size (log of book assets), leverage ratio, profitability (return on sales, or ROS), the size of local government's ownership stake (State Share) and its squared term, labor productivity, and the importance of the firm in the local labor market (Employment Share). We also view the extent of labor force reduction following privatization (the variable "Layoff" that measures the percentage drop in the labor force since privatization) as a factor for re-nationalization. To control for the potential impact of political connection, we include a variable that captures the administrative rank of the firm prior to its

privatization. In addition, we include a set of year, province, and industry indicators (γ_t, ρ_p, ς_j) in all the models.

Table 2 reports the estimated marginal effects (evaluated at the mean of the variables) of firms' re-nationalization. First, we find that larger firms and firms in worse financial conditions (higher leverage) and lower labor productivity are more likely to be re-nationalized (statistically significant at the 5% or 1% level). For example, according to the results of Column 1, as labor productivity drops by one standard deviation, the likelihood of re-nationalization rises by 0.52 percentage points; when leverage increases by one standard deviation, the probability of re-nationalization increases by 1.61 percentage points. Firms' profitability (ROS), however, does not appear to affect their likelihood of re-nationalization.

Second, firms with larger local government ownership stakes (coefficient significant at the 1% level in all the models), and firms that have *not* laid off a large number of workers (significant at 5% in all the models) are significantly more likely to be renationalized by local governments. For instance, when the layoff rate, or the percentage of workers released from full-employment status after privatization (but before re-nationalization), *falls* by one standard deviation, the probability of re-nationalization rises by 1.02 percentage points. Given the unconditional probability of a firm re-nationalized by the local government being 8.1% for the whole sample, the result is also economically meaningful.

The above results suggest that the size of the labor force of the firm and the extent of privatization play important roles in the government's decision to re-possess the control of privatized firms. Re-nationalization of these firms can have greater benefits for the officials in that the re-nationalized firms can employ more workers thus help stabilizing the local labor market. Further, the process of re-nationalization of these firms can perhaps be accomplished at lower costs since the government still maintains a large, albeit minority ownership stake of the privatized firms. Government stake has a non-monotonic affect on the likelihood of re-nationalization: its squared term has a negative sign (coefficient significant at the 1% level in all models), suggesting that when the government holds an overwhelming position in the firm, there is no need to

further increase its ownership stakes.

The impact of factional affiliation. A key innovation of our study is to examine the role of party officials in the organization of corporate sectors, and the results from Table 2 confirm this role in driving renationalization. When a province's party secretary does *not* have close ties with any of the three dominant factions, firms located in that province have a 1.64 percentage points higher chance to be re-nationalized (Column 1, significant at 5%). Considering that the (unconditional) probability of re-nationalization is 7.9% in the whole sample, this suggests that political status and factional support of Party Secretary at the provincial level can explain a large part of the re-nationalization process.

Omitted variables. In Column 2 of Table 2, we deal with the concern that the estimates may be affected by the omitted circumstances faced by the politician. We include a few variables that describe the institutional environment of the province. First, a larger share of SOEs in the province indicates less private sector development in the region. Second, the unemployment rate is a primary measure of social stability in the province. Third, we include an index based on survey data from Fan and Wang (2009) that measures the degree of government interference into corporate sectors; a *higher* index indicates *less* government intrusion in the corporate sectors and *better* protection of (private) property rights.[6] We also include the growth rates of provincial GDP.

The provincial level controls also come in as expected. For example, firms located in regions with more government intrusion of corporate sectors (*lower* Institution index), higher unemployment rates, and greater share of SOEs in the local economies are more likely to be re-nationalized. If the Institution index drops by one standard deviation—roughly equivalent to moving from Jiangsu, a developed coastal province with a high institutional score, to Shaanxi, an underdeveloped inland province with a low score, the probability of re-nationalization rises by 0.29

[6] This is a component of the "NERI (National Economics Research Institute) Index" that measures economic development and institutional environment across provinces in China. Using the overall index yields similar results.

percentage points. These results are consistent with those firm-level factors, suggesting that unemployment is a major concern for provincial officials, and these officials are more likely to 'interfere' with private sectors if their general influence in the local economy is greater. By contrast, GDP growth (prior to re-nationalization) and fiscal status of the government is not related to the likelihood of re-nationalization.

Finally, another factor that may affect re-nationalization is corruption: private owners may collude with politicians when they sell their stakes to the government. Although we do not have data on transaction prices, we try to control for this by including a regional corruption index in column 2. As expected, a more corrupt environment, measured by the frequency of exposed graft cases, is associated with a higher likelihood of re-nationalization.

Overall, the results imply that the decision to re-nationalize is *not* made entirely based on efficiency enhancement or profit maximization (e.g., for non-state shareholders of the firms).

Hazard model. Another issue is whether the probit model is the right specification. Alternatively we could use the duration model. The literature has shown that the estimates from a discrete-time binary-choice model converge to those obtained from a continuous-time duration model (Allison, 1982). Thus not surprisingly, we reach qualitatively similar results in Columns 3 and 4 using the Cox proportional hazard model

Difference between factions. To further investigate the impact of factional politics, we run a regression similar to Eq. (1), with separate indicators for each of the three factions. The default group is *No Faction*. Table 3 shows that being affiliated with any of the three factions reduces the probability of renationalization, and that the coefficient of the Princeling group is much larger than the coefficients of the other two factions. This suggests that, possibly because of their inherited political capital, politicians from high profile political families are the least likely to retreat from a policy stance.

Ruling out Reverse Causality. There may be a concern of reverse causality of

our main results. We interpret the results as weak political status of the politician leads to greater likelihood of firms being renationalized. Alternatively, one may think that party officials *without* connections to the dominant factions are more likely to be assigned to provinces with struggling privatized firms and worse labor markets. This is quite unlikely based on the experience of President Hu Jintao: he was the party secretary of Guizhou and Tibet, two of the most economically backward provinces, before being promoted to Beijing. Nonetheless, to rule out this possible reverse causality, we use an indicator variable that takes the value of 1 if the provincial party secretary has no connection to any of the three groups, and 0 otherwise, as the *dependent* variable in Table 4, and run a Probit regression with similar controls as in Table 2, capturing firm-level performance (we use the average of each variable of the firms located in a province) and provincial level variables. Based on the results reported in Table 4, we do not see any of the firm-level or provincial-level variables to be correlated with the political status of the party secretary. We conclude that reverse causality discussed here is unlikely to explain our results.

More robustness checks. We conduct a number of robustness checks on the determinants of re-nationalization. To save space, we only report the coefficients of interest—the variables measuring the political status of the officials in Table 5. First, since the frequencies of re-nationalization can be affected by different time trends across regions, we add interaction terms between the year and regional indicators to our baseline regression specified in Eq. (1). We continue to find similar results (column 1). Second, we use different definitions of "renationalization" regarding the threshold of increased government ownership stakes. More specifically, we consider a firm to be re-nationalized in year t if the government share increases by at least 10% (column 2) or if the government share increase from less than 50% to larger than 50% (column 3). With these alternative definitions we obtain very similar results. Fourth, we employ alternative definitions of factional affiliations. Following Shih et al. (2012), we include an official's social networks (e.g., alumni relations with the faction leader) in addition to his/her working experience to determine factional affiliation. We report qualitatively similar estimate is found, although the magnitude

is smaller (column 4).

Fifth, we also consider a narrower (and stricter) definition of political factions: being affiliated with the current Secretary General of the CCP. Thus the "Shanghai group" indicator equals one only if the politician is associated with Mr. Jiang Zemin before 2002, when Mr. Jiang stepped down in 2002. The "Youth League group" indicator equals one only if the politician is associated with Mr. Hu Jintao after 2002, when Mr. Hu took presidency. This approach is essentially similar to Jia et al. (2015) and Persson and Zhuravskaya (2016), where variation in the central leadership is used to identify the strength of political connection of local politicians in China. Using this new definition of factional affiliation, we continue to obtain similar results (column 5) with weaker magnitude.

3.4 Economic and Political Effects

In Table 6 we examine the effects of re-nationalization on firm performance. We first estimate the following fixed effect model:

$$Y_{i,t} = \beta_0 + \beta_1 Post\text{-}renationalization_{i,t} + \gamma_i + \rho_t + \varepsilon_{it} \qquad (2)$$

The dependent variables are Labor Redundancy (measured as the log of number of employees over sales or over value-added), Profitability (return on sales), Total Factor Productivity (including measures of TFP estimated with three methods), and Leverage (total debt over total asset). $Post\text{-}renationalization_{i,t}$ is a dummy variable which equals one if a firm has been renationalized. γ_i and ρ_t are firm and year fixed effects, respectively. The results are reported in Panel A.

In order to further control unobservable differences between firms which experienced renationalization and other firms, we try to add more controls. Specifically, we add industry-specific year fixed effects to allow for industry-specific shock. To allow for different shocks between firms renationalized (treatment group) and not renationalized (control group), we add group-specific year fixed effects. We also add the interaction terms of initial firm-level characteristics[7] and year dummies, to control for the time effects of such characteristics on the outcome variables. The

[7] Initial firm level characteristics are Firm Size, State Share, Leverage, Labor Productivity, Profitability, Layoff, and Employment Share in the year of privatization.

results are reported in Panel B.

As discussed before, re-nationalization is not an exogenous event, and hence we also use a 2SLS procedure and an instrument to deal with the potential endogeneity problem. It is unlikely that at the initiation of a factional relationship, an official would choose the faction in anticipation that the leader of his/her faction would eventually become the supreme leader of the Party many years later: the median of the interval between an official's initiation of a factional association and his/her first year as a provincial party secretary is 15 years for the Shanghai group and 20 years for the Youth League group. We thus use whether a provincial leader is affiliated with a political faction as instrument.

We follow Wooldridge (2007) and fit a probit model with $Post\text{-}renationalization_{i,t}$ as the dependent variable, we then use the fitted probabilities from this model as an instrument for $Post\text{-}renationalization_{i,t}$ in a 2SLS estimation. The probit model is as follows:

$$Pr\,(Post\text{-}renationalization_{i,t}=1) = \Phi\{\,\varphi_0 + \varphi_1 X_{i,t-1} + \varphi_2 Z_{p,t} + \gamma_t + \rho_p + \varsigma_j \;+ \mu_{ip,t}\} \quad (3a)$$

The first stage regression model (3a) is the same as our previous Probit model specified in Eq. (1), except that the dependent vaible is $Post\text{-}renationalization_{i,t}$.. Similar to Eq. (1), independent variables include political faction status, firm-level and province-level characteristics, industry dummies, year dummies, and province dummies. We obtain the fitted value of $Post\text{-}renationalization_{i,t}$ through estimating (3a).

The we estimate the following linear regression model using the fitted value of $Post\text{-}renationalization_{i,t}$ as the actual instrument for the variable $Post\text{-}renationalization_{i,t}$:

$$Y_{i,t} = \beta_0 + \beta_1 RN_{i,t} + \beta_2 X_{i,t-1} + \beta_3 Z'_{p,t} + \gamma_t + \rho_p + \varsigma_j + \varepsilon_{ip,t} \quad (3b)$$

The second stage (3b) is a linear regression model, with dependent variable Y the change of performance metrics from one year before re-nationalization (t-1) to one year after re-nationalization (t+1). The variables included in $Z_{p,t}$ in Eq. (3a) but excluded from $Z'_{p,t}$ in Eq. (3b) are the indicators 'no faction'. These provincial leaders' characteristics serve as the determinants of a local firm's re-nationalization. Finally,

we include the same set of firm-level and province-level controls in both stages, with standard errors again clustered at the province level. The results are reported in Panel C.

Testing for IV exclusiveness. As shown in Tables 2 and 4, factional affiliation, which measures the strength of provincial leaders' political status, affects the likelihood of privatized firms being renationalized. Moreover, it should not (directly) affect the performance of a specific local firm. In Table 4, we have already shown that a provincial leader's factional affiliation is *not* related to the (average) performance of firms in the province. In addition, we also want to rule out other possible channels through which officials' political status can affect firm performance. For example, connected politicians may receive more financial support from the central government, which could in turn help improve firm performance in the province. To test this, we regress the total amount of fiscal transfers a province receives from the central government in a given year (scaled by the provincial fiscal revenue) on the provincial leader's political factional indicator and other controls in Table 7. Again, we do *not* find that a politician's factional affiliation affects the amount of transfers the province receives from the central government. Based on the above tests, we conclude that the political indicators satisfy the exclusion restriction, and serve as valid instruments for re-nationalization in our study of the effects of re-nationalization on firm performance.

Economic consequences. From Table 6, we observe that renationalization has a negative impact on firm performance: the profitability and TFP of a renationalized firm fall after the local government regains ownership stakes as compared to the year before re-nationalization, than the control firms. Renationalization also raises labor redundancy and firm leverage, which suggests that the government interferes with the layoff process and by injecting more bank loans to the ill-performing firm. Putting together the results, we have shown that renationalization is a sub-optimal economic policy. The decision is made in part to protect the politician from being affected by negative social consequences. While temporarily halting the trend of unemployment, the economic impact of renationalization is negative and runs contrary to the central

government's aim to maintain a high economic growth.

Political incentives. We have demonstrated that a politician's factional affiliation has profound impacts on his/her ability to adhere to an economic policy. To further explore the political incentives behind this behavior, we examine the determinants of promotion by estimating the following model:

$$Promoted_{i,t} = \beta_0 + \beta_1 X_{i,t} + \beta_2 Z_{p,t} + \gamma_p + \rho_t + \varepsilon_{i,t} \quad (4)$$

where the dependent variable *Promotedi* is a dummy which equals one if the party secretary *i* during the renationalization sample period 1999~2007 got a seat in the Politburo by 2012, the recent National Congress of the CCP. The key explanatory variables are the politician's political status and economic indicators of the province. We control for province fixed effects and year fixed effects. Column 1 of Table 8 shows that regional economic growth enhances the politician's promotion prospectus, consistent with the literature on career concerns of Chinese local officials. Not surprisingly, unemployment works in the opposite direction. When we add the politician's political status to the regression in Column 2, we can see that politicians with *NO* factional affiliations are disadvantaged in the promotion competition, after controlling for economic growth and unemployment. Column 3 further disaggregates factional ties into detailed classification and shows that being affiliated with one of the three main factions helps one's promotion, with the Youth League group displaying a weaker effect. Growth and stability may have different impact on different politicians, and we interact the factional affiliation with both GDP growth and unemployment in Column 4. While the interaction term between GDP growth and *No Faction* is insignificant, the interaction term between unemployment and *No Faction* is negative and significant. The results suggest that high unemployment would amplify the disadvantage of those politicians without strong factional support, and that high economic growth may not mitigate the issue.

4. Conclusions

The Chinese government has played an important role in the transition from a central planning economy to a mixture of market-based and government-controlled

sectors and has been hailed as a successful model of benevolent autocracy. Some have even suggested that a "Beijing Consensus" is replacing the "Washington Consensus" of the World Bank and IMF (Halper, 2010) partly because China boasts of "an army of great ideas and successful implementation" (Ramo, 2004).

With a large sample of firms from thirty provinces across China during the period 1998-2007, we document, for the first time in the literature, large-scale reversals of privatization: local governments regain ownership stakes in a quarter of previously privatized firms. The reversal of the policy agenda is closely related to China's political structure: we find that party secretaries *without* strong support are more concerned about protecting their status by introducing policies that can lead to immediate, 'desirable' social outcomes such as lower unemployment rates at the cost of long-run inefficiencies. Following prior research, we classify three dominant and distinct factions within the Party that have been in existence for the past two decades, and identify each provincial leader's affiliation with the factions. We find that firms located in provinces with party leaders who do not belong to any of the three dominant political factions are more likely to be re-nationalized. Renationalization leads to economic consequences that the Chinese government has been trying to avoid: reduction in productivity and increases in labor redundancy and leverage. The distortion fits well with the power structure in an autocracy: politicians without factional affiliations experience a smaller likelihood of promotion and their political fate hinges more on discouraging social unrest than on making economic achievement. Our results shed new light on how political structure and politicians shape economic policies, and in particular, how incentives of politicians can affect firms' organization structure and performance. By analyzing the determinants and consequences of renationalization, we show that the seemingly efficient top-down system in an autocracy is constrained by its Byzantine nature.

Going forward, many scholars have called for another reform in China, from the state-led, investment intensive, export-oriented economy, which may have reached a tipping point, to one relying much more on domestic consumption and private sectors' production (see, e.g., World Bank, 2012). Under this new model, privately owned

firms will play an increasingly more significant role, and more supportive policies and regulations are needed to help grow private sectors and allow them to compete with SOEs on an even playing ground. However, the built-in distortions in China's autocratic system may explain the recent stagnation in its market-oriented reforms and the massive build-up of debt.

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Table 1. Summary Statistics

This table presents sample statistics of firm-level variables. Our main source of data is the Annual Survey of Industrial Firms (ASIF) released by the National Bureau of Statistics for the period 1998-2007. We restrict our sample to firms that were 100% owned by local government as of the end of 1998 and went through a privatization process, in which state ownership drops below 100%, afterwards. A firm is 're-nationalized' if the state ownership stake increases following the initial privatization. The rest of the former SOEs remain privatized, and they serve as the 'control group.' Definitions of all the other variables are listed in Appendix A.

	Privatized SOEs Re-nationalized	Privatized SOEs *Not* Re-nationalized	Mean Comparison of Two Groups	Standard errors of of Mean Comps
Panel A. Firm-level Variables				
State Share	0.4314	0.1733	0.2580***	0.0078
Assets(million)	249.8616	196.6198	53.2418***	19.228
Sales(million)	140.8838	147.5181	6.6342	19.0807
Labor Productivity	4.5020	4.8998	-0.3979 ***	0.0235
Profitability	-0.0345	-0.0238	-0.0106*	0.0062
Leverage	0.7417	0.7228	0.0189***	0.0072
Employment	895.8628	573.3529	322.51***	35.5969
Employment Share	0.0522	0.0316	0.0205***	0.0017
Political Connection	0.162	0.179	-0.0171**	0.0086
Panel B. Change of Firm Performance around Privatization				
ΔAssets	0.1154	0.0990	0.0164	0.0152
ΔSales	0.1878	0.3024	-0.1147***	0.0188
ΔProductivity	0.3964	0.6229	-0.2265***	0.0207
ΔProfitability	-0.0049	0.0022	-0.0071	0.0084
ΔLeverage	0.0064	-0.0066	0.0130*	.0071
Layoff	0.1079	0.2159	-0.1080***	0.0118
Number of firms	1,212	3,515		

Panel C. Policy Reversal and Political Factions This table compares the rates of firms' re-nationalization across provinces. Our main source of data is the Annual Survey of Industrial Firms released by the National Bureau of Statistics for the period 1998-2007. We sort provincial leaders by whether they are affiliated with one of the three main political factions or not and whether they are new to office (the first year of their tenure). All the other variables are described in Appendix A.

	No Faction	Faction	Comparing Means	Standard error of mean-comparison
Rate of re-nationalization	0.0929	0.0558	0.0371***	0.0048
Number of firm-years	10,150	4,824		

Note: *, ** and *** indicate statistical significance at 10%, 5% and 1% levels.

Table 2. Determinants of Policy Reversal

This table reports Probit regressions on the determinants of firms' re-nationalization. Firm-level data comes from the Annual Survey of Industrial Firms released by the National Bureau of Statistics for the period 1998-2007. The dependent variable takes on the value of 1 if a firm is re-nationalized in year t, and 0 otherwise. We report marginal probabilities evaluated at the mean of the variables. We include but do not report industry, province and year indicators. Standard errors are clustered at the province level, and t-statistics are in the brackets below the coefficients.

	Probit Model	Probit Model	Hazard Model	Hazard Model
Firm-level Variables				
Log Assets	0.00375**	0.00380**	0.0539**	0.0543**
	(2.293)	(2.321)	(2.285)	(2.298)
State Share	0.333***	0.331***	4.254***	4.250***
	(14.42)	(14.44)	(13.29)	(13.36)
Square of State Share	-0.301***	-0.299***	-3.676***	-3.674***
	(-12.74)	(-12.77)	(-11.71)	(-11.77)
Leverage	0.0176***	0.0176***	0.261***	0.265***
	(2.908)	(2.894)	(3.142)	(3.172)
Labor Productivity	-0.00626***	-0.00636***	-0.0693**	-0.0697**
	(-2.759)	(-2.811)	(-2.096)	(-2.102)
Profitability	-0.00379	-0.00381	-0.0466	-0.0491
	(-0.577)	(-0.583)	(-0.615)	(-0.658)
Layoff	-0.0135***	-0.0131***	-0.151**	-0.146**
	(-3.149)	(-3.063)	(-2.222)	(-2.119)
Employment Share	0.0334**	0.0339**	0.474**	0.494**
	(2.059)	(2.083)	(2.216)	(2.318)
Political Connection	-0.00688	-0.00666	-0.122	-0.121
	(-1.075)	(-1.044)	(-1.291)	(-1.278)
Province-level Variables				
No Faction	0.0164**	0.0161**	0.247**	0.250**
	(2.444)	(2.461)	(2.449)	(2.511)
Institution		-0.00296*		-0.0500**
		(-1.907)		(-2.319)
Unemployment Rate		0.0118*		0.186**
		(1.650)		(2.054)
Share of SOE		0.104**		1.268*
		(2.032)		(1.704)
GDP Growth		0.0408		0.862
		(0.180)		(0.257)
Fiscal Status		-0.0796		-1.661
		(-1.136)		(-1.554)
Corruption		0.496		9.597**
		(1.464)		(2.067)
Province, Industry and Year fixed effects	Yes	Yes	Yes	Yes
Observations	14,886	14,886	14,886	14,886
Pseudo R-squared	0.124	0.125	0.0299	0.0305

Note: *, ** and *** indicate statistical significance at 10%, 5% and 1% levels.

Table 3. Differences between Factions

We run a regression similar to column 2 of Table 2, replacing "No faction" in Table 2 with three variables separately indicating the three factions. The default group is *No Faction*.

	(1)
Princeling	-0.0316***
	(-2.912)
Youth League	-0.0137*
	(-1.645)
Shanghai Group	-0.0194**
	(-2.056)
Controls	Yes
Province, Industry and Year fixed effects	Yes
Observations	14,886
Pseudo R2	0.127

Note: *, ** and *** indicate statistical significance at 10%, 5% and 1% levels.

Table 4. Factional Affiliation and Firm Performance

In this table we examine the possible relationship between provincial leaders' political status and the performance of firms located in the province. The dependent variable, *No faction*, takes on the value of 1 if a provincial leader belongs to a political faction in year *t*, and 0 otherwise. The independent variables are the within-province averages of firm characteristics in year *t*. Standard errors are clustered by provinces, and t-statistics are in the brackets below the coefficients.

	NO Faction
Average Firm-level Variables	
State Share	0.0334
	(0.399)
Assets	0.827*
	(1.646)
Labor Productivity	0.251
	(0.318)
Leverage	-0.0698
	(-0.270)
Profitability	-0.881
	(-1.444)
Layoff	-0.0171
	(-0.0280)
Employment share	-0.620
	(-0.849)
Political Connection	-0.0425
	(-0.0887)
Province-level Variables	
Institution	-0.0182
	(-0.803)
Unemployment Rate	-0.134
	(-1.317)
Share of SOE	-0.345
	(-0.575)
GDP Growth	0.145
	(0.0491)
Fiscal Status	0.158
	(0.243)
Corruption	5.987
	(1.070)
Year/Province fixed effects	Yes
Observations	240
Pseudo R-squared	0.421

Note: *, ** and *** indicate statistical significance at 10%, 5% and 1% levels.

Table 5. Robustness Checks

This table reports additional Probit regression results on the determinants of re-nationalization. The dependent variable takes on the value of 1 if a firm is re-nationalized in year t, and 0 otherwise. We report marginal probabilities evaluated at the mean of the variables. We include but do not report coefficients on firm-level and provincial-level controls, as well as industry, province and year indicators. Standard errors are clustered at the province level, and t-statistics are in the brackets below the coefficients. In Column 1, we add interaction terms between the year and regional (western, middle and eastern) dummies to our baseline regression specified in Eq. (1), in order to control possible region-specific trends. In Column 2, a firm is re-nationalized in year *t* if the government share increased by at least 10%. In Column 3, a firm is re-nationalized in year *t* if the government share increased by less than 50% to more than 50%. In Column 4, *No Faction* takes on the value of 1 if a provincial leader belongs to a political faction as classified by Shih *et al.* (2012). In Column 5, *No Faction* takes on the value of 1 if a provincial leader belongs to a strong political faction.

	(1)	(2)	(3)	(4)	(5)
	Control for region-year FE	Alternative definition I of renationalization	Alternative definition II of renationalization	Alternative definitions of factional ties I	Alternative definitions of factional ties II
No Faction	0.0217***	0.00385**	0.0141**	0.0119*	0.0126*
	(3.316)	(2.114)	(2.232)	(1.875)	(1.939)
Controls	Yes	Yes	Yes	Yes	Yes
Year, Province and Industry FE	Yes	Yes	Yes	Yes	Yes
Region×year FE	Yes				
Observations	14,886	15,297	15,714	14,886	14,886
Pseudo R2	0.126	0.152	0.105	0.123	0.123

Note: *, ** and *** indicate statistical significance at 10%, 5% and 1% levels.

Table 6. Effects of Renationalization on Firm Performance

We report the impact of re-nationalization on firm performance. The variable *Re-nationalized*, which is 1 if the firm is re-nationalized, is instrumented by the fitted probabilities obtained from a first-stage Probit model, which has *Re-nationalized* as the dependent variable and is reported in Panel B. The dependent variables in Panel A are *changes* in profitability, productivity and employment from one year before to one year after re-nationalization. We use three methods to estimate total factor productivity (TFP). The first is estimated by ordinary least squares (OLS). We call this TFP-OLS. The second is by the method proposed by Olley and Pakes (1996). We call this TFP-OP. The third method relies on the estimates of the factor shares at the two-digit industry level from Bentolila and Saint-Paul (2003), as in Bloom et al. (2012). We call this TFP-Index number. The control group is privatized firms that have not been re-nationalized during that period. In Panel A, we also report first stage F-test statistics of excluded instruments of the first stage probit regression to validate that the fitted probability is a strong IV for *Re-nationalized*. The variables in the first-stage Probit model but excluded from the performance regressions (in Panel A) are the political variables. Firm-level controls are: *Firm Size, State Share, Leverage, Labor Productivity, Profitability, Layoff,* and *Employment Share.* Provincial-level controls：*Government interference*，*Unemployment Rate*，*Share of SOE*，*GDP Growth* and *Fiscal Status.* Standard errors are clustered at the province level.

VARIABLES	(1) Labor/sale	(2) Labor/value-added	(3) Profitability	(4) TFP OP	(5) TFP OLS	(6) TFP Index number	(7) Leverage
Panel A: control for firm FE and year FE							
Post-renationalization	0.0535**	0.0309	-0.0160*	-0.0477**	-0.0408*	-0.0439*	0.0210***
	(2.498)	(1.263)	(-1.844)	(-1.970)	(-1.665)	(-1.810)	(3.412)
Firm FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Observations	21,866	21,083	21,902	21,034	21,050	21,050	22,030
R-squared	0.780	0.724	0.535	0.716	0.712	0.705	0.750
Panel B: control for firm FE, Industry FE×Year FE, Group Dummy×Year FE, and Initial firm-level characteristics×Year FE							
Post-renationalization	0.0745***	0.0674**	-0.0198*	-0.0827***	-0.0853***	-0.0806**	0.00184
	(2.752)	(2.128)	(-1.772)	(-2.614)	(-2.664)	(-2.551)	(0.229)
Firm FE	YES	YES	YES	YES	YES	YES	YES
Industry×Year FE	YES	YES	YES	YES	YES	YES	YES
Group Dummy×Year FE	YES	YES	YES	YES	YES	YES	YES
Initial firm-level characteristics×Year FE	YES	YES	YES	YES	YES	YES	YES
Observations	21,783	21,086	21,823	21,005	21,019	21,019	21,899
R-squared	0.792	0.735	0.567	0.723	0.719	0.713	0.753
Panel C: IV estimates							
Post-renationalization	0.110*	0.249**	-0.0870**	-0.182*	-0.222**	-0.183*	0.0674*
	(1.663)	(2.515)	(-2.560)	(-1.739)	(-1.977)	(-1.754)	(1.830)
Controls	YES	YES	YES	YES	YES	YES	YES
Observations	21,081	20,421	21,082	20,245	20,245	20,245	21,065
R-squared	0.757	0.523	0.295	0.440	0.362	0.422	0.104
First-Stage Probit on Re-nationalization							
No Faction	0.0187***						
	(2.733)						
Controls	Yes						
Observations	21,902						
R-squared	0.199						

Note： *, ** and *** indicate statistical significance at 10%, 5% and 1% levels.

Table 7. Exclusiveness Check: Factions and Resources

VARIABLES	(1) Dep. Var.: fiscal subsidy/own fiscal revenue	(2)
NO faction	0.00412	0.00366
	(0.658)	(0.614)
GDP per capita		-0.192***
		(-3.650)
Unemployment rate		-0.00197
		(-0.260)
Share of SOE		-0.114***
		(-3.421)
Province and Year fixed effects	Yes	Yes
Observations	248	248
R-squared	0.975	0.978

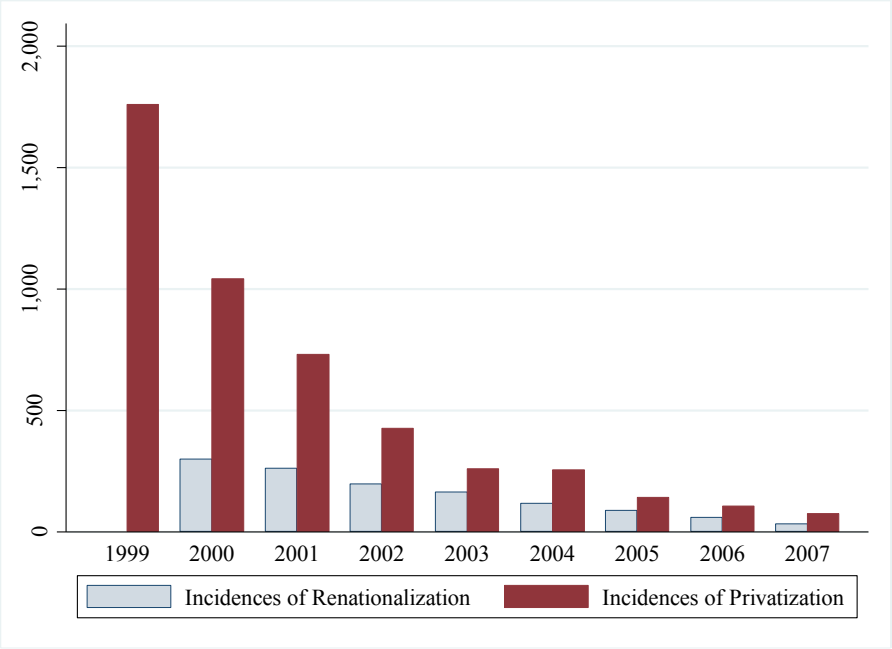
Table 8. Factions and Promotion

This tables reports factors that impact politicians' promotion. The dependent variable is a dummy which is one if the politician gets a seat in the politburo or the standing committee of the politburo.

	(1)	(2)	(3)	(4)
Unemployment Rate	-0.0928*	-0.0917*	-0.100**	0.0163
	(-1.833)	(-1.891)	(-2.044)	(0.239)
GDP Growth Rate	2.882**	2.845**	2.889**	1.166
	(2.227)	(2.318)	(2.352)	(0.635)
Princeling			0.167**	
			(2.128)	
Youth League			0.0861*	
			(1.793)	
Shanghai Group			0.221**	
			(2.503)	
No Faction		-0.123***		0.144
		(-3.101)		(0.521)
*No Faction*Unemployment*				-0.144**
				(-2.550)
*No Faction*GDP Growth*				2.407
				(1.446)
Province and Year fixed effects	Yes	Yes	Yes	Yes
Observations	248	248	248	248
R-squared	0.763	0.794	0.796	0.802

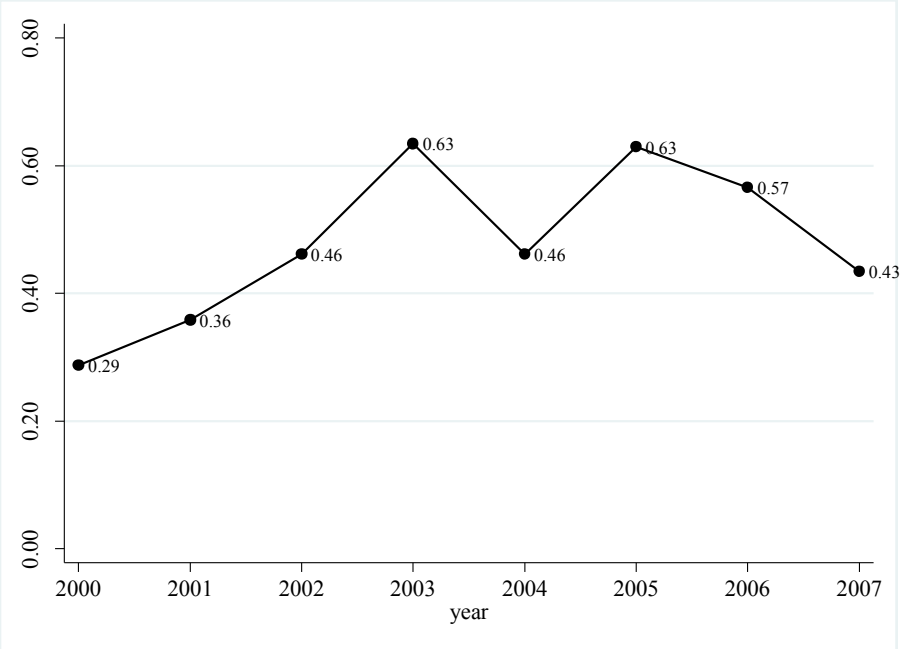
Note: *, ** and *** indicate statistical significance at 10%, 5% and 1% levels.

Figure 1. Incidences of Re-nationalization



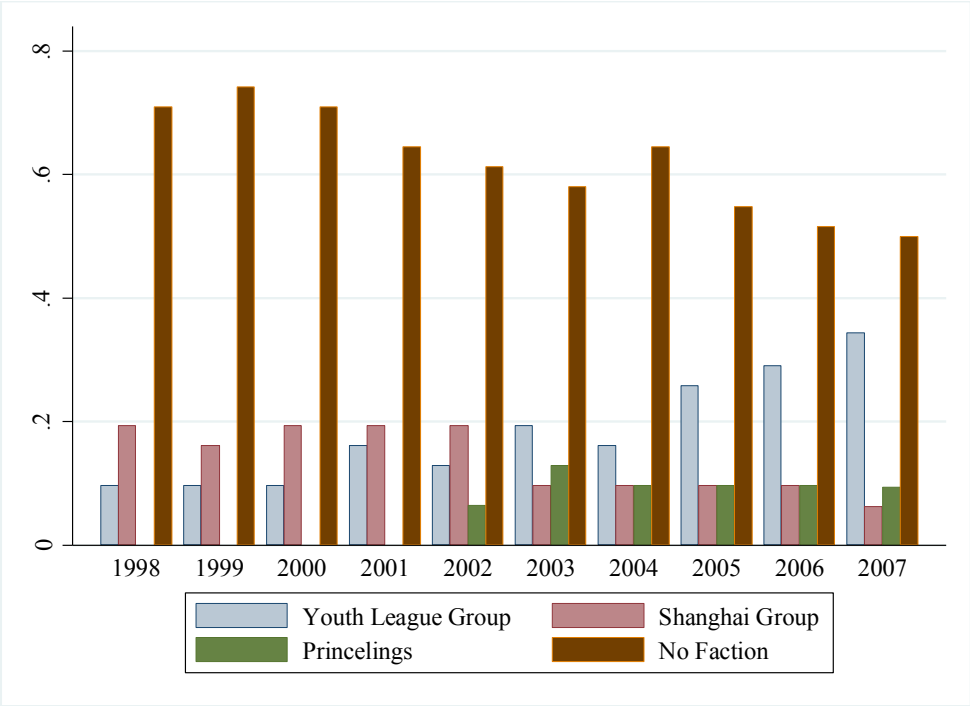
The graph displays the number of firms that were privatized or re-nationalized in each year during 1999-2007. Firm-level data comes from the Annual Survey of Industrial Firms released by the National Bureau of Statistics.

Figure 2. Incidences of Re-nationalization over Incidences of Privatization



The graph displays the ratio: the number of firms that are re-nationalized / the number of firms that are privatized in each year over the period 2000-2007.

Figure 3. Political Factions of Provincial Leaders



The graph displays the number of provincial leaders that belong to a certain political faction, using our own definition, each year.

Appendix A. Variable Definitions and Sources

Variable	Description	Sources
Re-nationalized	Dummy variable which takes on the value of 1 if a firm is re-nationalized in year *t*, and 0 otherwise.	ASIF
No faction	Dummy variable which equals one if the provincial party secretary does not belong to a faction of CCP.	Hand-collected
Assets	Annual assets in thousands of Yuan.	ASIF
Sales	Annual sales in thousands of Yuan.	ASIF
Profitability	Annual profit over annual sales.	ASIF
Labor Productivity	Annual sales per employee (in Log)	ASIF
Employment	Log of the number of a firm's employees.	ASIF
Leverage	The debt-to-asset ratio.	ASIF
State Share	Percentage of government stake in the firm.	ASIF
Employment Share	The firm's number of employees over the local county's total manufacturing labor force.	ASIF
Layoff	Reduction in the firm's employment after privatization (in Log).	ASIF
Political Connection	Dummy variable that takes one if the firm was previously under the direct control of provincial government.	ASIF
Institution	Constructed from survey data on the time spent by the firm management dealing with government officials; a higher index indicates less government interference in the corporate sector.	NERI-China Marketization Index
Unemployment Rate	Annual provincial unemployment rate.	China Statistics Yearbooks
Share of SOE	The number SOEs as a fraction of total number of firms in a province.	ASIF
GDP Growth	The growth rate of provincial GDP.	China Statistics Yearbooks
Fiscal Status	Transfers received from central government over expenditures of the provincial government.	China Statistics Yearbooks
Corruption	Graft cases filed per thousand people.	Procuratorial Yearbooks of China

Appendix B: Construction of the panel from the ASIF data

Construction of the panel from the ASIF data. In the dataset, every firm is given a unique firm code. A small number of firms may have changed their firm codes within the sample period but remained in the sample. To address this issue, we follow Brandt et al. (2012) and Yang (2015) to obtain unique firm codes based on the firm's name, zip code, telephone number, and founding year. We clean the data as follows. First, if the year *t* observation of a firm cannot be matched to any firm's observation in year *t*+1 based on the firm code, we try to find a firm with the same name in year *t*+1, and match them by giving the year *t*+1 observation the same firm code as the year *t* observation. Second, for those firms that cannot be matched by the code or name, we rely on the combinations of the zip code, telephone number and the founding year to match them. We delete firms with missing key information, i.e. assets, fixed assets, sales and employment. Table A-1 presents the frequency with which we can link the observations in different years for both SOEs and non-SOEs.

Table B-1. Evolution of the raw panel over time

Year	Total firms	Entrants	Incumbent, linked using		Exiting (in the next year)
			NBS ID	Other information	
1998	164,452				28,709
1999	161,439	25,696	130,863	4,880	27,672
2000	162,350	28,583	130,538	3,229	36,395
2001	170,780	44,825	117,526	8,429	24,356
2002	181,149	34,725	142,950	3,474	28,378
2003	196,204	43,433	146,605	6,166	51,295
2004	274,750	129,841	137,681	7,228	45,085
2005	271,819	42,154	226,675	2,990	25,819
2006	301,943	55,943	243,728	2,272	28,485
2007	336,742	63,284	271,629	1,829	

Note: Entrants are those that first appear in the sample in the specific year. Exiting means dropping out of the sample in the next year. The ASIF dataset includes all SOEs, and all non-state firms with sales exceeding five million yuan. Thus, a firm's entry year may be different from its establishment year. Similarly, a firm's exiting year may differ from its death year.

References:

Brandt, Loren, Johannes Van Biesebroeck, and Yifan Zhang, 2012. "Creative accounting or creative destruction? Firm-level productivity growth in Chinese manufacturing." *Journal of Development Economics 97*(2): 339-351.

Yang, Rudai, 2015. "Study on the Total Factor Productivity of Chinese Manufacturing Enterprises" (中国制造业企业全要素生产率研究). *经济研究 (Economic Research Journal, in Chinese) 2*: 61-74.