Special Deals with Chinese Characteristics

Chong-en Bai

Tsinghua University

Chang-Tai Hsieh

University of Chicago and NBER

Zheng Song [*]

Chinese University of Hong Kong

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Abstract

Chinese local governments wield their enormous political power and administrative capacity to provide "special deals" for favored private firms. We argue that China's extraordinary economic growth comes from these special deals. Local political leaders do so because they derive personal benefits, either political or monetary, from providing special deals. Competition between local governments limits the predatory effects of special deals.

1. Introduction

A standard explanation for the extraordinary economic growth in China over the last four decades is that this growth was driven by the gradual improvement of formal economic institutions. Advocates of this explanation point to the restoration of incentives to farmers and opening to foreign investment in the 1980s, the clean-up of the bad debts and centralization of the banking system in 1998, the quasi-privatization of state-owned firms in the 1998-2002 period, and accession to the WTO in 2001 as important reforms behind Chinese growth.[1]

While these policy reforms are undeniably important, this narrative sits uneasily with other pieces of evidence. Huang (2008) documents that many of the pro-market reforms of the 1980s were later reversed. It is still the case that there is no clear formal legal protection for private property in China, nor is there an independent judiciary that enforces contracts and adjudicates disputes. Acemoglu and Robinson (2012), drawing on the account in McGregor (2010), discuss the case of an entrepreneur who was arrested in 2003, allegedly for competing with a state owned firm, and jailed for five years without a trail or charges being filed. Formal rules and laws facing private business are still opaque and onerous. Many American companies, such as Google, Twitter, and Facebook, find their access to the Chinese market blocked, for reasons that are not immediately transparent. The World Bank's *Doing Business* Indicators has for many years ranked China near the bottom of the world in terms of the "ease of starting a business," roughly at the same level of countries such as Iraq and the Congo.

But how can economy with such poor institutions grow at the rate and for as long as China has? The answer, we suggest, lies in the set of *informal* institutions that emerged in China after the early 1990s. The key feature of these informal institutions is that successful private firms have access to special deals.

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[1]There is a large literature on these reforms. See Hsieh and Song (2015) for the quasi-privatization of the state owned firms, Brandt et al. (2017) for China's accession to the WTO, Lin (1992) for the early agricultural reforms, and Kashyap and Dobson (2006) for an assessment of the 1998 reforms of the banking sector.

As suggested by Acemoglu and Robinson (2012) and the World Bank's *Doing Business* indicators, formal institutions are bad in China. The only way for private firms to succeed in China is to obtain a special deal from a local political leader, which allows them to either break the formal rules or obtain favorable access to resources. This practice is common in countries with poor formal institutions, and China is no different.[2]

The essence of a special deal is that they are only available to some firms, and thus some of the benefits come at the expense of firms that are left out. In the case of China however, there are three reasons why the benefits of special deals may have exceeded the cost. First, Chinese local governments have enormous administrative capacity and use it to provide a "helping hand" to favored firms. This "helping hand" ranges from exemptions to regulations, lobbying the central government for the right to break rules, improving local infrastructure, providing land (and to a lesser extent credit) at below market prices, and blocking entry of other firms that threaten the profits of the favored firms. Some of this help – such as blocking competitors – lowers welfare, but much of it – such as exemptions to inefficient regulations – is probably growth enhancing.

Second, local political leaders behave as if they have high powered incentives to assist favored private firms. For example, the largest car company in China is a joint venture between General Motors and the City of Shanghai. Dunne (2011), a long time observer of China's automobile market, describes Shanghai's support for General Motors in the following way: "The commercial goal of selling more GM Buicks and Chevrolets in China becomes a political and economic campaign to enhance the power and might of the City of Shanghai. Think of it as Shanghai Inc. with the Mayor as the Chairman and CEO."[3] The benefits to local leaders from supporting the commercial interests of private companies can be political, if local leaders that show competence in supporting private business are promoted in the Communist Party hierarchy. The benefits can

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[2]Hallward-Driemeir and Pritchett (2015) documents the prevalence of the use of special deals in poor countries.

[3]Dunne (2011) pg. 11.

also be entirely monetary, ranging from tuition payments for their child to (hidden) equity stakes in favored private firms held by family members. Because of the high powered incentives to support private firms, a large and increasing number of Chinese firms benefit from the special deals. So the Chinese system is best described not simply as regime of special deals but one where there is almost "free entry" into special deals.

Third, a large number of local governments actively support private firms. Moreover, they compete ferociously with other local governments to attract and support their businesses. As described by McGregor (2010), "What is obvious for anyone who travels around the country is how much of the economy is driven by another factor altogether, a kind of Darwinian internal competition, that pits localities against each other....each Chinese province, city, county, and village furiously compete to gulp down any economic advantage they can lure their way."[4] Competition between local governments is crucial in limiting the predatory power of protected firms. A local government can block competitors of favored firms in its locality but has no ability to do so in other cities. Competition also gives firm owners options when faced with incompetent or predatory local governments.

In summary, China has "extractive economic institutions" – to borrow Acemoglu and Robinson (2012)'s pithy term – where political elites extract rents from the rest of society. But "extractive economic institutions" in China come with unique "Chinese characteristics" that has made a difference. First, local political elites extract rents by enabling favored firms to generate more profits in the first place. They can do this because of the enormous administrative capacity of local governments, and the resulting growth of local businesses enables local elites to extract even more rents. Second, local elites get personal benefits from these rents, and thus the local administrative apparatus is laser-focused on supporting favored firms. Third, thousands of local governments compete ferociously to attract and support firms, thus limiting the ability of an individual

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[4]McGregor (2010) pg. 175-176

local government to harm other businesses.

Understanding the Chinese system as a regime of special deals also clarifies the risks that China faces. Perhaps the main risk is that it relies on the discretion of local officials and their incentives to provide special deals. And here a central fact is the anti-corruption campaign that has been in place since 2014. While there is limited information on the crackdown, if local officials are motivated by private economic benefits, the crackdown on corruption will dampen their incentive to use their authority to grease the wheel for private firms. If special deals as practiced in China has been growth enhancing – as we suggest it has – the crackdown on corruption will result in *lower* growth. And here a key fact is that growth has slowed down considerably in China since 2014.

The paper proceeds as follows. We first provide narrative evidence on how special deals in China work. We then lay out a model of special deals to examine how the "Chinese characteristics" – high state capacity, ability to obtain private benefits, and local competition – determine the magnitude of special deals and their effect on economic growth. The next section uses data from multiple sources – the Chinese Annual Survey of Industrial Firms, the Economic Censuses, firm registries from the State Administration of Industry and Commerce, micro-data on land sales, and a survey of politically connected firms – to provide suggestive evidence on the nature of special deals, that firms grow when they have access to special deals, and that local governments support their favored local firms. The last section discusses the risks inherent in an economic institution based on access to special deals.

2.   How do Special Deals Work in China?

We begin by describing how a specific local government supports private business. We visited a small city in Southern China in 2013 where we had extensive discussions with local officials and private businesses.[5] It was abundantly clear

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[5]We agreed to not identify the city to have frank discussions.

that the central focus of the local government was to attract and support private businesses. There were nine Vice-Mayors in the city and most of their time was spent prospecting for new businesses to set up in the city and solving the problems for a subset of local private firms already in the city. We estimate that each Vice-Mayor was the point person for about 30 private firms. This was what all the Vice Mayors spent their time on, even if their official portfolio had nothing to do with business development. Figure 1 replicates a document the city's Vice-Mayor of *Education* handed to us, as the Vice-Mayor proudly explained how the document describes his main job. The Vice-Mayor for Education is officially in charge of local schools, but what his office actually does is "actively look for quality prospects" and arrange special deals for these businesses. We witnessed a monthly meeting organized by the Mayor and Party-Secretary with the nine Vice-Mayors to coordinate their activities supporting private business. We estimate that about 200 private businesses in this city, most of them the city's largest employers, have "special deals" negotiated by the Vice-Mayors, Mayor, or even the local Communist Party Secretary.

What we witnessed in this city is evident to anyone who has done business in China, that a central priority of Chinese local governments is to attract and support private businesses. We illustrate the consequences in two specific industries: aluminum and automobiles. We pick these two industries because these two sectors were dominated by state owned giants in the late 1990s. Furthermore, as two of the "strategic and pillar industries," entry into these two sectors by private firms was illegal. Yet, by the late 2000s, many private firms had entered into the two industries (and the other "pillar" industries reserved for state owned firms). Many of these private firms experienced substantial growth, and the market share of state owned firms had declined substantially.

We begin with the aluminum market in China. In the early 2000s, this market was dominated by the China Aluminum Corporation (Chinalco). Chinalco is one of the fifty largest state owned companies owned by the Chinese central government and had a 98% share of the aluminum market in China in the early

Figure 1: Work Program of a Vice-Mayor of *Education*

主动出击，寻找优质意向投资者	Actively look for quality prospects
初步洽谈，了解意向投资者基本情况	Initial discussion to learn about investor
深入研究，对投资项目进行可行性分析	Feasibility Analysis
考察服务，为企业物色合适的厂房或土地	Identify land and other needed services
领导审批	Approval by Vice-Mayor
项目正式签约	Sign agreement

Note: The flow-chart in Chinese was given to us by the Vice-Mayor of Education of a small Chinese city. The translation in the right column is ours.

2000s. Chinalco had two main assets. First, the Central government passed a law that gave the company exclusive rights to purchase all bauxite deposits in China when the company became a publicly listed company in 2001. Second, no other company was legally allowed to produce aluminum. Yet, by 2008, the market share of Chinalco dropped to less than 50 percent, due to the entry of large private firms in the aluminum market. One of these companies is the East Hope (Sanmenxia) Aluminum Company, a subsidiary of the East Hope Group. The East Hope Group was created in 1995 in Sichuan as one of the four companies by the breakup of the Hope Group. At the time, the East Hope Group's main business was as a processor and distributor of animal feed.

The East Hope Group decided to expand into aluminum (and heavy metals more generally) in the early 2000s. McGregor (2010) tells the story of how the company understood the Achilles heel of Chinalco was that it's exclusive right to purchase Chinese bauxite was with the Chinese central government, and

not with the local governments with the bauxite mines. East Hope Group was able to make a deal with the local government of Sanmenxia, a small city in western Henan Province with large deposits of bauxite, to purchase the bauxite. Chinalco fought East Hope the local government of Sanmenxia had enough political clout to make the deal stick. With the support of the local government of Sanmenxia, the East Hope Group started to produce aluminum in 2005. Many other private companies in Henan followed a similar path and had taken away half of Chinalco's market share by 2008. When asked about the key to his success in the aluminum industry, East Hope's owner said: "Forgive me for being frank, but local officials, even corrupt ones, need to have political achievements."[6]

Turning to the automobile industry, this was also an industry dominated by state owned firms in the early 2000s, and with similar restrictions on entry by private firms. The largest car producer in China is Shanghai-GM, a joint venture between GM and the Shanghai Automobile Industrial Company (SAIC). SAIC is a publicly traded firm with a majority stake held by the Shanghai local government. SAIC also operates a joint-venture with Volkswagen (Shanghai-Volkswagen) as well as a stand-alone car company. GM's strategy in China was to use the political power of its partner SAIC to obtain exclusive rights to sell "large" sedans (with engines larger than 2500cc), and the local government of Shanghai worked hard to protect GM's monopoly power. As Dunne (2011) put it, "car-building Chinese cities act almost like sovereign countries, building a fortress around their home markets, while working very hard to export their cars to other Chinese cities," and Shanghai was no exception to this behavior.[7]

However, GM's strategy of exploiting its monopoly power ran into resistance. The third car it wanted to sell in China was a replica of small car made by GM's Korean subsidiary, the Daewoo Matiz. However, another Chinese company, Chery based on the small city of Wuhu, started to sell exactly the same car a full 6 months before GM was ready to sell the rebranded Daewoo Matiz. Chery

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[6]McGregor (2010) pg. 226
[7]Dunne (2011) pg. 15

had managed to get hold of the blueprints of the Daewoo Matiz and beat GM-Shanghai to the market. Chery was started in 1996 by an engineer Yin Tongyao from a state owned company FAW in northern China and the then Wuhu Vice Mayor Zhan Xialai. Dunne (2011) tells the story of the proposed division of labor between Mr. Yin and Mr. Zhan. The Vice Mayor reportedly told the Mr. Yin: "You let me take care of the licenses; you just focus on getting some cars built here."[8]

With the political support of the Wuhu local government, Chery obtained the land, capital, and infrastructure it needed. But getting access to the license from central government to make cars took longer and was less straightforward. Initially the Vice Mayor was only able to get a license to make car engines for Chery. A car engine permit was readily available because car engines was not one of the "strategic" sectors. Chery then used this license to buy a shuttered Ford engine factory in the UK and reassembled the engine assembly line in Wuhu. The Vice Mayor then lobbied the Central Government for a license to make cars, which the Central Government agreed to but only under the condition that the cars were only to be sold in Wuhu. According to the Vice-Mayor his next step was to enlist the support of his political patron in the Central Government, and they decided to pressure Shanghai Automobile (GM's partner in Shanghai) to take a 20 percent equity stake in Chery. Dunne (2011) reports that SAIC resisted the move, but succumbed to the political pressure from Wuhu's Vice Mayor's political patron. So in 2000 SAIC took a 20 percent equity share in Chery, which the Vice Mayor then used to lobby the central government for the license to sell cars throughout China.[9] This time they were successful, and one of the initial products of Chery was the replica of GM's Korean car.

Despite Chery's license to sell cars throughout China however, it has found it very difficult to sell in the Shanghai market and in other Chinese cities where there is a local car company. Chery's sales are primarily outside of China, where

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[8]Dunne (2011) pg. 129

[9]Essentially Chery's argument was along the lines of "SAIC has the license to make cars. Since we are owned by SAIC, we should have the same license that SIAC has."

presumably it does not have to compete with companies that have special deals with the local government. GM-Shanghai is formally registered as a foreign firm in China and is the largest car manufacturer in China. It has been successful financially primarily because it has used the political power of the Shanghai local government to protect its local market. Chery's local market – the city of Wuhu – is simply too small for a similar strategy to be viable, and thus Chery primarily sells outside of China. Shanghai-GM, despite being the largest car producer in China, only serves the domestic Chinese market.

Finally, we return to the case of the entrepreneur discussed by Acemoglu and Robinson (2012) who was jailed for five years for competing with a state owned firm. The entrepreneur Dai Guofang had established a large steel company called Jiangsu Tieben in Changzhou City in 2002. However, as was the case with the aluminum and automobile industries, the steel industry was also one of the "pillar industries" where entry by large private firms was forbidden. Dai Guofang had gotten around this restriction by "breaking up" Jiangsu Tieben into 22 different companies, each of which fell below the official size threshold, and obtained a separate license for each of the 22 companies. Jiangsu Tieben was shuttered in 2003 on the orders of the government and Mr. Dai was arrested and thrown in jail. Acemoglu and Robinson (2012) use this episode to illustrate the effect of Chinese extractive institutions, but there is an interesting epilogue to Mr. Dai's story. After Mr. Dai was released from prison in 2008 he created the Jiangsu Delong Nickel Company, this time with the support of a different local government in Jiangsu.[10] Mr. Dai's new company is currently (in 2019) China's largest producer of nickel-iron alloys.[11]

We take away the following points. First, formal institutions are bad in China. Clearly, there was an effort to protect favored firms in the aluminum and automobile industries. Second, support of local governments, such as the one in Southern China we described earlier, are crucial to the success of the East Hope

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[10]Jiangsu Delong is located in Yangcheng City. See http://www.dlnis.com/About-Us/Profile.asp, accessed on January 29, 2019.

[11]Jiangsu Delong also operates several nickel-iron alloy plants in Indonesia.

Group and Chery. Without the support of the local government, Chery would not have been able to obtain the capital or land needed. And support of the government was critical for both companies to circumvent the rules imposed by the Central Government to protect the incumbent firms (the state owned firm in the aluminum industry and GM in the car industry). Third, the story of Chery illustrates how competition between local governments limited the ability of GM-Shanghai to exploit its monopoly power. And the story of Mr. Dai illustrates the importance of competition in giving options to entrepreneurs whose deals fall through in other cities. Finally, the allusion to corrupt local officials by East Hope's CEO hints that corruption may be important in providing local officials with an incentive to support local firms.

3. A Model of Special Deals

In this section, we lay out a model of "special deals" in an environment with "bad" formal institutions. The key idea is that a subset of firms benefit from special deals that other firms do not have access to. We will examine the determinants of the benefits that favored firms obtain, how many firms get access to deals, and the effect of special deals on the real wage.

Preferences are given by

$$ U = \left(\int_0^1 C_z^{\frac{\sigma-1}{\sigma}} \, dz \right)^{\frac{\sigma}{\sigma-1}}. $$

where $z \in [0,1]$ indexes the product. There are two potential technologies for each product given by $(1-\delta)e^{A(1-z)}$ ("A" technology) and $(1-\delta)e^{Bz}$ ("B" technology) where $0 < \delta < 1$ represents the TFP loss from "bad" institutions. We view δ as a reduced form representation of the productivity loss due to the thicket of official rules and regulations behind China's poor ranking in the World Bank's *Doing Business* Indicators. Output is the product of the chosen technology and

labor.[12] Given preferences and the production function, the profit maximizing price is the standard markup over marginal cost.

Consider first a benchmark where the chosen technology is the product of $1 - \delta$ and $\max\{e^{A(1-z)}, e^{Bz}\}$. Define $\tilde{z}$ as the cutoff where the A technology is chosen for $z < \tilde{z}$ and B is chosen for $z > \tilde{z}$. This cutoff is given by:

$$\tilde{z} = \frac{A}{A + B}.$$

After imposing profit maximization and labor market clearing, the real wage ω is then:

$$\omega = \frac{\sigma - 1}{\sigma}(1 - \delta) \left(\int_0^{\tilde{z}} e^{A(1-z)(\sigma-1)} dz + \int_{\tilde{z}}^1 e^{Bz(\sigma-1)} dz \right)^{\frac{1}{\sigma-1}}.$$

where the cutoff product $\tilde{z}$ is given by the equation above.[13]

Now consider a special deal regime where some firms get benefits and other firms do not. The political leader provides two types of benefits to a subset of the A firms. First, local political leaders in China help favored firms circumvent burdensome rules. These can take the form of firm specific exemptions to official rules and the implicit sanctioning of violations of regulations (such as the East Hope Group's foray into the aluminum industry). We model this as an increase in firm TFP from $(1 - \delta)e^{A(1-z)}$ to $(1 - \delta + \gamma)e^{A(1-z)}$ where $0 < \gamma < \delta$. We interpret γ as capturing the ability of the local government to alleviate the effect of poor overall institutions for specific firms. For example, γ would be low in places where the local bureaucracy is incompetent or where the local political leader has other priorities.

A second benefit is that potential competitors of the favored firms are blocked from the market. Chery found it very difficult to sell in Shanghai because the three dominant local automobile manufacturers (SAIC, Shanghai-GM, and Shanghai-

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[12]The chosen technology for product z is either $(1 - \delta)e^{A(1-z)}$ or $(1 - \delta)e^{Bz}$.

[13]Many readers will recognize the model as Dornbusch et al. (1977) with free labor mobility between two countries.

Volkswagen) are supported by the City of Shanghai. The only taxis in Beijing is the Hyundai Elantra made by Hyundai's joint venture with the City of Beijing. The only taxis in Shanghai is the Volkswagen Santana made by Volkswagen's joint venture with the City of Shanghai. There is no formal law or regulation that Beijing taxi companies have to use Hyundai cars or Shanghai cab companies have to buy Volkswagen cars, but taxi companies fully understand the incentives of the local taxi regulator.

To capture this idea, suppose all A firms $z \in [0, z_c]$ are favored by the political leader (we will endogenize z_c shortly). If $z_c < \tilde{z}$, then TFP of all A firms $z \in [0, z_c]$ exceeds the TFP of the corresponding B firms. So blocking has no effect and as long as $\gamma > 0$ the special deal regime raises the real wage. However, if $z_c > \tilde{z}$, then consumers get access to worse technologies for products $z \in [\tilde{z}, z_c]$. In this case, the effect of special deals on the real wage is ambiguous, as it depends on the benefit of $\gamma > 0$ for firms $z \in [0, z_c]$ relative to the loss from blocking better B technologies for $z \in [\tilde{z}, z_c]$.

A third institutional feature of special deals in China is that they are provided by local governments that compete ferociously with each other. Suppose that firms with the A technologies are in city A and firms with B technologies in city B. Further, assume that workers freely move between the two cities, which implies that in equilibrium the real wage is the same in the two cites. There are two effects of local competition. First, we now have two cities supporting local firms instead of only one. So some B firms also get supported by their local government. Second, a local government can only protect their firms in their locality but has no power in the other locality. Going back to the example of the automobile industry, GM was the favored firm in Shanghai but it did not have any preferences in Wuhu (or in any Chinese city outside of Shanghai).

To isolate this second effect, suppose the political leader in A supports local firms, but the one in B does nothing to support the B firms (we can easily relax this assumption). We assume $z_c > \tilde{z}$ and that workers can freely move between the two cities. The key difference is that the political boss in A can only block

competitors in her jurisdiction, but has no power in B. These two assumptions limit the loss due to blocking. Intuitively, when city A blocks better technologies produced in city B, this raises the cost of living in city A and thus lowers the real wage in city A relative to B (for a given relative nominal wage). Workers then reallocate from A to B and the share of products made by A falls until the real wage is equalized in the two cities.[14]

Why would a political leader choose to provide special deals to some firms instead of reducing δ which benefits all firms. One answer is that the political leader can extract rents from providing special deals whereas she has limited ability to do so if all firms are treated equally. To capture this idea, we assume firms with special preferences pay a share $\beta^{\sigma-1}$ of their profits to the political leader (and non-favored firms do not pay). This assumption implies that, all else equal, the political leader prefers to help more profitable (and presumably larger) firms.

If the political leader can get a share of the firm's profits if she provides the firm with a special deal, why doesn't the local leader make the deal available to all firms? One answer is the nature of a special deal regime is that the deals have to be individually negotiated. Each firm that has a special deal comes with a cost to the political leader, either in the form of political capital or in the time her bureaucracy spends. This is one way to view the fact that the Vice-Mayors in the city we described work long hours negotiating deals and solving problems for the favored firms.

We capture this last idea by assuming each special deal entails a fixed cost given by $\left(\frac{e^{FA}}{w}\right)^{\sigma-1}$. The political leader will therefore provide favors to firms when her return exceeds the fixed cost. Profits of the marginal firm z_c is proportional to $\left(\frac{(1-\delta+\gamma)e^{A(1-z_c)}}{w}\right)^{\sigma-1}$. After equating the political leader's profits from helping the marginal firm to the fixed cost, we get the following expression for

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[14]The online Appendix lays out the details of the model with two cities.

z_c:

$$z_c = \frac{\ln\left[\beta\left(1 - \delta + \gamma\right)\right]}{F\,A}.$$

So the political leader provides deals to the most productive firms $z \in [0, z_c]$. The number of firms with special deals z_c is larger when the political leader gets more private benefits (β is larger), the local government has more capacity (γ is larger) and can thus provide more assistance, and when the fixed cost F is low.

The key variables that determine the number of firms with access to special deals and their effect on the real wage are β ("corruption"), γ ("state capacity"), and local competition. Figure 2 illustrates the effect on the real wage for different values of these parameters. It is useful to distinguish the following cases:

- **Zero Corruption**: This is simply the baseline economy. Here the degree of local competition and state capacity does not matter. Even when the local government has high capacity, this is not used because the political leader has no incentive to help.

- **Low Capacity and High Corruption**: The top panel in Figure 2 illustrates the effect of special deals on the real wage when $\gamma = 0$ for different values of β. Here the only effect of more corruption (higher β) is to increase the number of firms that are protected from competitors. This effect is attenuated with local competition (this is the case labeled "two cities") because workers move from city A to B in response to higher costs in A. Still, the effect of special deals on the real wage is either nothing (for low levels of β) or negative (for high levels of $beta$).

- **High Capacity and High Corruption**: The bottom panel of Figure 2 presents the case when local governments also alleviate bad institutions for favored firms.[15] So favored firm get two benefits: a boost in TFP and protection from competitors. Here, starting from low levels of β, more corruption *in-*

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[15]Figure 2 assumes $\gamma = 0.15$.

Figure 2: Effect of Special Deals on the Real Wage

Low State Capacity (γ=0)

High State Capacity ($\gamma = 0.15$)
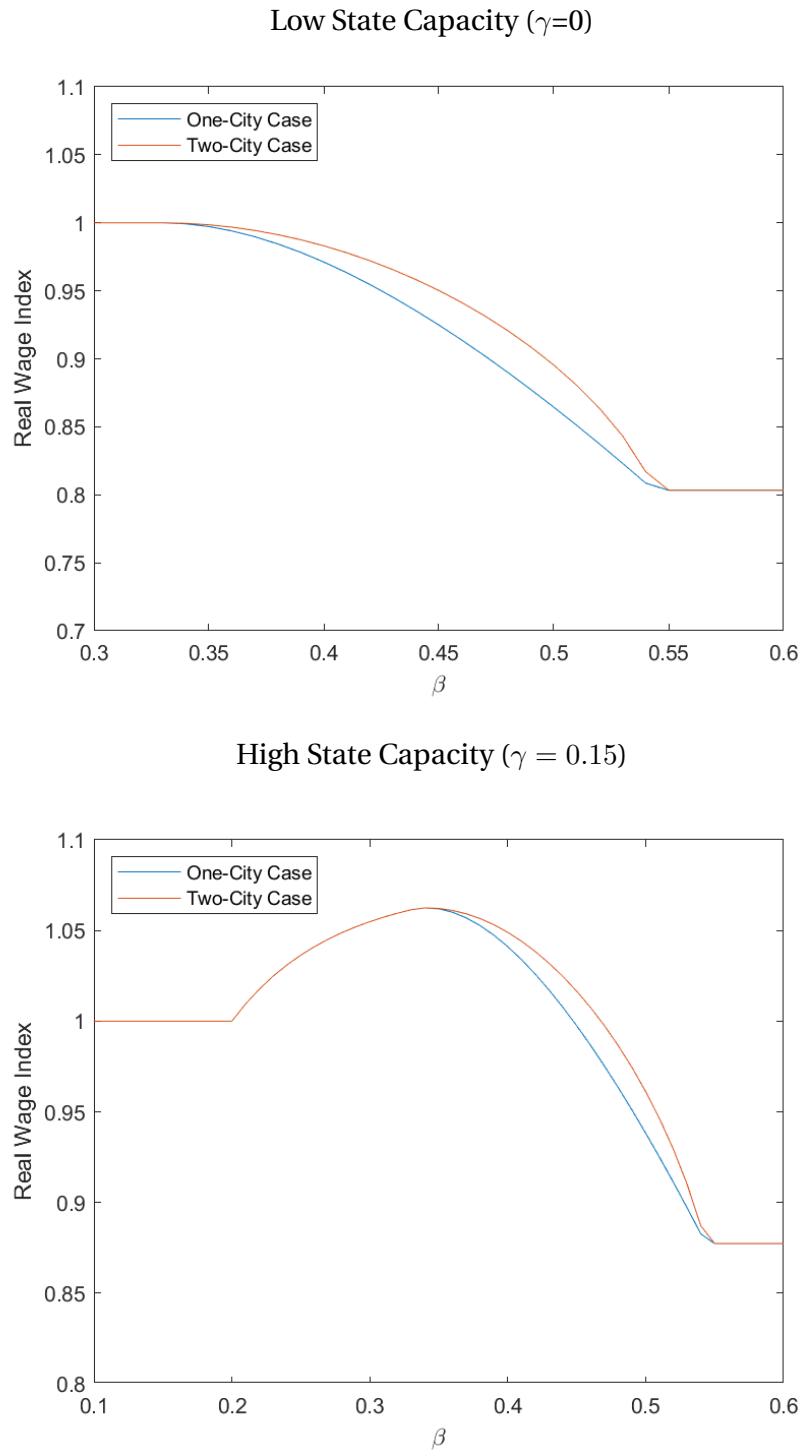
Note: Figures present the real wage relative to the benchmark where $\beta = 0$ and $\gamma = 0$. β is the political leader's share of firm profits. γ is the increase in TFP in the "favored" firms.

creases the real wage. Intuitively for low levels of corruption, an increase in β increases the number of favored firms. These firms benefit from higher TFP, and these are already the firms with the best technology so there is no negative effect from blocking better competitors. Beyond the "optimal" level of corruption (in the figure around $\beta = 0.35$), further increases in β *lowers* the real wage. Beyond the "optimal" level of corruption, the negative effect of blocking more competitors outweighs the TFP boost of the marginal favored firms. And here, as in the "low capacity" case, the negative effect is attenuated with competition between cities.

The model is of course highly stylized, and can be extended in many directions. Here we mention three. First, we assume perfect allocation of labor within a city. We can extend the model to allow for other resources such as land and capital, and a benefit the local leader can provide is access to local resources. The aggregate effect depends on whether preferential access to resources improve or worsen the allocation of resources. In the next section we will examine the extent to which favored firms also obtained preferential access to land and capital.

Second, another benefit of local competition is that it gives options to firms that find themselves in cities where the local leader is incompetent or more generally where an entrepreneur does not get the support she needs. The story of Dai Guofeng, who after trying several times was able to find support for his heavy metals company in a different city, illustrates this. It would be easy to extend the model to allow firms to move between cities and locate in the city that gives them the best deal.[16]

Third, the only cost of corruption in the model is the potential loss of better products.[17] The model can be extended to consider other losses. For example, the model is static, but if firms also make a dynamic investment decision, their

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[16]We have also assumed that a firm who gets a special deal wants the special deal. We can also relax this assumption.

[17]corruption also redistributes profits from the firm's owner to the politician, but this has no effect on the real wage.

incentive to invest is lower because a share of their profits goes to the political leader. On the other hand, if the political leader indirectly owns some of the equity (and we will provide some evidence later in the paper that this might be the case), then she has the incentive to maximize the present discounted value of the flow of profits of the firm.

4. Growth with Chinese Characteristics

The period between the early 1990s and 2008 before the onset of the global financial crisis was one of the highest growth episodes in recent Chinese history, with GDP growth averaging 10% per year. We argue that this growth was driven by the emergence of a special deal regime best characterized as a "high capacity and corrupt" regime. We present three types of evidence consistent with this interpretation. First, we present aggregate evidence of the growing importance of large firms, particularly of large conglomerates. Second, we present direct evidence of political ties and preferences of successful firms. Third, we provide evidence that localities block better firms from selling into their markets.

4.1. Growth of Large Firms and Conglomerates

The model described earlier assumes the incentive to provide special deals is that the local leader gets a share of the firm's profits. This assumption implies that all else equal, political leaders prefer to provide deals to larger firms. Furthermore, if part of the special deal is access to the political leader's γ technology, then large firms will gain relative to the other firms as a consequence of the availability of special deals.

We thus begin by showing the change in the importance of large firms in China. Table 1 shows the output share of firms in the top 1% firms in the employment size distribution. The left panel presents this information for firms in the industrial sector in 1998, 2002, and 2007. The right panel shows this statistic

Table 1: Sales Share of Top 1% Firms

Industrial Firms		Non-Agricultural Firms	
1998	25.2%	1995	31.6%
2002	28.9%	2004	37.5%
2007	33.3%	2008	45.1%

Source: Industrial Firms from Survey of Industrial Production. Non-Agricultural Firms from Economic Census.

for all non-agricultural firms in 1995, 2004, and 2008. The sales share of the top 1% firms in the industrial sector increased from 25% to 33% between 1998 and 2007. For the broader non-agricultural economy, the sales share of the top 1% firms increased from 31% to 45% between 1995 and 2008.[18]

But the largest firms in the Industrial Survey and Economic Census do not fully capture the extent to which large firms increasingly dominate the Chinese economy. Take the East Hope Group. East Hope is one of the four companies created in 1995 by the split-up of the Hope Group. The original business of the East Hope Group is animal feed processing and distribution. But as we described in the previous section, the company is now one of the largest aluminum producers in China. By 2015, there were a total of 213 firms in the East Hope Group, one of which is the East Hope (Sanmenxia) Aluminum Company we discussed earlier. The majority of these firms are in the animal feeds or heavy

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[18]The data from the industrial sector is the micro-data of the Chinese Survey of Industrial Production. This data is a census of all state owned industrial firms and private firms with more than 5 million RMB in sales. The size threshold for private firms changed to 20 million RMB in 2011. We do not use the micro-data from the Survey of Industrial Production after 2007 because of the change in the sampling frame. (We do not have the micro-data for 2008-2010). The data for non-agricultural firms is from the micro-data of the 1995, 2004, and 2008 Economic Censuses.

metals industry.[19] The Anbang Group is another example of a Chinese conglomerate that has grown. The original company Anbang Insurance was founded in 2004. By 2015 Anbang Insurance had controlling stakes in 94 companies.

The largest subsidiaries of the two conglomerates are joint with other companies, primarily state owned firms. The joint ventures in the animal feeds sector are all outside of East Hope's home province of Sichuan. And the majority of the companies in the heavy metals industry are joint ventures with state owned firms. One interpretation of this fact is that East Hope uses joint ventures with state owned firms to buy access to special deals. The average equity share of state owned firms in the joint ventures with East Hope in the animal feeds sector is 28.6%. The equity share of SOEs of the joint ventures in heavy metals is 53.2%. We interpret this number as a rough proxy of β in the model – the share of profits that East Hope has to give up in exchange for special deals outside of its core locality and business.

Anbang's subsidiaries follow a similar pattern. For example, one of Anbang's subsidiaries is the Chengdu Rural Commercial Bank. Anbang Insurance is the controlling shareholder of this bank. The other shareholders of Chengdu Bank are 10 local state owned firms (from Chengdu) and 11 holding companies. Chengdu Bank itself owns 40 subsidiaries, all of them financial institutions located in other cities in Sichuan Province and all of them jointly owned by other local state owned firms and holding companies.

We use the firm registration records from China's State Administration of Industry and Commerce (SAIC) to document systematically the emergence of conglomerates such as the East Hope and Anbang Groups. This data is a universe of all registered firms in China, and the data is unique in that it provides information on the owners. The owners can be another firm, a holding shell, or a private individual. Importantly, as long as the shell company is registered

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[19]A small number of firms in the East Hope Group are real estate and finance companies. The numbers in this and the following paragraphs are based on the ownership records from the State Administration of Industry and Commerce. We provide more details on this data later in this section.

Table 2: Average Number of Firms of Chinese Conglomerates

	1995	2015
Top 100	509	15,322
Top 500	115	5,979
Top 1000	61	3,120

Source: Firm Registry of State Administration for Industry and Commerce. Entries are average number of firms per conglomerate among the 100, 500, and 1000 largest conglomerates in 1995 and 2015.

in China, the SAIC data identifies the owners of the holding shells, and these owners can be individuals or (as is frequently the case) other holding shells.[20] But there is very limited economic information – the only information available is the firm's registered capital. We identify conglomerates as groups of firms with common owners. Table 2 presents the average number of firms in the largest Chinese conglomerates in 1995 and 2015. The average number of firms of the largest 100 conglomerates increased from 500 to more than 15 *thousand* from 1995 to 2015. Among the 1000 largest conglomerates, the average number of firms rose from 60 to more than 3 thousand over the same time period.

Table 3 shows that not only has the size of the largest conglomerates increased, but the ownership structure of the conglomerates has also changed. The table shows that share of the subsidiaries (all firms outside of the original core company of the conglomerate) of the conglomerate that are joint ventures with other firms. Among the top 1000 conglomerates in 1995, about 30% of the conglomerates subsidiaries were joint ventures. By 2015, the the share of joint-ventures was more than 80%.

The evidence indicates that the largest Chinese conglomerates have grown

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[20]We have no information on shell companies in the SAIC data that are registered outside of China.

Table 3: Jointly-Owned Subsidiaries of Chinese Conglomerates

	1995	2005
Top 100	39%	82%
Top 500	25%	85%
Top 1000	30%	81%

Source: Firm Registry of State Administration for Industry and Commerce. Entries are the weighted percent of subsidiaries of the 100, 500, and 1000 largest conglomerates that are jointly owned with other companies. Weights are the firm's registered capital.

by creating joint ventures with other companies. We interpret this pattern as an increase in β that makes possible the growth of these firms. East Hope entered into joint ventures with state owned firms outside of Sichuan to "buy" access to the political ties of these firms. Anbang entered into joint ventures with state owned firms in Chengdu when it created the Chengdu Rural Commercial Bank, again presumably to obtain access to that market.

Ownership of the conglomerate's core firm also becomes shared with other parties. Let's go back to the original company of the Anbang Group (Anbang Insurance). The company was created in 2004 with eight investors, two of which are state owned firms and six are holding shells.[21] By 2015 the equity share of the eight original investors had dropped to 19% and the new owners are a complex web of holding companies.

Figure 3 illustrates the ownership structure of Anbang Insurance in 2015. Anbang Insurance is the dark circle in the middle and the circles with other colors represent the owners. We further identify different types of owners by the color – gray for holding shells, white for state-owned firms, and open circles

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[21]The state owned firms are (15%) and Sinopec (7%). Shanghai Automobile is owned by the city of Shanghai and GM's joint venture partner discussed earlier. Sinopec is one of the three centrally owned oil companies created by the breakup of the Ministry of Petroleum in the late 1990s.

for individual owners. The circles immediately connected with the black circle represent the immediate owners of Anbang Insurance. In 2015, Anbang Insurance had 39 owners, two of which are state owned firms (white circles) and 37 of which are holding shells (gray circles). And every holding shell in turn is owned by other holding shells, most of which in turn are owned by other holding shells, and so on.

Ownership of Anbang Insurance is now more diversified, but it is also clear is that the current owners (the individuals represented by the open circles in Figure 3) have worked really hard to hide their ownership of Anbang behind a series of holding companies. This pattern suggests that Anbang's original shareholders may have grown the company by sharing equity of its core companies in exchange for favorable treatment. We would need to know the price at which the original investors sold their equity stake to know for sure whether this was the case, but what seems clear is that Anbang's new owners have gone to great lengths to hide their ownership of the company.

## 4.2. Political Ties and Preferential Treatment

We now turn turn to more direct evidence of links of ties between political leaders and firms. We begin by using the micro-data of a survey of private firms that are members of the Chinese National Association of Industry and Commerce.[22] The survey identifies whether the firm's owner is a member of the local People's Congress or Political Consultative Committee (PC/PCC) so we use this information to measure the relationship between PC/PCC membership and firm characteristics. About 30-40% of the firms in the survey are owned by PC/PCC members, and this ratio is roughly constant over the years of the survey (1997 to 2012).[23]

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[22]The members of this association are generally large and politically connected firms. For example, average sales in 2008 in the survey are about 9 times larger than average sales in the 2008 Economic Census.

[23]An average 24.4% of the firms in the survey are owned by members of county or below PC/PCC, 12.6% by prefectural level PC/PCC, and 2.7% by provincial or above PC/PCC.

Figure 3: Owners of Anbang Insurance, 2015
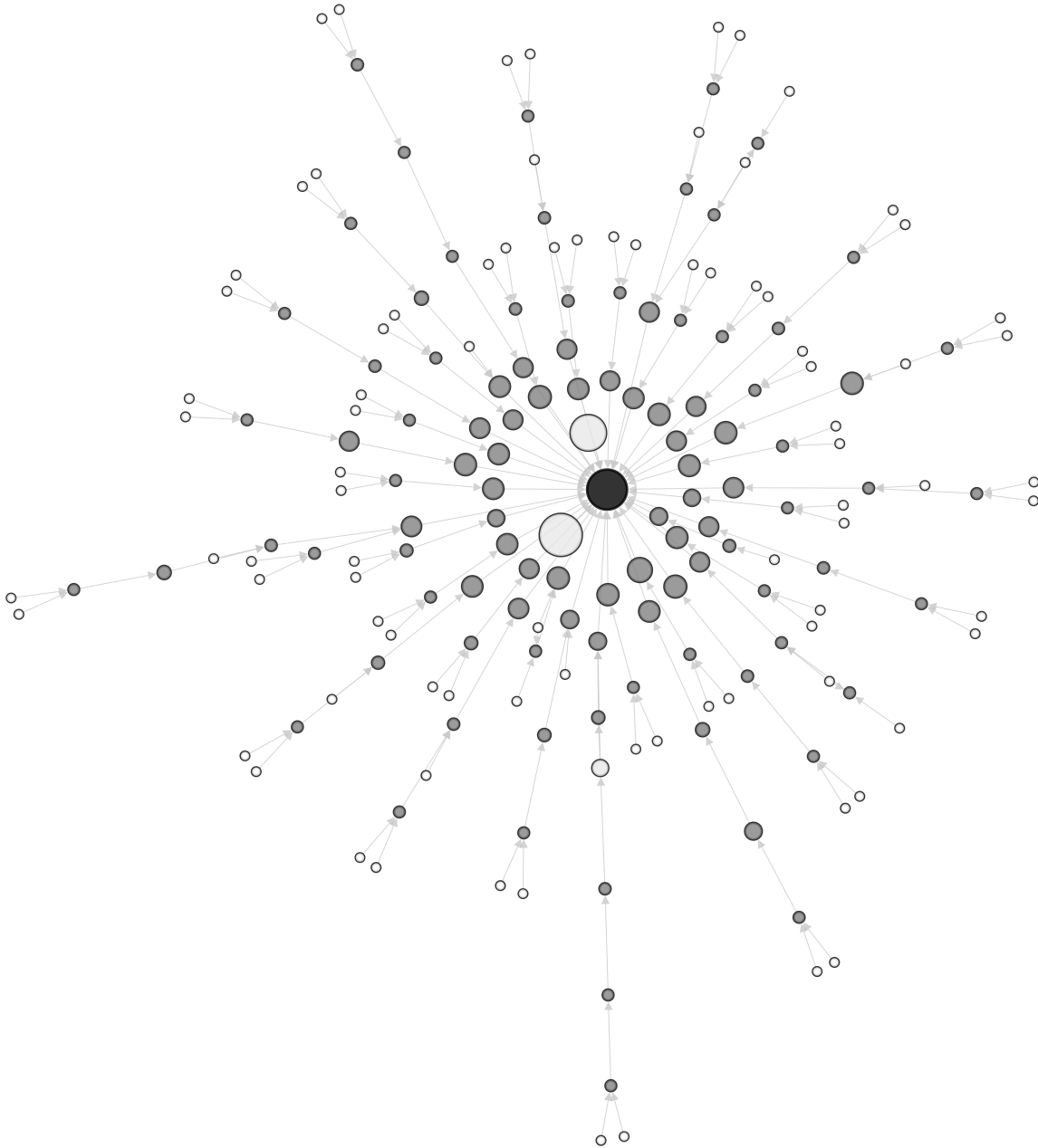
Note: Each circle represents a unique company or individual. Arrows denote ownership links. Black circle is Anbang Insurance (the original company). Grey circles are holding shells. White circles are state owned firms. Empty circles are individual persons. Subsidiaries of the Anbang Group are not included. Data from State Administration of Industry and Commerce ownership records.

Table 4: Firm Sales and PC/PCC Membership

	1997	2006	2012
Provincial PC/PCC	1.25	2.09	4.18
	(.22)	(.19)	(.27)
Prefectural PC/PCC	1.02	1.63	2.51
	(.12)	(.10)	(.11)
County PCC/PCC	.70	.99	1.72
	(.09)	(.07)	(.08)
N	1946	3836	4616

Note: PC/PCC refers to People's Congress or Political Consultative Committee. Entries are coefficients (and standard errors) of a regression of log sales on indicator variables for whether the firm's owner is a member of a Provincial or above PC/PCC (row 1), Prefectural Level PC/PCC (row 2), or County Level or below PC/PCC (row 3). Omitted firms are those whose owners are not PC/PCC members. All regressions include indicator variables for two digit industries.

What has changed over time is the advantage of firms owned by PC/PCC members. The survey distinguishes between members of the PC/PCC at the level of the provinces or above, prefectures, or counties or below. Table 4 shows the sales of firms owned by PC/PCC members (at each level of government) relative to sales of firms whose owners are not in the PC/PCC. Two facts stand out. First, not surprisingly, firms owned by PC/PCC members are larger. Second, the sales gap has increased over time. For owners in county-level PC/PCC, the sales gap increased by 1 log point between 1997 and 2012. And for owners in top-tier Provincial-level PC/PCC, the sales gap increased by almost 3 log points over this period.

Table 5 examines whether politically connected firms had better access to capital.[24] The table reports results from a regression of log bank loans on indicator variables for PC/PCC membership (at the three levels), log sales, and indicator variables for industry. Controlling for industry and firm sales, firms owned by PC/PCC members have better access to bank loans. But there is no

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[24]The survey only provides information on bank loans starting in 2002.

Table 5: Access to Bank Loans and PC/PCC Membership

	2002	2006	2012
Provincial PC/PCC	1.62	1.45	1.59
	(.31)	(.28)	(.40)
Prefectural PC/PCC	.77	.86	1.04
	(.14)	(.14)	(.16)
County PCC/PCC	.71	.62	.63
	(.11)	(.11)	(.12)
N	2602	3836	3566

Note: Entries are coefficients (and standard errors) of a regression of log bank loans on indicator variables for whether the firm's owner is a member of a Provincial or above PC/PCC (row 1), Prefectural Level PC/PCC (row 2), or County Level or below PC/PCC (row 3). Omitted firms are those whose owners are not PC/PCC members. All regressions also include log sales and indicator variables for two digit industries.

clear evidence that the preferential access increased between 2002 and 2012.

Figure 4 presents the evidence on capital productivity by firm size for a broader sample of firms. The figure shows average capital productivity for the balanced panel of privately owned firms in 1998-2007 (top panel) and 2007-2013 (bottom panel) in the Annual Survey of Industrial Production. The x-axis are percentiles of the firm's initial size (in 1998 and 2007), and the y-axis shows the firm's capital productivity in the beginning and end years of each panel. Two points seem clear. First, in all time periods, capital productivity is decreasing in firm size. And if capital productivity is proportional to the marginal product of capital, then this suggests that, consistent with evidence shown in Table 5, larger firms have preferential access to capital. Second, the advantage of large firms does not seem to change in the 1997-2007 period (the two lines in the top panel lie on top of each other). There is some evidence from the 2007-2013 period that the relative advantage of large firms is growing, but the magnitude is quantitatively small.

In Bai et al. (2016), we suggest that the patterns in the 1998-2007 panel can

be explained as a consequence of the centralization of the financial system that took place in 1998. This reform removed the control of local governments over appointments to local branches of the state owned banks. As a consequence, special deals provided by local governments did not include better access to capital. After 2008 these controls were lifted as part of the 4 trillion yuan fiscal stimulus in 2009-2010, and local governments began to have access to capital through the local financial vehicles. To the extent that some of these funds ended up in the hands of large favored private firms, this could explain the pattern seen in the 2008-2013 panel. But still, at least as of 2013, the effect is still quantitatively small.

Local governments also provide land at below market costs to favored firms. Using the power of eminent domain, local governments obtain housing from urban residents and land from farmers, and resell the land to developers and firms. This is the main mechanism via which land use has been transformed in China in recent decades. We obtained transaction level records of these sales from 2000 to 2014 from China's Ministry of Land Resources. For each transaction, we have information on the size of the parcel (in hectares), geographic location, sales price, and indicator variables for whether the land is to be used for housing, commercial real estate, or industrial real estate.

The top panel in Figure 5 plots the allocation of this land between commercial, industrial, and residential use. Specifically, it shows the share of land (in hectares) sold to three types of end users. Roughly 50-60% of new land was dedicated for industrial use. The bottom panel of Figure 5 shows the log price per hectare of land sold for industrial use and commercial use relative to land destined for housing. Industrial land is sold at a substantial discount to residential land. In 2014, for example, the price of industrial land was more than 2 log points lower than that of residential land. In contrast, the price of commercial land is roughly the same as that of residential land.

The obvious problem with interpreting Figure 5 as evidence that local governments subsidize favored firms with cheap land is that industrial land may be

Figure 4: Return to Capital by Firm Size, 1998-2007 and 2007-2013

Y/K 1998 vs 2007

Y/K 2007 vs 2013
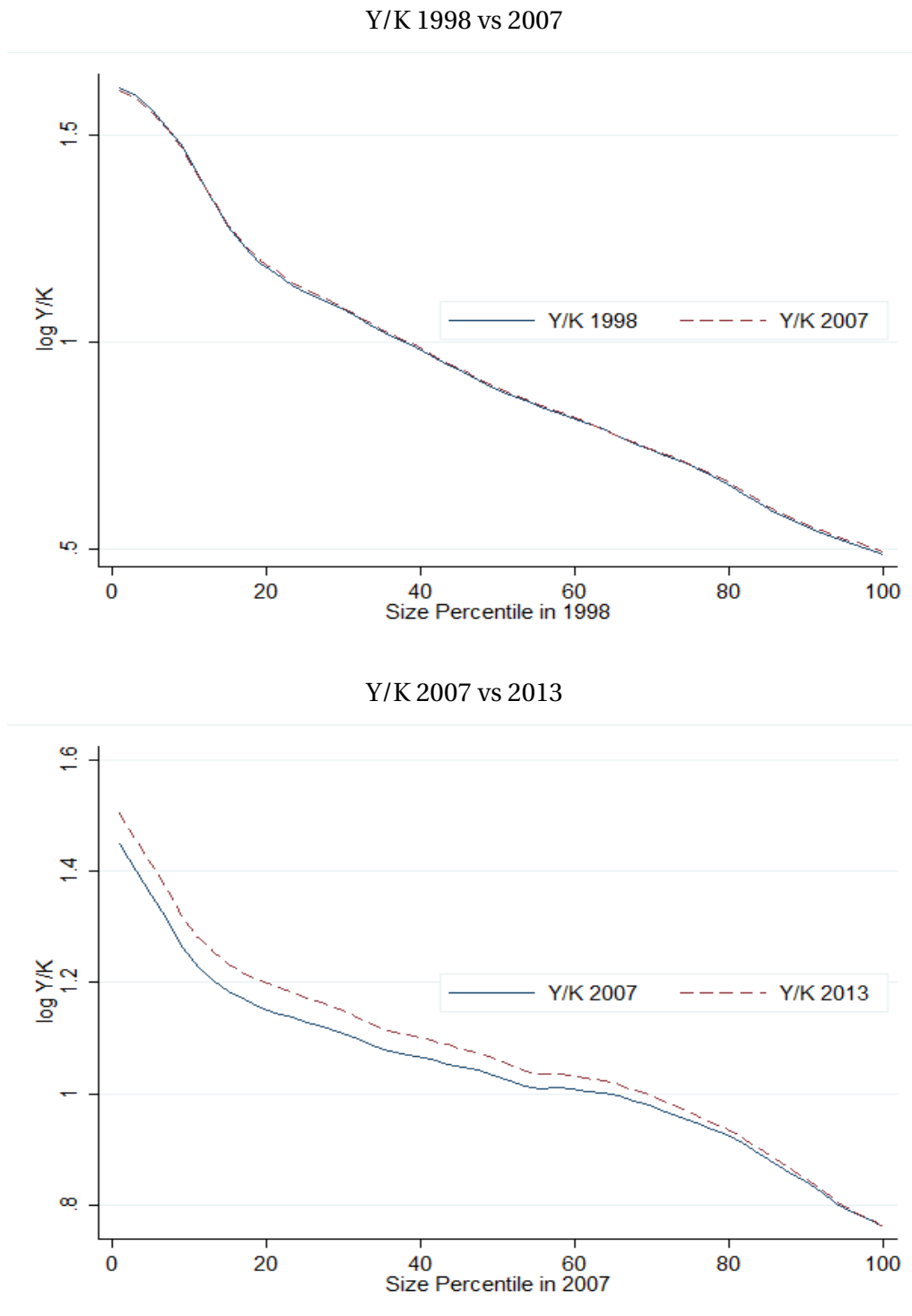
Note: Firm level data from Annual Survey of Industrial Production. Top panel presents log Y/K of balanced panel of firms in 1997 and 2007 in the two years. Bottom panel shows log Y/K of balanced panel of firms in 2007 and 2013 in the initial and ending years. X-axis is the size (measured by employment) percentile of the firm in 1998 (top panel) and 2007 (bottom panel).

Figure 5: Allocation and Price of Land in China

Share of Land Sales (Hectares)

Log Price per Hectare (relative to residential land)
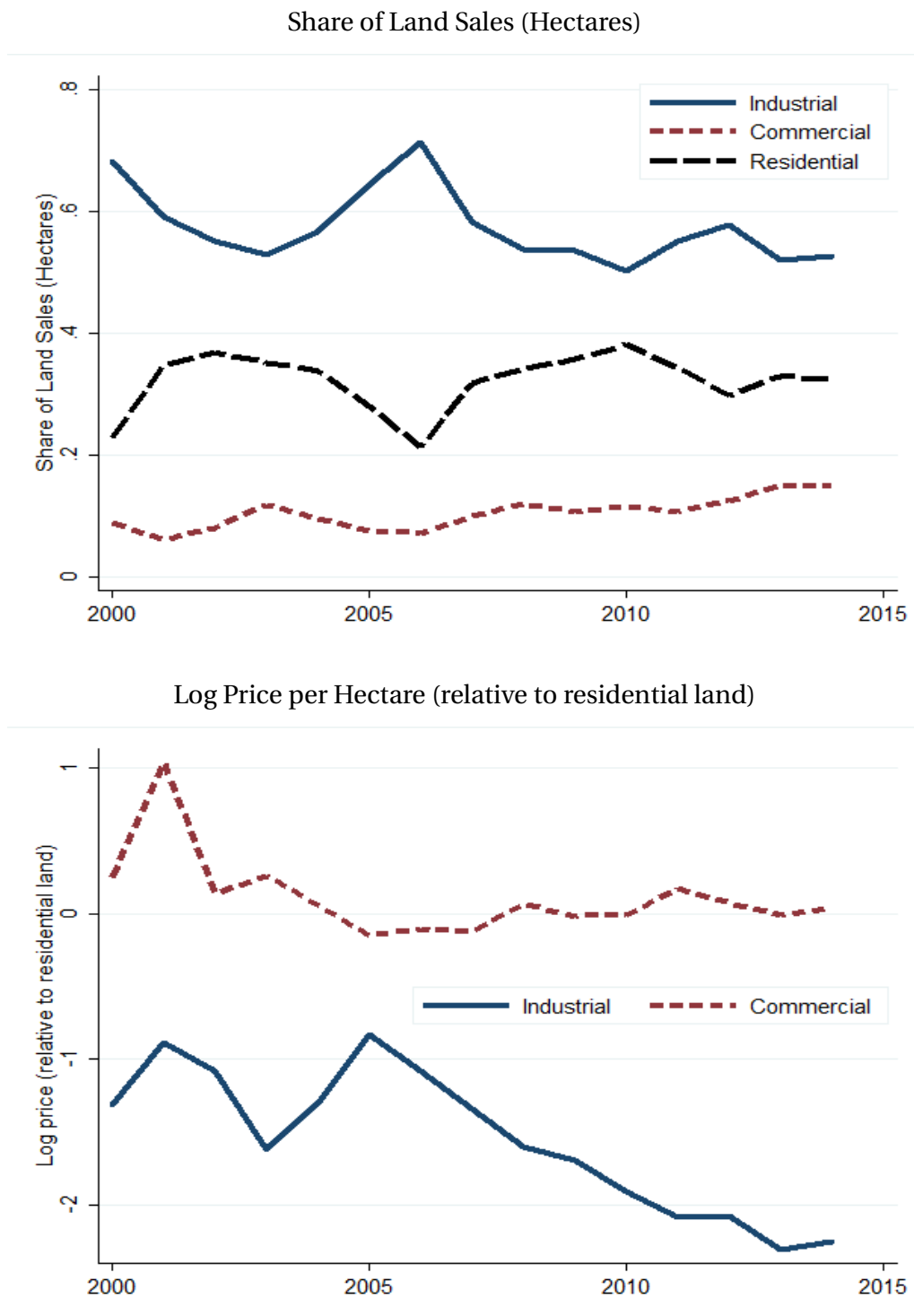
Source: Transaction level records from Ministry of Land Resources (N=979,206). Top panel presents share (in hectares) of land sales by type of user. Bottom panel shows average log price per hectare of commercial and industrial land (both relative to the price of residential land).

very different from residential land. Residential land may be mostly located in higher priced urban locations, while industrial land is concentrated in cheaper more remote locations. Table 6 shows the price gap after we introduce a succession of controls for location. Column 1 replicates the mean gap in prices shown in Figure 5. On average industrial land is -1.7 log points cheaper compared to residential land. Column 2 shows that the price gap drops to 1.5 log points after we introduce indicator variables for counties. So counties with cheaper land allocate more land to industrial use, but within the same county, industrial land is still cheaper than residential land. Column 3 keeps the indicator variables for county and adds controls for the distance of the land from the county center. There is little effect on the price gap. Finally, column 4 looks within narrowly defined neighborhoods and compares the price of land destined for different uses within the same neighborhood. There is little change in the implied subsidy that recipients of industrial land get.

The ultimate question is whether the subsidies in land prices to industrial firms improve the efficiency in land allocation. Almost of this land comes from farmers, so the question is whether the land is now used more productively by industrial firms compared to its use as farmland. We don't have the data to answer this question precisely, but here we point to evidence that the average product of industrial land is higher than that of agricultural land.

4.3. Local Protection and Exports

We argue that special deals in China are provided by local governments, and part of the deal is that competitors of the favored firms are blocked from the local market. For example, Shanghai-GM is one of the favored car companies in Shanghai and supposedly the Shanghai municipal government blocks other car companies (such as Chery) from the market. But if Chery produces better cars it would out-compete Shanghai-GM in markets where Shanghai-GM is not protected. For example, Shanghai-GM is the largest car manufacturer in China

Table 6: Price of Industrial and Commercial Relative to Residential Land

	1	2	3	4
Commercial Land	-0.37	-0.25	-0.24	-0.20
	(.00)	(0.00)	(0.00)	(0.00)
Industrial land	-1.72	-1.51	-1.47	-1.46
	(0.00)	(0.00)	(0.00)	(0.00)
Controls:				
County	No	Yes	Yes	No
Distance from County Center	No	No	Yes	No
Neighborhood	No	No	No	Yes

Note: Unit of observation is a land sale by a local government from the transaction level records of the Ministry of Land Resources (N=979,206). Entries are coefficients (and standard errors) of a regression of log price per hectare of the sale on indicator variables for commercial land and industrial land (omitted category is residential land). All regressions include indicator variables for year.

but does not export. In contrast, Chery is only the 10th largest manufacturer in China but the largest exporter of cars from China. The idea then is that local protection breaks the relationship between productivity and local sales because some productive firms are blocked.

To examine how special deals affect the relationship between domestic sales and export sales, we recast utility as

$$U = \left(\int_0^1 C_z^{\frac{\sigma-1}{\sigma}} dz \right)^{\alpha \frac{\sigma}{\sigma-1}} M^{1-\alpha}$$

where M denotes imports of a homogeneous product made outside of China. The utility of consumers in the foreign country is the same. We assume the foreign country owns a limitless supply of the homogeneous good sold at a fixed price and buys differentiated varieties from China (city A or B). The rest of the model stays the same.[25]

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[25]We provide the details of the model with international trade in the appendix.

We can now consider the effect of special deals on exports. Revert back to
the case where city A supports firms $z \in [0, z_c]$ where $z_c > \tilde{z}$ and can only block
competitors in the local market. Figure 5 summarizes the products sold in each
market. Remember that productivity of A's firms *falls* as z increases. Figure 5
(top panel) shows that city A's most productive firms export to all markets (the
foreign market and city B), but the least productive firms $z \in [\tilde{z}, z_c]$ only sell
in the local market where they are protected from competition. The bottom
panel in Figure 5 shows that this is not true in city B. Remember that B is less
productive as z increases. All firms in B export to the foreign market but only
the most productive firms $z \in [z_c, 1]$ sell to the other domestic market (city A).
The least productive firms in B sell in the foreign market but are blocked in the
domestic market in City A.

Figure 5: Product Specialization in Two-City Model of Special Deals
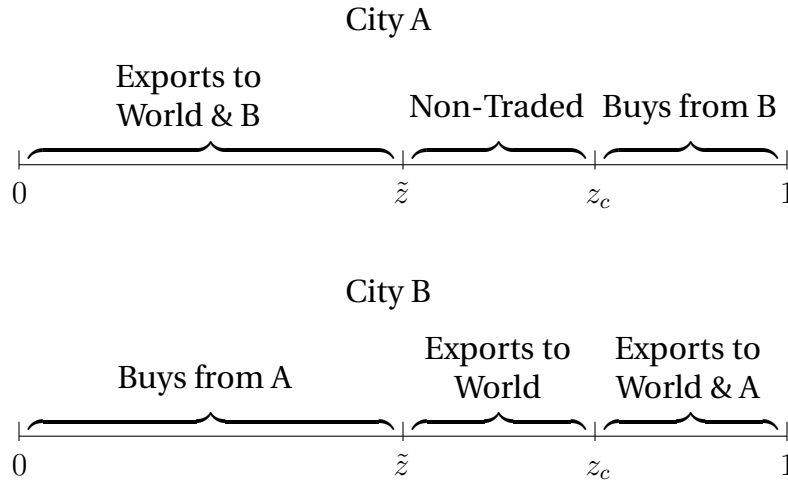
The top panel in Figure 6 summarizes the prediction of the model on the
relationship between the exporting (to the foreign market) and the firm's do-
mestic sales. In the model, firms with the smallest domestic sales export. These
are the firms in A that find their access to other domestic markets blocked.
Moving up the size distribution, A's firms $z \in [\tilde{z}, z_c]$ are less productive than

their counterparts in B but have larger domestic sales because of market A is larger than market B. These firms do not export. We think of these firms as reflecting the case of Shanghai-GM that have large domestic sales because of their privileged position in a large domestic market, but do not export because they are not competitive without the protection. Lastly, the most productive firms in the two cities sell to all markets (foreign and all domestic markets).

The middle panel in Figure 6 shows the relationship between exporting and domestic sales in the cross-section of the Chinese manufacturing data.[26] As can be seen, a remarkable feature of the Chinese data is that there is a cluster of firms with low domestic sales that also export. For comparison, the bottom panel in 6 shows the same relationship in the cross-section of the U.S. manufacturing data.[27] As can be seen, there is no such pattern in the U.S. data.

The model also makes a strong prediction about the elasticity of exports with respect to domestic sales. For the most productive firms in the two cities, the elasticity of the share of the export market with respect to the share of the domestic market should be close to one. But for the firms in B that find their access to city A blocked, the elasticity will be significantly lower than one. Intuitively, higher productivity has a larger effect on their sales in the the market where they face no barriers compared to their sales in the domestic Chinese market where they are blocked.

The top panel in Figure 7 illustrates this prediction of the model (the thin line is the 45° line). The elasticity of domestic sales to exports predicted by the model is lower at low levels of exports. The bottom panel in Figure 7 shows the elasticity in the Chinese data.[28] The elasticity of domestic sales to exports is essentially zero for small firms, and almost one for firms with above-mean export sales.

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[26]Figure 6 plots the data for the 2007 cross-section of the Chinese Annual Industrial Survey. The pattern is identical in all years of the data. We dropped export-processing plants from the sample.

[27]The data is from the 1987 cross section of the U.S. manufacturing census.

[28]The data is from the 2007 cross-section of the industrial survey.

Figure 6: Probability of Exporting by Firm Size: Model vs. Data (China and US)

Model Simulation

Data: China

Data: United States
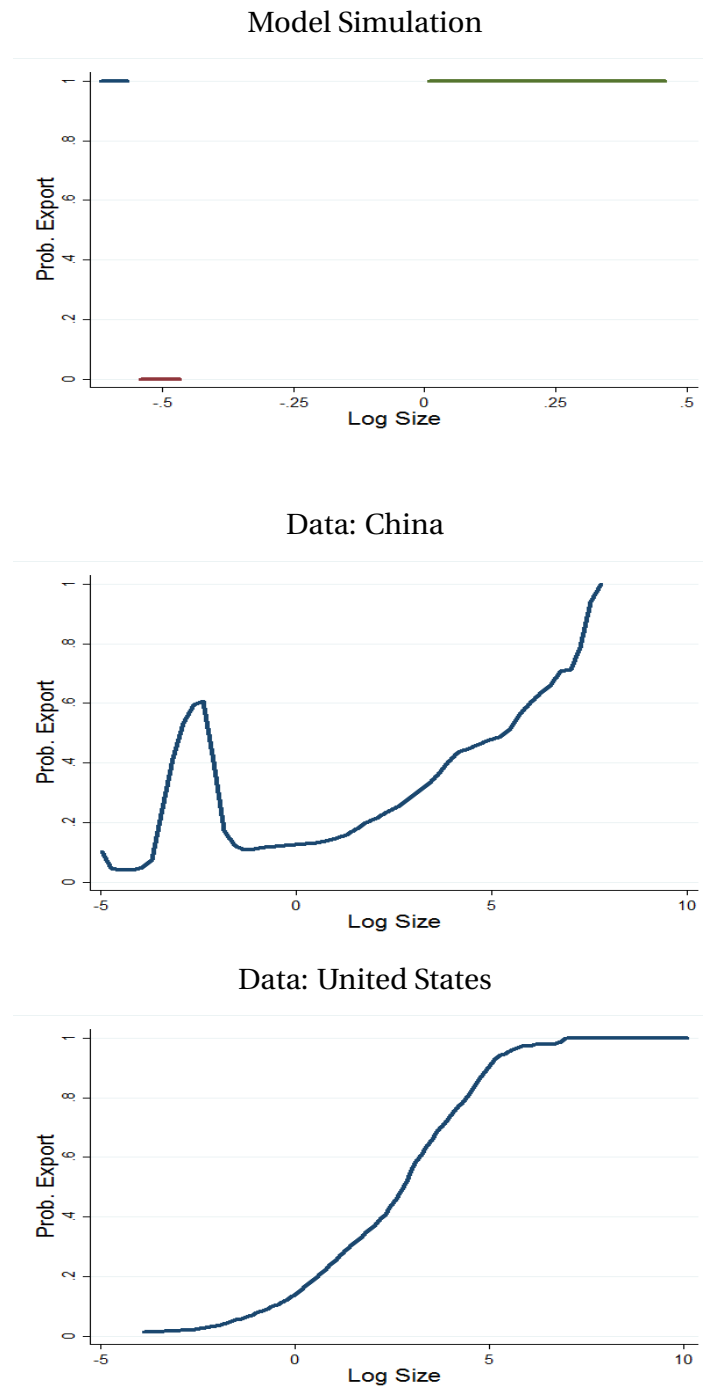
Note: Figures present the probability of export vs. log firm size (relative to the mean). Top panel is the model simulation, middle panel is from the Chinese data, and bottom panel is from the US data. China data from 1998 Annual Survey of Industrial Production. US data from 1987 Manufacturing Census.

The idea that Chinese local governments protect local firms has a long history. Young (2000) argues that the decentralization of tax revenues in the 1980s coupled with price wedges prompted local governments to protect local industries to retain the revenues implied by the price wedge. The price wedges disappeared by the late 1980s and the 1994 tax reform that centralized tax revenues presumably removed the incentive of local governments to protect firms that generate large tax revenues.

Our argument is that the growth of the special deal regime increasingly became the main incentive for local governments to protect local firms, but this time only for the favored firms. Our evidence suggests that many Chinese firms find large segments of the Chinese domestic market closed to them.[29] Local protection is welfare reducing of course, but we argue that this effect is attenuated by the fact that local governments can only protect firms in their cities. In addition, the case of the East Hope Group suggests suggests that many large firms have been able to strike deals with multiple local governments, which in principle can also attenuate the effect of local protection. A more important point though is that local protection is only one of the many effects of special deals, so it is imperative to take all these effects into account. And we argue that the productivity gains among the favored firms may well be significantly larger than the negative effects of local protection.

5.   Risks

We argue that China's growth, particularly since the early 1990s, is due to the increased availability of special deals by competing local governments. There are alternative explanations for each piece of evidence we introduced, but we believe that the totality of the empirical and institutional evidence supports the case that special deals, as practiced by China for most of the last 30 or so years,

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[29]Barwick et al. (2017) document strong home (city level) bias of car purchases using car registration data.

Figure 7: Domestic Sales vs. Exports: Model vs. Data

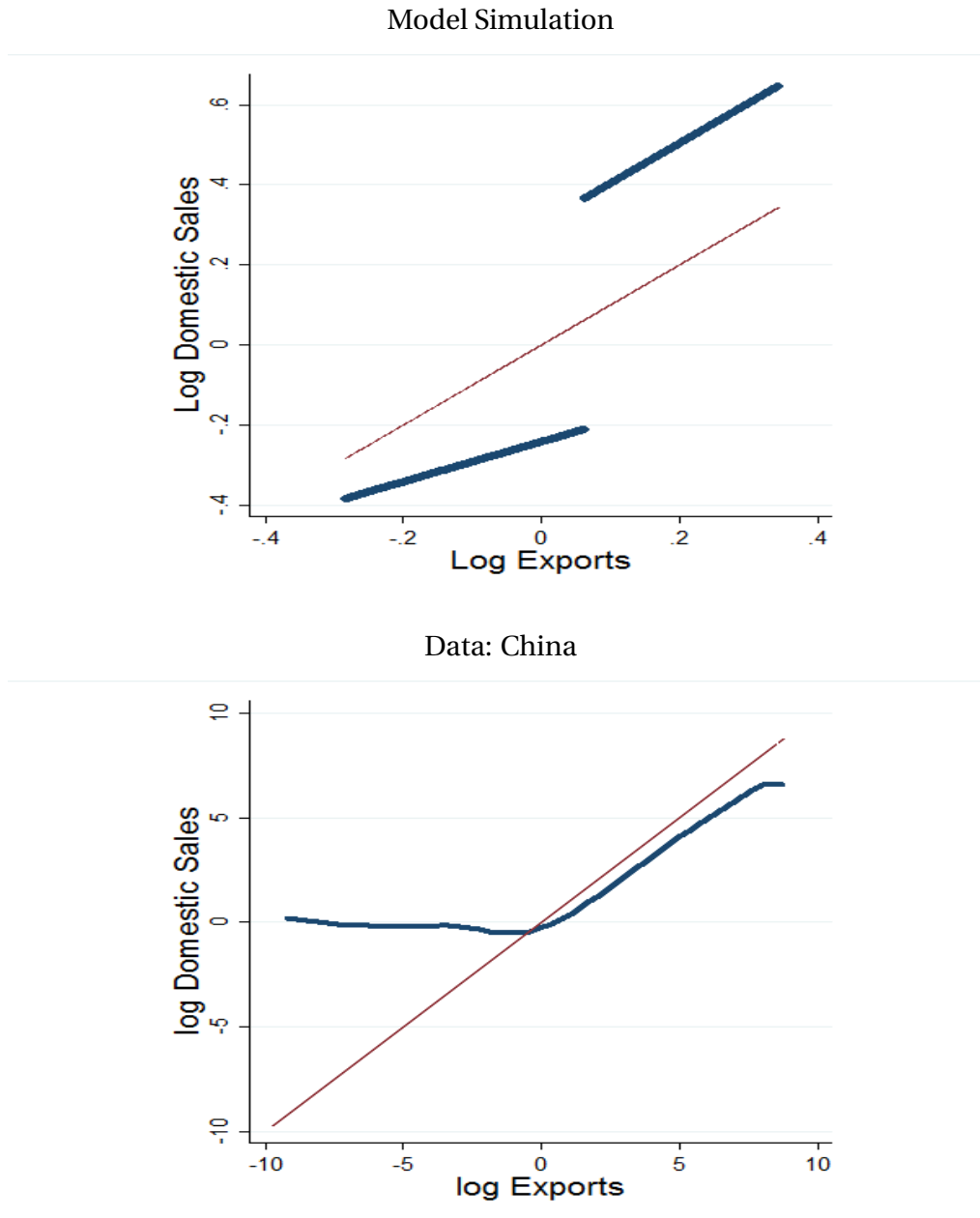### Model Simulation

Data: China

Figure present the relationship between log domestic sales (y-axis) and log exports (x-axis) for exporting firms (firms that only sell to domestic market are excluded). Top panel is the model simulation. Bottom panel is the Chinese data from 1998 Annual Survey of Industrial Production. The thin red line in both panels is the 45 degree line.

has been behind the extraordinary growth in China.

We want to be clear, however, that growth via special deals is a high-wire act. The effectiveness of the Chinese special deal system depends on the discretion of local officials and on minimizing the damage borne by firms that do not get special deals. A key question is what exactly are the incentives of local Party officials to support local companies. It could be recognition by the Communist Party's Organization Department, and local party leaders that generate more "profits for the party" are promoted in the Party hierarchy. In the absence of access to the personnel files of the Communist Party, we don't know whether this is the case. It is possible, as some authors have done, to examine the the correlation of promotion probability and local GDP growth, and the evidence from this work is at best mixed.[30]

It could be the case that local party officials work very hard to support favored private firms because they are able to obtain private rents from these firms. If this is the case, the danger is that constraints on the ability of local officials to obtain private benefits will lower growth. Since 2014, there has been an unprecedented crackdown on corruption. Figure 8 presents the annual flow of new corruption cases of local party officials. The top panel shows the number of new corruption cases each year for party officials at the county level (top panel), city or prefecture level (middle panel), and provincial level (bottom panel). There was almost a doubling in the number of corruption cases of officials at the county level in 2014 and 2015. At the city-level and provincial level, the number of anti-corruption cases more than quadrupled. The evidence for 2016 and 2017 show that the anti-corruption campaign, at least as seen by the number of arrests, has declined relative to 2014 and 2015.

There are many accounts that the corruption crackdown has diminished the willingness of local officials to help local businesses. This could be because their main incentive was the monetary payoff, or it could be the fear of being

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[30]Li and Zhou (2005) find evidence from promotion of Provincial level officials that GDP growth is positively correlated with promotion. Shih et al. (2012)'s evidence suggests that personal connections is the primary determinant of promotion.

Figure 8: Corruption Cases by Level of Government

County Level

City Level

Provincial Level
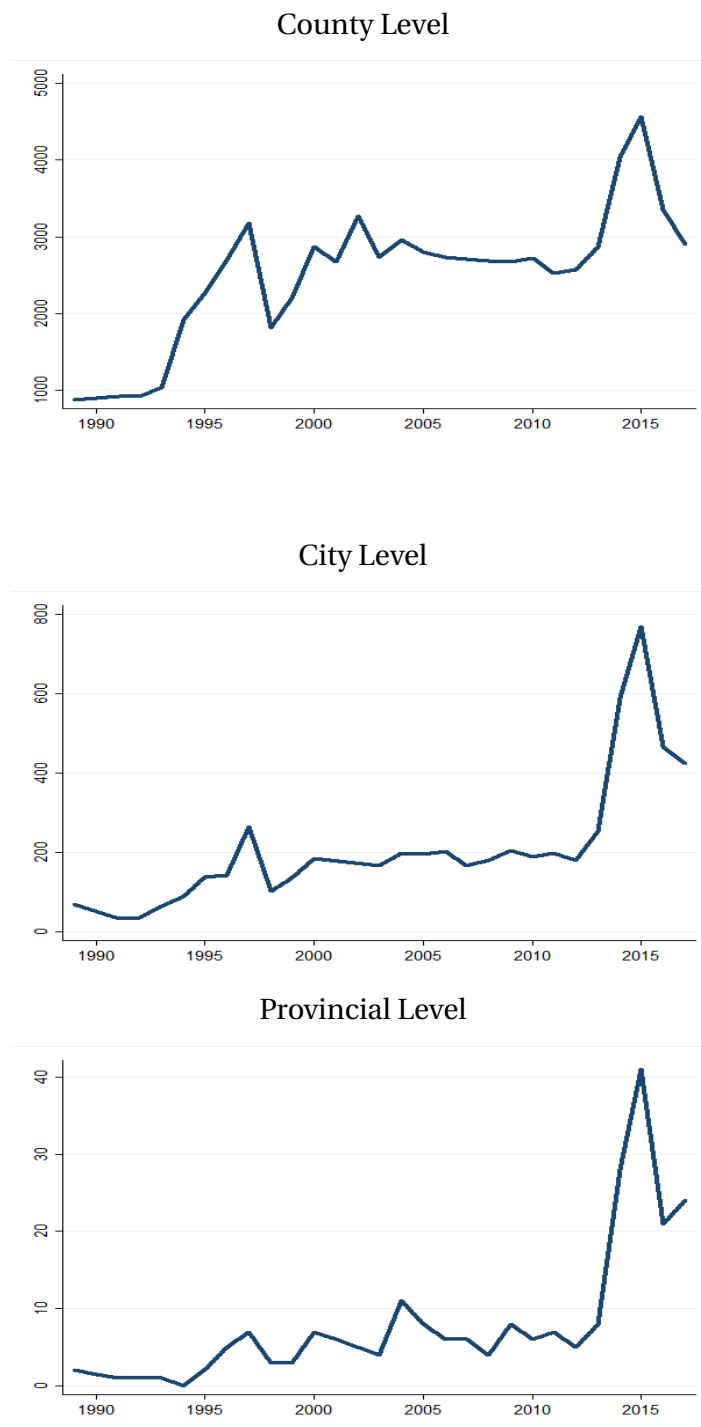
Source: Annual reports of the Supreme People's Procuratorate of China

Figure 9: Growth Rate of GDP/worker
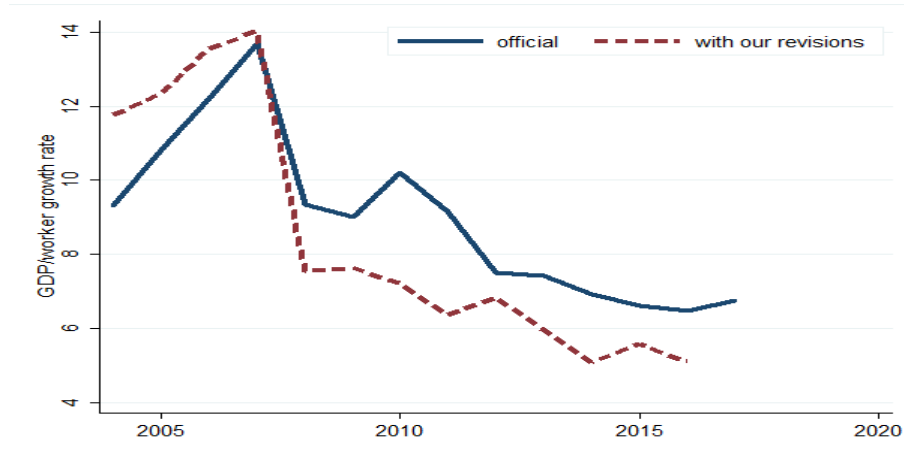
Sources: Official numbers from NBS. GDP growth labeled "with our revisions" are our estimates from Bai et al. (2019).

accused of receiving a payoff. Both reasons will diminish the extent to which firms get special deals. And perhaps not surprisingly, Figure 9 shows that the GDP growth has slowed down significantly since the onset of the 2008 global financial crisis. We do not know whether the anti-corruption campaign was the main driver of the growth slowdown, as there are other possibilities. It could be distortions due to the housing bubble. In Bai et al. (2016) we document that growing financial distortions due to the growth of local financing vehicles could also be important. At this point, the data we have at our disposal does not allow us to precisely quantify the importance of these forces.

But perhaps the biggest risk of a special deals system is that it creates powerful entrenched interests that make reforms very difficult. After all, a special deals regime, even with the Chinese characteristics, is a second best solution to the problem of poor institutions. In terms of our model, the first best is to reduce δ to zero with no special deals. But the difficulty is that once a special deal system is in place, local officials and large businesses benefit from the system, and their interests are threatened with any reform that reduces δ and

the extent of the special deals.

Chinese authorities have made multiple efforts in recent years to move away from a regime of special deals. Perhaps in reflection of this improvement, China's ranking in the World Bank's *Doing Business* indicators has improved dramatically since 2013 from about the 80th percentile to about the 20th percentile in the world distribution of "ease of starting of starting a business." It is difficult to know however whether the improvement shown in Figure 10 reflects real improvement or simply changes in methodology by the World Bank.[31] And the fact remains that growth has declined dramatically, despite the purported improvement in formal business institutions.

The Chinese "special deals" regime has been enormously successful in moving the Chinese economy to where it is today. We believe it has enabled the growth of the large number of Chinese firms that now dominate many world markets. The danger is that some of the characteristics that made the system work in the past, such as unfettered ability to make deals and obtain private rents, may no longer be there today. At the same time, other features of the special deal regime, such as the presence of powerful vested interest groups, are clearly still present and have a strong interest in blocking precisely the reforms that China may want to undertake in the future. This, we believe, is the key dilemma that China finds itself in today.

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[31]The World Bank's *Doing Business* project revised its methodology in response to issues raised by the Chinese government. See "China Seeks to Water Down Key World Bank Report," Financial Times, May 6, 2013 for more details.

Figure 10: China's Rank in "Doing Business" Indicators
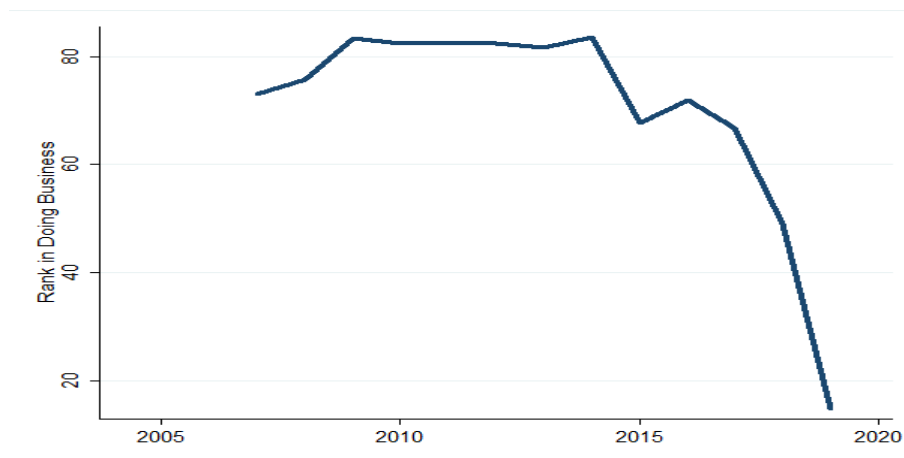
Note: Figure reports China's percentile rank in "ease of starting a business" from the World Bank's *Doing Business* project. We scale China's score by the number of countries in the data each year to convert the score into a percentile rank.

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